

STUDY SERIES
(Survey Methodology #2013-01)

**Final Report of Usability Testing of the
2012 National Census Test (NCT) Online Survey:
Focus on Coverage, Race Questions, Date Format**

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1. Introduction and Background

The US Census Bureau’s Human Factors and Usability Research Group performed usability and accessibility testing of the 2012 National Census Test (NCT) online survey from June 7-June 21, 2012. The results from the usability study are presented in this report. The focus of the 2012 NCT is on coverage issues so we examined some new approaches to presenting coverage questions for the usability test. There were four major manipulations within the study:

- 1) Presence or absence of a POPCOUNT screen containing a list of residence rules on Roster questions
- 2) Two versions of the coverage question for Undercount questions;
- 3) Two versions of the Race/Origin question;
- 4) Two versions of coverage questions for Overcount questions.

These manipulations were combined to create four different instrument paths for the study. The different instrument paths are shown in Table 1.

Table 1: NCT Study Instrument Path & Version

Path #	Roster Version	Undercount Version	Race/Origin Version	Overcount Version
1	1	1	1	1
2	1	2	2	2
3	2	1	1	1
4	2	2	2	2
Roster				
V1 = Popcount & People screens			V2 = People screen	
Asks for a popcount before getting the full roster.			Only asks for roster names without a popcount.	
Undercount				
V1 = Miss & Stay screens			V2 = Add1-Add4 screens	
Provides a single screen with all the undercount probes and asks if anybody was left off the roster. Then, the additional names are provided regardless of reason.			Breaks up the undercount probes into a series of questions and names are collected along the way. Each name is associated with a specific undercount type.	
Race				
V1 = Race/Origin1 screen			V2 = Race/Origin2 screen	
Seven checkboxes with a write-in box for each one.			Seven checkboxes followed by a separate question with three write-in boxes.	
Overcount				
V1 = Elsewhere screens			V2 = Delete1-Delete7 screens	
Provides all the overcount probes on a single screen per person.			Provides each overcount probe one at a time and asks if anybody sometimes lived or stayed elsewhere for that reason. If the respondent says "Yes" they are then asked to select which roster person lived elsewhere for that particular probe.	

The 20 participants recruited for this study were assigned to complete one of the NCT instruments. Thus, we had five participants on each path: 1, 2, 3, and 4. Regardless of the path, each participant had to complete either V1 or V2 of the Roster, Undercount, Race, and Overcount questions. All of the participants completed the NCT survey tasks successfully without a dropout. The overall reaction to the surveys was positive and the usability testing did reveal some usability and accessibility issues.

1.1 *Experimental Manipulations*

1.1.1 **Presence or absence of a POPCOUNT screen.**

The 2012 NCT will compare the effectiveness of the coverage questions with an initial screen that displays abbreviated versions of the Census residence rules (POPCOUNT; Figure 1) versus a version of the survey without such a screen that simply starts by asking for a list of household members only showing the PEOPLE screen (see Figure 2).

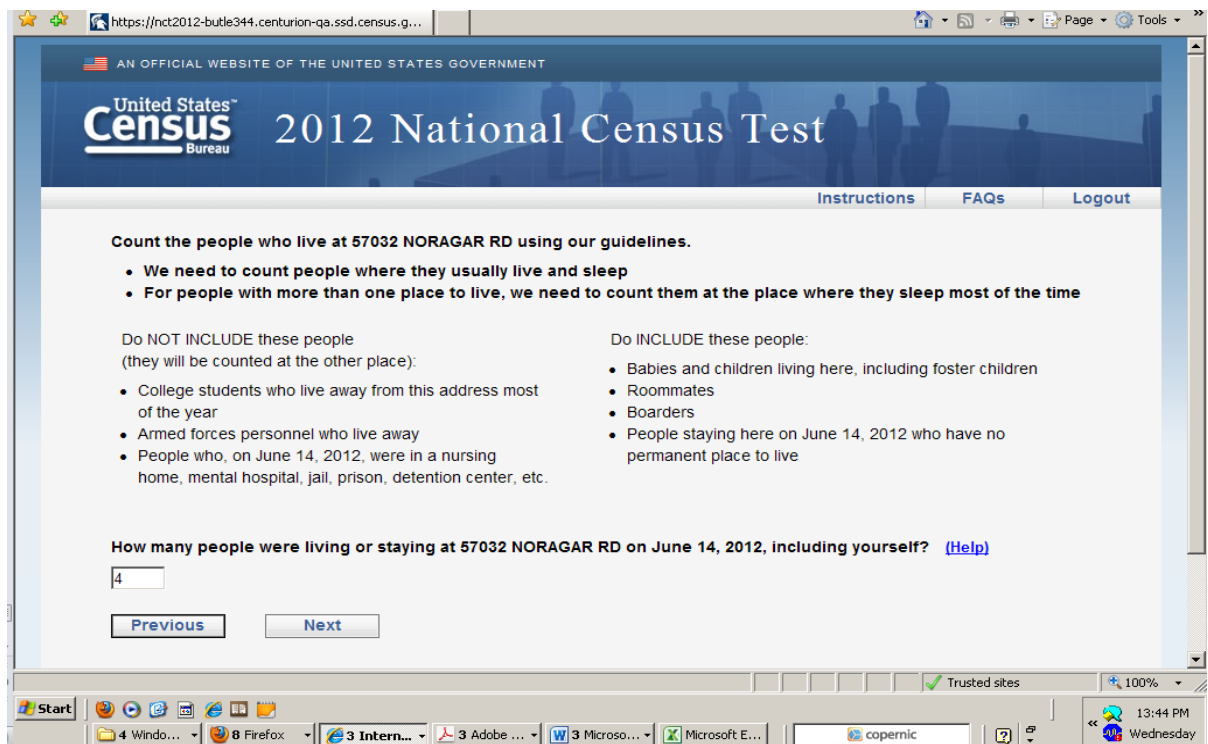


Figure 1. POPCOUNT screen that lists Census residence rules

AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT

United States
Census
Bureau

2012 National Census Test

[Instructions](#) [FAQs](#) [Logout](#)

Please list the name of each person who was living and sleeping at 57032 NORAGAR RD on June 14, 2012. [\(Help\)](#)

Enter names until you have listed everybody who was living or staying there, then click Next.

First Name	MI	Last Name
Jane	M	Doe
John	M	Doe
Nate	M	Doe
Nick	M	Doe

[Click here to add more people](#)

Figure 2. PEOPLE screen where residents of the sample address are listed

1.1.2 Comparison of two Undercount Versions

The 2012 NCT will examine whether it is an effective way to gather the names of the household members by asking the question using V1 (see MISS & STAY screens ; see Table 1 & Figures 3 & 4) or V2, which asks a series of questions, and names are collected along the way (see ADD1-ADD4 screens, Figure 5).

The names listed so far are:

- Jane M Doe
- John M Doe
- Nate M Doe
- Nick M Doe

We do not want to miss any people who might have stayed at 57032 NORAGAR RD on June 14, 2012. Were there any additional people that you did not already list?
[\(Help\)](#)

For Example:

- Babies?
- Foster children?
- Any other relatives?
- Roommates or people not related to you?
- Anyone else staying at 57032 NORAGAR RD who had no permanent place to live on June 14, 2012?
- Anyone else who usually lives or stays at 57032 NORAGAR RD but was away on June 14, 2012?
- Anyone else living or staying at 57032 NORAGAR RD on June 14, 2012 who is no longer there?

Yes
 No

Accessibility Privacy Security

Figure 3: MISS screen

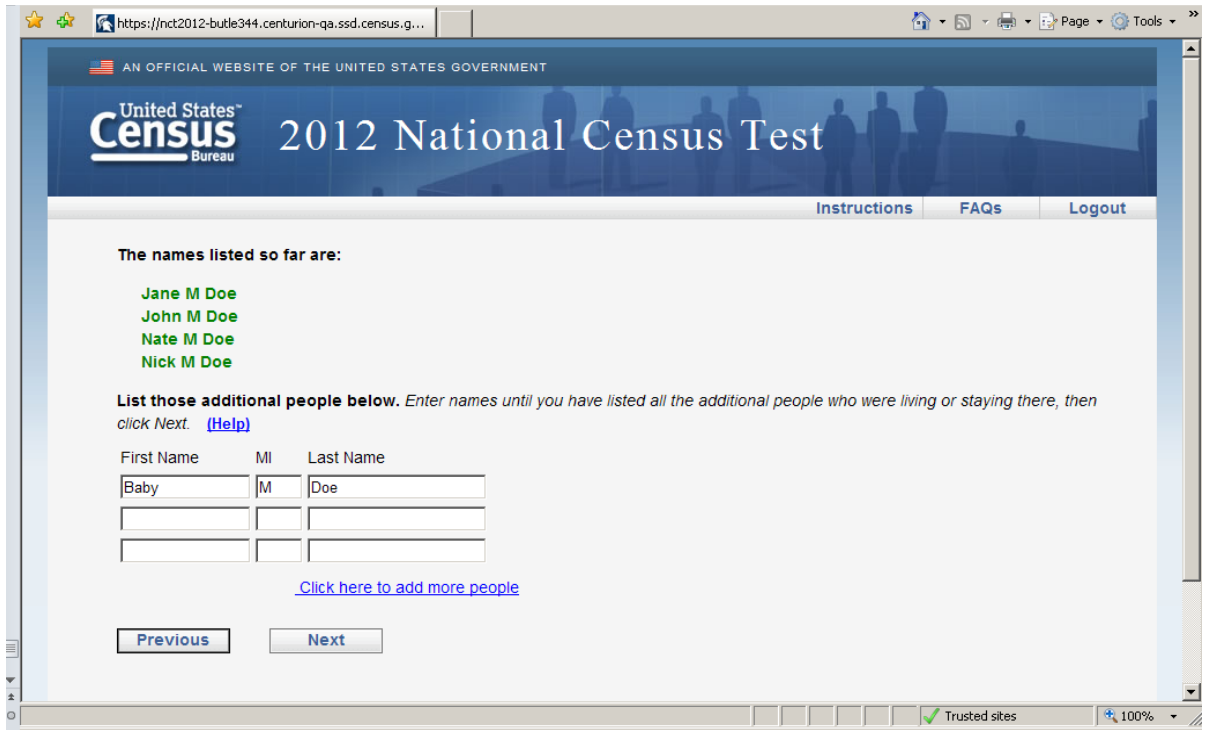


Figure 4: STAY screen if the participants answered Yes on MISS screen

The names listed so far are:

- Jane M Doe
- John M Doe
- Nate M Doe
- Nick M Doe

We do not want to miss any people who might have stayed at 3 IWANNTAKEY DR around June 14, 2012. Were there any additional people that you did not already list? [\(Help\)](#)

For example:

Babies? Yes No

Foster children? Yes No

Any other relatives? Yes No

Roommates or people not related to you? Yes No

Add 1

The names listed so far are:

- Jane M Doe
- John M Doe
- Nate M Doe
- Nick M Doe
- Baby M Doe
- Foster M Doe
- Other M Doe
- Stranger M Doe

Was there anyone else staying at 3 IWANNTAKEY DR who had no permanent place to live on June 14, 2012?

Yes

No

Add 2

The names listed so far are:

- Jane M Doe
- John M Doe
- Nate M Doe
- Nick M Doe
- Baby M Doe
- Foster M Doe
- Other M Doe
- Stranger M Doe

Was there anyone else who usually lives or stays at 3 IWANNTAKEY DR but was away on June 14, 2012?

Yes

No

Add 3

The names listed so far are:

- Jane M Doe
- John M Doe
- Nate M Doe
- Nick M Doe
- Baby M Doe
- Foster M Doe
- Other M Doe
- Stranger M Doe
- An E Wunelse

Was there anyone else who usually lives or stays at 3 IWANNTAKEY DR but was away on June 14, 2012?

Yes

No

Add4

Figure 5: ADD1-ADD4 Screens

1.1.3 Two versions of the Race/Origin question

The 2012 NCT will test two versions of a combined Race/Origin question to compare their performance against each other. These versions are similar to two versions tested in the 2010 Hispanic Origin Alternative Questionnaire Experiment (AQE) (Compton, Bentley, Ennis, & Rastogi, 2012).

Figure 6 and Figure 7 show the Race/Origin Questions from the AQE study. The figure from the X3 panel of the AQE is the same as the RACE1 panel for the NCT (Figure 6). The X4 panel Race/Origin question is the same as the NCT's RACE2 question (Figure 7). The primary difference between the AQE and the NCT Race/Origin questions is that the word "Negro" was removed from the NCT questions.

8. What is Person 1's race or origin? Mark one or more boxes AND write in the specific race(s) or origin(s).

White — *Print origin(s), for example, German, Irish, Lebanese, Egyptian, and so on.* ↴

Black, African Am., or Negro — *Print origin(s), for example, African American, Haitian, Nigerian, and so on.* ↴

Hispanic, Latino, or Spanish origin — *Print origin(s), for example, Mexican, Mexican Am., Puerto Rican, Cuban, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.* ↴

American Indian or Alaska Native — *Print name of enrolled or principal tribe(s), for example, Navajo, Mayan, Tlingit, and so on.* ↴

Asian — *Print origin(s), for example, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.* ↴

Native Hawaiian or Other Pacific Islander — *Print origin(s), for example, Native Hawaiian, Guamanian or Chamorro, Samoan, Fijian, Tongan, and so on.* ↴

Some other race or origin — *Print race(s) or origin(s).* ↴

→ If more people were counted in Question 1, continue with Person 2.

Figure 6: The combined Hispanic origin and Race/Origin question on the AQE X3 experimental panel.

8. What is Person 1's race or origin? Mark one or more boxes.

- White
- Black, African Am., or Negro
- Hispanic, Latino, or Spanish origin
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Some other race or origin

9. Write in Person 1's specific race, origin, or enrolled or principal tribe – For example, African Am., Argentinean, Chinese, Egyptian, German, Marshallese, Mexican, Mexican Am., Mongolian, Native Hawaiian, Navajo, Nigerian, Tingit, and so on.

Write in the specific race(s), origin(s), or tribe(s). ↴

→ If more people were counted in Question 1, continue with Person 2.

Figure 7: The combined Hispanic origin and Race/Origin question on the AQE X4 experimental panel.

The two alternative NCT versions (Figure 8 and Figure 9) require the respondent to specify a Race/Origin within one question. Both questions contained prefills for origins in the text-entry boxes.

Figure 8 shows version 1 of the Race/Origin question (each category has a write-in box beneath it) and Figure 9 shows version 2 (split-screen; the categories are at the top of the page and the write-in fields are at the bottom of the page).

The screenshot shows a web browser window with the URL <https://nct2012-butle344.centurion-qa.ssd.census.g...>. The main content area displays the question: "What is Jane M Doe's race or origin? Select one or more boxes AND enter the specific race(s) or origin(s). (Help)". Below the question are seven radio button options, each with a corresponding text input field:

- White — Enter origin(s), for example, German, Irish, Lebanese, Egyptian, and so on. (Text box contains "Polish Irish")
- Black or African Am. — Enter origin(s), for example, African American, Haitian, Nigerian, and so on.
- Hispanic, Latino, or Spanish origin — Enter origin(s), for example Mexican, Mexican Am., Puerto Rican, Cuban, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.
- American Indian or Alaska Native — Enter name of enrolled or principal tribe(s), for example, Navajo, Mayan, Tlingit, and so on.
- Asian — Enter origin(s), for example, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.
- Native Hawaiian or Other Pacific Islander — Enter origin(s), for example, Native Hawaiian, Guamanian or Chamorro, Samoan, Fijian, Tongan, and so on. (Text box contains "Enter origin(s)")
- Some other race or origin — Enter race(s) or origin(s).

At the bottom of the form are "Previous" and "Next" buttons. The footer of the browser window includes "Accessibility", "Privacy", and "Security" links, and a status bar at the very bottom shows the URL, a "Trusted sites" indicator, and a "100%" zoom level.

Figure 8: NCT Race/Origin 1 Screen: Write-in Text Box after each Category

The screenshot shows a web browser window with the URL <https://nct2012-butle344.centurion-qa.ssd.census.g...>. The page has navigation links for [Instructions](#), [FAQs](#), and [Logout](#). The main content area contains the following text and form elements:

Please answer BOTH questions on race and origin.

What is Jane M Doe's race or origin? *Select one or more boxes.* [\(Help\)](#)

- White
- Black or African Am.
- Hispanic, Latino, or Spanish origin
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Some other race or origin

Enter Jane M Doe's specific race, origin, or enrolled or principal tribe - *For example, African Am., Argentinean, Chinese, Egyptian, German, Marshallese, Mexican, Mexican Am., Mongolian, Native Hawaiian, Navajo, Nigerian, Tlingit, and so on.* [\(Help\)](#)

Enter the specific race(s), origin(s), or tribe(s).

Below this instruction are three empty text input boxes stacked vertically.

At the bottom of the form area are two buttons: [Previous](#) and [Next](#).

The footer of the page contains links for [Accessibility](#), [Privacy](#), and [Security](#).

Figure 9: NCT Race/Origin 2 Screen: Write-in Text Boxes after all Categories (Split-Screen).

1.1.4 Two versions of the Overcount questions

Two versions of the Overcount questions were used in the study. In V1, the participants were asked the Overcount questions using the Elsewhere screen (see Figure 10). This screen contains all the Overcount probes on a single screen per person. In V2, the participants were asked a series of questions—DELETE1- DELETE7. Figure 11 shows the DELETE screens.

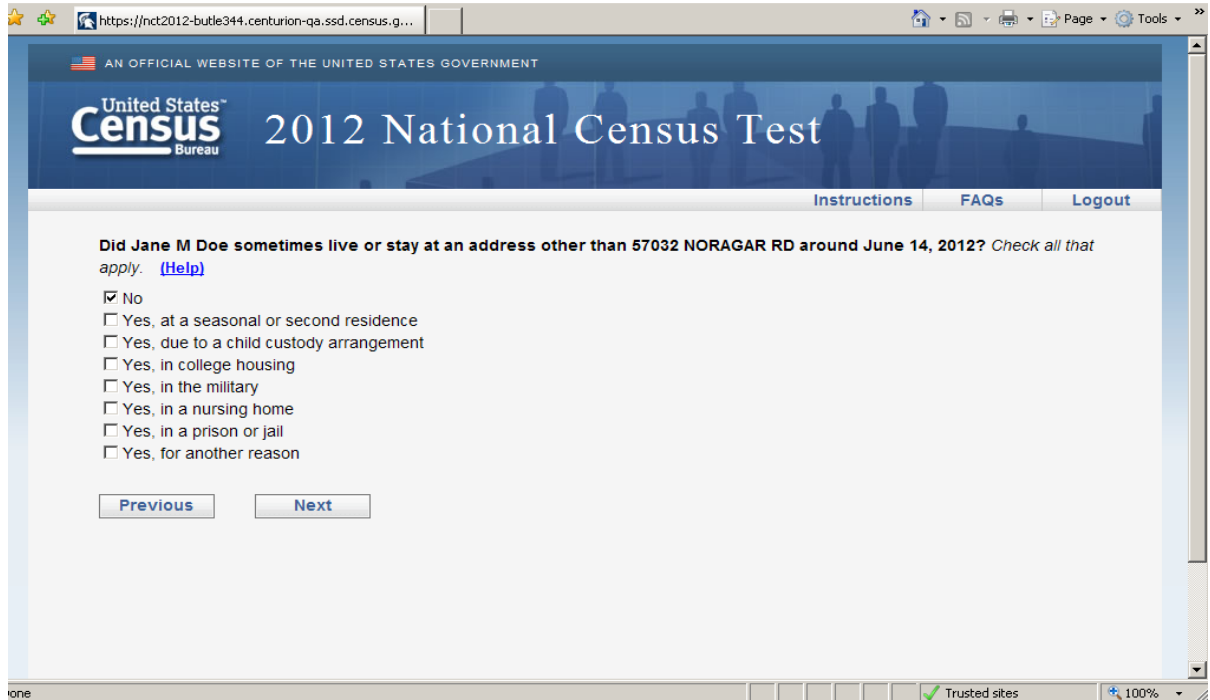


Figure 10: Elsewhere screen

Some people live or stay in more than one place and we would like to make sure everyone is only counted once.

Does anyone sometimes live or stay at another home, like a seasonal or second residence? [\(Help\)](#)

Yes
 No

Delete 1

Does anyone sometimes live or stay somewhere else with a parent, grandparent, or other person? [\(Help\)](#)

Yes
 No

Delete 2

Was anyone staying away from 3 IWANNTAKEY DR while living in college housing - on or off campus - around June 14, 2012? [\(Help\)](#)

Yes
 No

Delete 3

Was anyone staying away from 3 IWANNTAKEY DR to be closer to a job (including military assignment), around June 14, 2012? [\(Help\)](#)

Yes
 No

Delete 4

Does anyone sometimes stay in a place like a nursing home or a group home? [\(Help\)](#)

Yes
 No

Delete 5

Was anyone recently in jail or prison? [\(Help\)](#)

Yes
 No

Delete 6

Does anyone sometimes live away from 3 IWANNTAKEY DR for any reason other than those just mentioned? [\(Help\)](#)

Yes
 No

Delete 7

Figure 11: Overcount V2 (Delete 1- Delete 7) screens

2. Usability Testing Method

This section describes the materials used in the study, the procedures, and the participants involved.

2.1 *Materials Tested*

The 2012 NCT was a fully-functioning Web survey. The screen shots of the survey are attached in Appendix A2. The mailing material with the Access Code that participants used to log onto the survey can be found in Appendix A1. The Access Code on each card indicated which version of the coverage path and new Race/Origin question the participant would receive while completing the survey, as well as whether they would see a POPCOUNT (Figure 1) screen or would go straight to the PEOPLE screen to start listing residents (Figure 2).

We gave the participants the Access Codes in order, starting over after each eighth person, to ensure an even counterbalance of conditions. The assignment worked out such that there were twenty participants, and ten participants saw each version of each manipulation. The reference date for each participant was June 14, 2012. Some participants completed the NCT before June 14, two completed it on June 14, and the rest completed it after June 14.

2.2 *General Protocol*

The test administrator read the background material to the participant and explained several key points about testing at the beginning of each usability study session. The purpose of the general introduction of the NCT testing was to ensure that participants understood that they were contributing to the development of the NCT online instrument, and that they were not being personally evaluated. This also allowed the participants the opportunity to understand the purpose of the usability study and the value of their feedback (see Appendix B1).

2.2.1 Procedure

Each usability session was conducted in the usability lab and lasted about 60 minutes. Upon arriving, each participant was seated in the testing room. The test administrator greeted the participant and read the general introduction (see Appendix B1), which explained the purpose of the session, the testing procedure, and the importance of participant contribution. Before beginning the usability study, the participant read and signed the consent form (see Appendix B2), which explained that all information gathered during the study was confidential and that the session would be videotaped and used solely for research purposes. In addition, participants were informed that we would be using eye-tracking to see how they interacted with the survey (see Appendix B1). After receiving the participants' consent, video and audio recording began.

Next, the test administrator asked the participant to do a practice task using a familiar site (e.g., www.wtop.com) to practice thinking aloud. They were asked to find an interesting article from the www.wtop.com website. During testing, the think-aloud technique was used to understand the participant's cognitive processes as he/she interacted with the interface. Think-aloud is modeled on Ericsson and Simon's (1996) approach to collecting verbal protocols, which was used to maintain a running verbal commentary of the participants' expectations and reasoning. A participant engaging in think-aloud verbalizes his or her available, conscious thoughts and decisions while completing the tasks. If at any time a participant became quiet for more than 10 to 15 seconds, the test administrator encouraged the participant to continue to think-aloud, using prompts such as, "What are you thinking?", "Can you tell me your thoughts?" and "Keep talking."

After the practice think aloud task, the test administrator calibrated the participant's eyes for eye-tracking analysis. Eye-tracking analysis demonstrates where participants are looking on the screens, and where they look the most. It also captures mouse click locations and timestamps of the participants' interaction with the screens.

The test administrator proceeded to the control room and did a sound check while the participant completed the Questionnaire on Statistical Background, Computer Use and Internet Experience (Appendix C1).

The participant sat in a room, facing one-way glass and a wall camera, in front of an LCD monitor that was on a table at standard desktop height. During the usability test, the test administrator sat in the control room on the other side of the one-way glass. The test administrator and the participant communicated through microphones and speakers. While sitting in front of the LCD monitor, the participants completed the NCT survey.

Eye-tracking equipment was used during the portion of testing where the participants completed the survey for their own households. The participant sat in front of a Tobii (X120 or T120) equipped with cameras for eye tracking. The Tobii eye-tracking device and the Tobii Studio software program monitored the participants' eye movements and recorded eye gaze data.

After completing the survey, the participant filled out a Satisfaction Questionnaire (Appendix C2) based on the Questionnaire for User Interface Satisfaction (QUIS) (Chin, Diehl, & Norman, 1988) and the test administrator asked the participant debriefing questions (Appendix B1, page B3) allowing for a conversational exchange about the NCT Survey instrument.

2.2.2 Scenarios Tested

After completing the NCT survey for their own real-life household, participants were asked to answer questions for seven basic coverage vignettes. The vignettes were written

to represent complex coverage issues that do occur in real life but are very specific and are therefore difficult to capture through participant recruiting.

2.2.3 Participants

The usability team recruited 20 participants (some internal Census Bureau employees, but primarily external participants from the Human Factors and Usability Research Group participant database) to participate in the usability study of the NCT testing. Table 2 shows the demographic information on the participants, including their age, gender, and education level. There were 13 female and 7 male participants with an average age of 41 years and varying education levels. There were 7 participants with a postgraduate degree, 6 participants with a 4-year college degree, and 6 participants with high school and/or 2 years or some college degree. The table also shows the participants' computer and Internet experience. The average computer experience on a scale of 1 (No experience) to 5 (Very experienced) was 4.3. The average Internet experience on a scale of 1 (No experience) to 5 (Very experienced), was 4.5.

Table 2: Age Gender, Education, Internet Usage, Internet and Computer Experience

PP#	Age	Gender	Education	Internet use per day	Computer Experience (1 No exp < 5 Very exp)	Internet Experience (1 No exp < 5 Very exp)
1	56	F	post grad	1-3 hours	5	5
2	61	F	post grad	1-3 hours	2	2
3	21	F	4-year college degree	1-3 hours	4	5
4	47	M	4-year college degree	4-6 hours	5	5
5	20	M	some college	7 + hours	4	4
6	23	F	post grad	4-6 hours	5	5
7	36	M	NA	1-3 hours	5	5
8	63	M	some college	4-6 hours	3	4
9	59	F	high school degree	1-3 hours	4	3
10	49	F	4-year college degree	7 + hours	5	5
11	29	F	post grad	4-6 hours	5	5
12	21	F	some college	1-3 hours	5	5
13	21	F	2-year college degree	4-6 hours	5	5
14	47	F	post grad	4-6 hours	5	5
15	39	F	4-year college degree	4-6 hours	5	5
16	62	M	high school degree	1-3 hours	3	3
17	69	M	4-year college degree	4-6 hours	4	4
18	31	F	post grad	1-3 hours	4	5
19	26	M	post grad	1-3 hours	4	4
20	46	F	4-year college degree	7 + hours	4	5

After completing the NCT survey, the participants were asked to complete the questionnaire for the user interaction satisfaction (QUIS). Table 3 below shows their satisfaction with different facets of the survey interface. The scale was 1 (not satisfied) to 10 (very satisfied). Usually, the goal in usability testing is to attain a score higher than the median of the scale. Participants, on average, gave scores higher than 5 on each aspect of their interaction with the interface. For example, overall reaction to the survey and the overall appearance both have an average score of 8.35. This indicates that participants were satisfied or more than satisfied with the NCT survey.

Table 3: Questionnaire for User Interaction Satisfaction (QUIS)

PP No.	Overall reaction to survey	Overall Appearance	Use of terminology	Instructions displayed	Ease with which you could move	Knowing where you were on survey	Organization of questions, responses, categories	Forward Navigation	Overall experience of completing the survey
1	8	8	10	8	9	10	10	10	10
2	9	7	7	8	7	7	7	8	9
3	7	9	8	8	9	0	7	9	8
4	10	10	10	10	10	10	10	10	10
5	8	8	7	7	7	8	7	8	8
6	10	10	10	10	10	9	10	10	10
7	6	6	4	4	5	7	5	10	5
8	8	7	9	5	7	7	7	7	7
9	9	9	8	9	9	9	9	10	10
10	9	10	8	7	10	6	9	10	10
11	9	8	7	10	10	0	10	10	8
12	9	9	9	10	10	10	7	10	8
13	8	7	3	4	9	5	3	10	6
14	8	8	8	7	8	9	9	8	8
15	9	9	9	8	10	9	9	10	9
16	8	8	10	10	10	10	10	10	10
17	9	10	9	9	10	10	10	10	10
18	8	9	9	8	10	2	7	9	7
19	8	8	10	10	10	8	10	10	10
20	7	7	6	9	9	9	6	9	8
Average	8.35	8.35	8.05	8.05	8.95	7.25	8.10	9.40	8.55

3. Accessibility Testing Method

The accessibility evaluation was conducted using the Job Access with Speech (JAWS) 13 screen-reader. JAWS 13 reads the contents (both visible and invisible, such as tags in the HTML code for pictures, headers, or other content) aloud and our staff checks for any abnormalities that could cause problems for respondents with low or impaired vision that would be using such a screen reader.

All of the screens for all four paths of the NCT instrument were tested. For the accessibility testing the updated version of this instrument was used¹, so few defects were detected.

4. Experimental Manipulation Results

Since accuracy was not a feasible measure for this test of coverage and the combined Race/Origin question, we focused on efficiency as a measure of how easily the participants could answer the questions and move through the survey. This usability test was not able to answer questions about whether the long or short coverage approach was able to identify a more accurate roster; each participant only completed one version of roster path and our sample size was too small to draw conclusions.

Table 4 shows the time analysis results of the experimental manipulations. There were 10 participants each in each version of the experimental manipulations of the Roster, Undercount, Race/Origin, and Overcount questions. There were 5 participants who received V1 (POPCOUNT+PEOPLE) of the Roster and V1 (MISS & STAY) of the Undercount questions, and V1 (ELSEWHERE) of Overcount questions. There were 5 participants who received V1 (POPCOUNT+PEOPLE) of the Roster and V2 (ADD1-ADD4) of the Undercount and V2 (DELETE 1-DELETE 7) of the Overcount questions. Similarly, 5 participants received V2 (PEOPLE only) of the Roster and V1 (MISS & STAY) of the Undercount and V1 (ELSEWHERE) of the Overcount questions. There were 5 participants who received V2 (PEOPLE) of Roster, V2 (ADD1-ADD4) of Undercount and V2 (DELETE1-DELETE7) of the Overcount questions.

¹ The developers continued to update the code after the version used for usability testing was delivered to CSM for testing before the June 7, 2012 start date for usability testing.

Table 4: Coverage Question Time Analysis²

Path#	PP#	Roster	Undercount		Overcount		HH Size	Remarks
			MISS & STAY	ADD1-ADD4	ELSEWHERE	DELETE1-DELETE7		
			Time taken (s)	Time taken (s)	Time taken (s)	Time taken (s)		
1	1	POPCOUNT+PEOPLE	1:52		0:14		2	
	5	POPCOUNT+PEOPLE	3:08		3:26		5	College address was provided
	9	POPCOUNT+PEOPLE	3:24		0:52		6	
	13	POPCOUNT+PEOPLE	2:18		0:12		1	
	17	POPCOUNT+PEOPLE	2:13		1:01		2	
Average			2:35		1:09		3.2	
2	4	POPCOUNT+PEOPLE		1:28		0:44	3	
	8	POPCOUNT+PEOPLE		4:39		6:35	6	Second residence address was provided
	12	POPCOUNT+PEOPLE		1:59		0:56	1	
	16	POPCOUNT+PEOPLE		10:44		1:10	5	
	20	POPCOUNT+PEOPLE		4:27		6:40	2	Second residence address was provided
Average				4:39		3:13	3.4	
3	3	PEOPLE	2:24		0:48		4	
	7	PEOPLE	1:01		1:00		1	
	11	PEOPLE	1:09		0:17		2	
	15	PEOPLE	1:19		0:10		2	
	19	PEOPLE	2:03		0:25		3	
Average			1:35		0:32		2.4	
4	2	PEOPLE		2:16		2:58	2	College address provided
	6	PEOPLE		1:45		3:39	3	Second residence address was provided
	10	PEOPLE		2:20		0:57	2	
	14	PEOPLE		2:50		0:42	5	
	18	PEOPLE		1:59		5:19	1	Second residence address was provided
Average				2:14		2:43	2.6	

² **For Undercount section:** The time starts at “Were you living or staying at 57032 NORGOR RD on June 14, 2012?” (ADDRESS screen). The time ends just before they reach at “One June 14, 2012, was this house, apartment, or mobile home” (HOME screen).

For Overcount section: The time starts at “Some people live or stay in more than one place and we would like to make sure everyone is only counted once.” (DELETE screen). The stop time ends just before (EMAIL screen).

4.1 *Presence or absence of a POPCOUNT screen*

The presence of a POPCOUNT screen seemed to be associated with longer completion times for both versions up to the Undercount and Overcount section of the survey. In the case of the Undercount section, the POPCOUNT+PEOPLE+MISS&STAY (Path# 1) condition took an average of 2 minutes 35 seconds to complete whereas PEOPLE+MISS&STAY (Path# 3) took 1 minute 35 seconds to complete on average (with an average of 3.2 VS 2.4 people per household). POPCOUNT+PEOPLE+ADD1-ADD4 (Path# 2) took an average of 4 minutes 39 seconds to complete whereas PEOPLE+ADD1-ADD4 (Path # 4) took 2 minutes 14 seconds on average to complete (with an average 3.4 VS 2.6 people per household).

In the case of the Overcount section, the participants who got the POPCOUNT+PEOPLE+ELSEWHERE path, (Path #1), took an average of 1 minute 9 seconds to complete Version 1 of the Overcount questions of the survey. The participants who received the PEOPLE+ELSEWHERE path, (Path# 3), took 32 seconds on average to complete the Version 1 of the Overcount questions. The participants who had POPCOUNT+PEOPLE+DELETE1-DELETE7 path, (Path #2), took 3 minutes 13 seconds on average to complete the Version 2 of the Overcount section whereas the participant who were on the PEOPLE+DELETE1-DELETE7 path, (Path #4) took 2 minutes 43 seconds to complete Version 2 of the Overcount section on average.

4.2 *Two versions of Undercount Questions*

In the case of the Undercount questions in both versions of the Roster conditions (with or without the POPCOUNT screen), V1 of the Undercount questions (with MISS&STAY) took less time for participants to complete. With the POPCOUNT screen, participants took an average of 2 minutes and 35 seconds to complete the POPCOUNT+PEOPLE+MISS&STAY (Path #1) versus it took an average of 4 minutes 39 seconds to complete POPCOUNT+PEOPLE+ADD1-ADD4 (Path #2) of the Undercount questions (with an average 3.2 people per household VS 3.4 people per household).

Participants who had V2 of the Roster completed (on average) up to the PEOPLE+MISS&STAY (Path #3) in 1 minute and 35 seconds whereas participants took 2 minutes 14 seconds on average to complete up to the PEOPLE+ADD1-ADD4 (Path #4) of the Undercount questions (with an average 2.4 people per household VS 2.6 people per household).

4.3 *Two versions of the Race/Origin question*

While reviewing tapes for timing data for Table 5, we noticed that it took some time for participants to figure out the error messages associated with the Race/Origin question. After that, participants were quick to answer the Race/Origin question for the remaining

household members. On average, participants completed version 1 slightly more quickly than version 2. It took on average 49 seconds to answer V1 of the Race/Origin questions for the first person of the household. It took on average 55 seconds to answer V2 of the Race/Origin question for the first person of the household. In both versions of the Race/Origin questions, six out of 10 participants received the error message, as they did not enter the specific Race/Origin in the text box.

Table 5: Race/Origin Question Time Analysis (For first person only)

PP#	Race/Origin Question Version	Time Taken (min:sec)	# of Errors	Race
1	V1	0:41	1	White, Irish
3	V1	0:59	0	White, German, Dutch, English, Swedish
5	V1	0:13	0	Asian, Korean
7	V1	1:26	1	Black, African American
9	V1	1:02	1	English, Irish, Swiss
11	V1	0:28	0	Black, African American
13	V1	1:02	1	Black, African American
15	V1	0:55	0	White, Polish, German, Welsh
17	V1	1:05	1	Asian, Chinese, Japanese
19	V1	0:17	1	Asian, Indian
Average V1		0:49		
2	V2	1:04	1	White, Asian, Chinese
4	V2	0:47	0	Black, African American
6	V2	0:25	0	White, Hispanic, Latino or Spanish, Cuban
8	V2	1:00	1	Black, African American
10	V2	0:55	1	White, Norwegian, German
12	V2	0:40	1	White, White
14*	V2	5:32	1	Black, African American, Jamaican, Montserrat, Native American
16	V2	1:07	0	Black, African American
18	V2	1:23	1	White, German, English, French, Irish, Scottish
20	V2	0:57	0	White, European Descent
Average V2		0:55		

Note: V1 – Write in boxes after each row

V2 – Write in boxes after all the Race/Origin categories

*PP# 14 is excluded from the analysis for being an outlier

4.4 Two versions of the Overcount questions

In the case of the Overcount questions in both versions of the Roster conditions (with or without a POPCOUNT screen) V1 (ELSEWHERE) took less time for participants to complete. With a POPCOUNT screen, participants took an average of 1 minute and 9 seconds to complete (ELSEWHERE) versus 3 minutes 13 seconds to complete the

DELETE1-DELETE7 screens of the Overcount questions (with an average 3.2 people per household VS 3.4 people per household).

The participants who had V2 of the Roster completed the ELSEWHERE screens in an average 32 seconds whereas participants took 2 minutes 43 seconds on average to complete the DELETE1-DELETE7 (Version 2) of the Overcount questions (with an average number of 2.4 people per household versus 2.6 people per household).

5. Usability Findings

5.1 Successes

- *Survey Aesthetics*

The general feedback about the aesthetics of the 2012 NCT survey was positive. Participants liked the blue color and the background image in the banner. No complaints were noted on preliminary observation. In a previous Census-related survey, the Census Quality Survey (CQS), participants in usability testing and respondents in the field had a negative reaction to the yellow background color (Ashenfelter, Holland, Quach, & Nichols, 2011). This is consistent with previous literature that shows blue as the most popular color overall and a similar shade of yellow to the CQS background is one of the least popular colors (Palmer & Schloss, 2010; Schloss & Palmer, 2009). A screen shot of the draft Login screen from the CQS can be seen in Figure 12.

2010 Census Quality Survey
USCENSUSBUREAU
Helping You Make Informed Decisions

Media: Welcome Found
Time: 00:00:00.000 - 00:04:05.740
Participant filter: All

Brother or sister
Father or mother
Grandchild
Husband or wife
Biological son or daughter
Adopted son or daughter
Stepson or stepdaughter
What is this person's sex?
Male Female

How is this person related to you?
Husband or wife
Biological son or daughter
Adopted son or daughter
Stepson or stepdaughter

Welcome to the 2010 Census Quality Survey. You will need the survey invitation we mailed to you in order to start the survey. All the information that you provide will remain completely confidential.

Please Log In

Please enter the 10-digit access code from your address label to begin the survey.

Access Code: -

Login

Example Access Code: ##### - #####

*****AUTO*5-DIGIT 64011
TO RESIDENT AT
123 ANY STREET
ANY TOWN US 00123-9999

The U. S. Census Bureau estimates that, for the average household, this survey will take about 10 minutes to complete, including the time for reviewing the instructions and answers. Send comments regarding this burden estimate or any other aspect of this burden to: Paperwork Reduction Project (0607-0960)-C, U. S. Census Bureau, AM 3D-2K122, 4600 Silver Hill Road, Washington, DC 20225. You may e-mail comments to: use@paperworkproject.gov. Respondents are not required to respond to any information collection unless it displays a valid approval number from the Office of Management and Budget.

WARNING
You have accessed a UNITED STATES GOVERNMENT computer. Use of this computer without authorization or for purposes for which authorization has not been extended is a violation of Federal law and can be punished with fines or imprisonment (PUBLIC LAW 99-474). System usage may be monitored, recorded, and subject to audit. Use of this system indicates consent to monitoring and recording.

Form Number: D-1 R1 OMB No.: 0607-0960 Approval Expires: 05/30/2011 Accessibility Privacy

Figure 12: Draft Login Screen for the 2010 Census Quality Survey (CQS) as tested in 2010.

The layout, background, color, and fonts of the NCT made the survey visually appealing. The Login screen from the NCT can be seen in Figure 13.

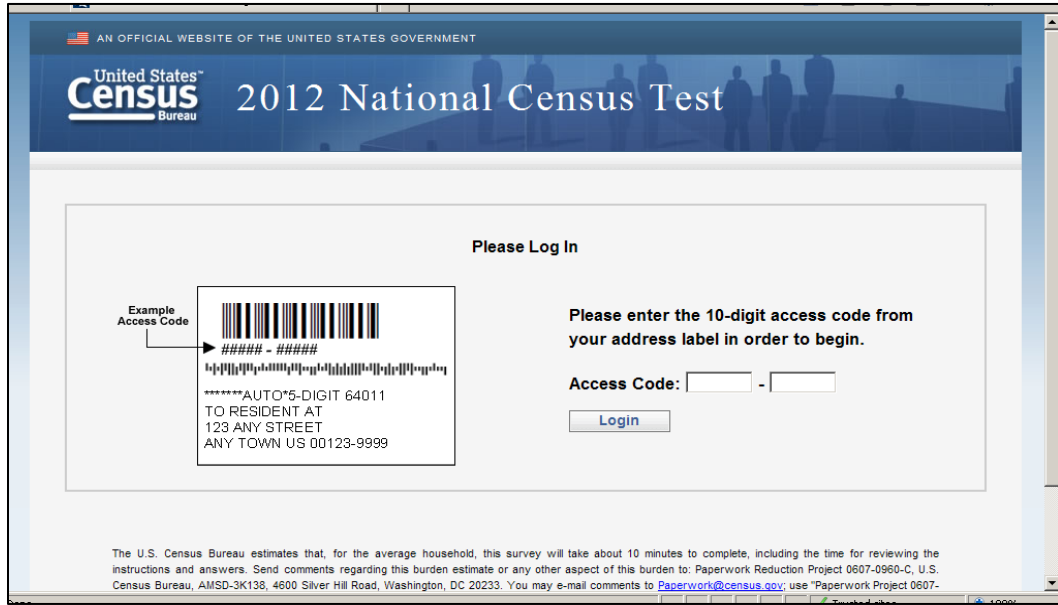


Figure 13: The Login Screen for the 2012 NCT Survey

Participants overall were able to log in without incident. One participant said, “It was good to have the visual, it worked.” Another participant said, “The label access code—it’s helpful.”

- *Assisted Living/Prison*

Two participants were in the situation where an elderly relative who used to live with them had moved into an assisted living situation within the past 6 months and both correctly left them off their roster. One participant, on Path 3 (see Table 1) gave insight into what she thought when working on the roster-building task,

“I thought for a second, oh my dad. He’s been in an elder home since January. So, that’s where he lives and sleeps. I was taking it literally—if he was living or sleeping somewhere else—the way it was so specific to the phrase ‘living and sleeping,’ [so I didn’t include him].”

One participant, in Path 4 (see Table 1), who has a son in prison said he did not consider adding him to the roster because, “He’s incarcerated for a longer period of time.” For these instances, for Paths 3 and 4 (see Table 1), the question(s) worked as intended.³

³ Based on the data we have collected during this usability study it is not possible to say whether or not one condition over the other collects the data more accurately than the other.

- *Forgotten Baby*

One participant in Path 3 (see Table 1) did not include his one-year-old daughter to the roster, but when he read the screen, “We do not want to miss any people who might have lived or stayed...” he added her. During debriefing he said once he read the baby as an example, he realized he was supposed to add her too. He mentioned that at first he thought it was only for those listed on the lease, so that was why he did not include her initially.

So Path 3 screens (see Table 1) worked as intended in this instance of adding in a forgotten baby.

5.2 *Usability Observations*

- *Review Screen*

In general, most participants did not choose to review their information, but rather simply hit the submit button. One participant recommended that the instrument force people to review their answers. She said it would be good because it would make her verify the answers. She gave the example of when she was filling out the forms for financial aid for college she was forced to verify her answers and said she thinks that is a good model.

- **Recommendation:** We do not recommend the participant’s suggested path, but include it as an example of user feedback. Most participants reported that they would not review their answers at home. We do not recommend making changes to the review process.

5.3 *Usability Issues*

Test findings are classified as being of high-, medium-, or low-priority. High-priority issues are serious problems that are likely to bring the respondent to a standstill where they cannot continue with the survey or complete the task at hand. Medium-priority findings are those that could potentially make a task difficult, but not impossible, such as viewing text that has low contrast with its background. Low- priority findings mean the user can complete the task, but improvements could be made to the design.

5.3.1 **High-Priority Issues**

- *Race/Origin*

Participants selecting “White” were not used to having to specify an origin and ended up getting an error message, which then prompted them to enter an origin (both versions of the screen). One participant said it was, “A lot to see at once. We’ve lived here [in U.S.] a long time; I’m not sure if it [the question] is for people who have come more recently to the U.S. It’s [the question] not very relevant to my family.”

The issue was not so much with the layout as with the question of whether she should report her ethnic origin since she didn’t feel connected to any specific origin. Another

participant made a similar comment that specifying ancestry seemed like it was more for people who had not been in the U.S. that long.

In general, most of the White participants who said they had no real connection to their origin and received the error message were able to go in and add in some ethnicity, such as of “European descent.” One participant had seen German and commented that she didn’t normally see that specificity in this type of a question so, she said, it did help to imply that she needed to put in an ethnicity (though she said this after receiving the error message, shown in Figure 14). However, there was one White person who, upon receiving the error message, ended up adding Chinese because she said there was an Asian woman who was a caretaker whom she was close to when she was younger.

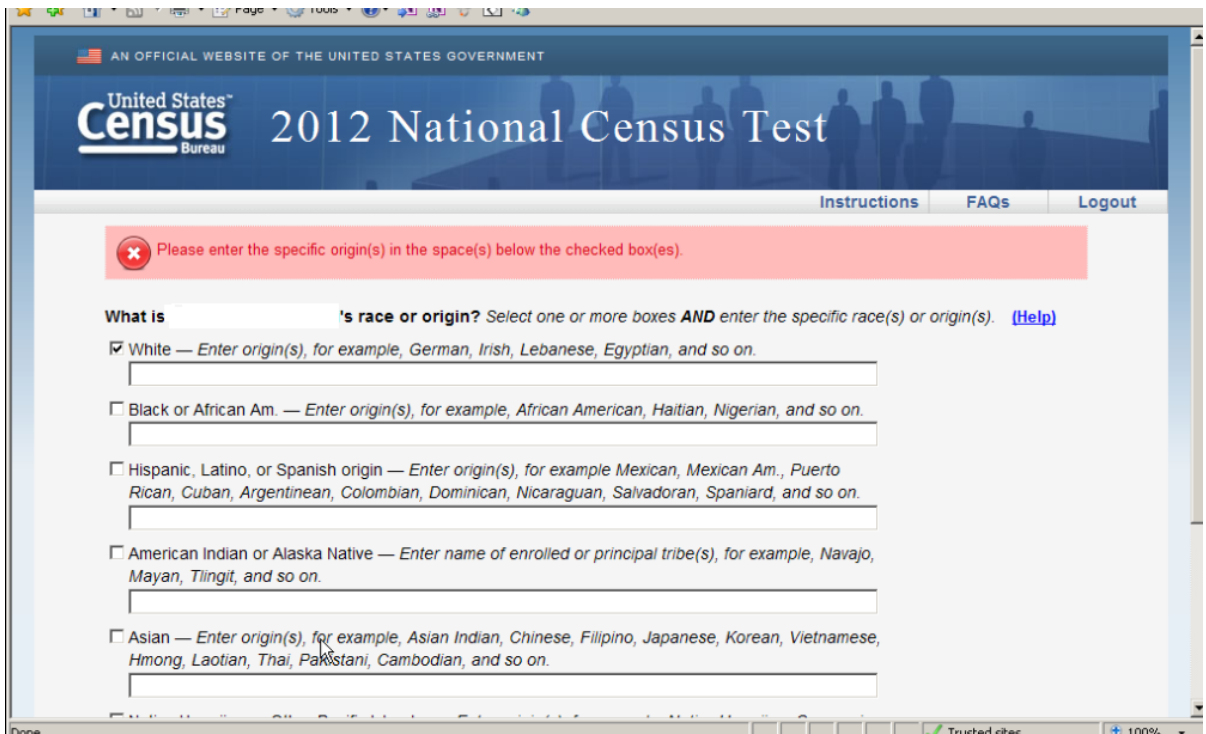


Figure 14: Original Race/Origin Error Message

Some participants who selected “Black/African American” on both versions of the Race/Origin question thought aloud that they had to answer the same question twice – they would check the “Black or African Am” response option and then type in African American for the write-in section on both versions of the screen.

We did have a participant, though, who checked “Black/African American” and tried to move forward without entering her ethnicity. At the error message screen, she decided to add in her Caribbean (Montserrat) ethnicity. She also, at this point, said she had Native

American ethnicity on her mother's side. She typed that in but then, after reading the help text, decided that she would remove it because, while she knew she had Native American in her ancestry, she said she was not affiliated with any specific tribe. During the debriefing, the participant explained, "I took off Native American because I don't think it qualifies, [but] that almost seems wrong 'cause it is in my history."

So for this participant, the error message worked as intended in that it encouraged the participant to be more specific about her ethnic origin. The help text also worked, as it explained instances when a participant should enter Native American as an ethnicity.

Another person said he just had to enter African American again. However, this did not stop him from progressing, after the first error message, he did type in "African American" and then was able to go forward.

- **Recommendation:** We recommend investigating other options to inform respondents that further specification of origin is needed for the Race/Origin question. For example, test alternate versions of this question that explain briefly why typing in ethnicity after putting a check next to their Race/Origin makes sense (e.g., one could be Black and of Kenyan descent).
 - **Sponsor Response:** The sponsor decided to modify the error message to a green informational message as "If you would like to provide more detail, please enter the specific origin(s) in the space(s) below the checked box(es). If not, use the "Next" button to continue". This will likely help in the instances where those who do not feel a strong affinity for an ethnicity understand that they are able to move forward without entering one (Figure 15). We recommend a few additional usability tests with this new screen.

Figure 15: Revised Error Message for the Race/Origin Screen

A participant who selected Asian and specified “Chinese/Japanese” noticed that the “Chinese” prefill went away after he entered the slash. He wondered what the correct way to indicate more than one origin would be if what he did was “wrong.”

This was the version of the screen with the text entry box under each check box (not split screen). Some participants who selected “White” also entered more than one origin and the prefills went away after they started entering the second origin as well.

- **Recommendation:** We recommend testing versions of the question that instruct respondents to use a comma or space for multiple origins and then having the prefills work accordingly. Alternatively, common combinations such as “Chinese/Japanese” based on the responses that are given for the NCT write-ins could be programmed for the next survey.
- **Recommendation:** We also recommend testing a version of the question that remembers the origin information for Person 1 and offers that write-in for the other members of the household if the same character string starts to be entered again. For instance, if someone selects “White” and then enters “Hungarian Polish German,” the next person might be their biological son or daughter and so the same origins might be entered. Once “Hungarian P” is typed, “Hungarian Polish German” should be in the list of response options for Person 2.

- *Second Residence/For Another Reason- Long Coverage Path*

The following problems only occurred for participants who had the longer coverage path with separate, specific questions about their living situations. The screen shots of these questions can be found in Appendix A2.

Four participants who had the situation where they sometimes live or stay somewhere else (like a second or seasonal home) experienced some confusion with the screens. Two different participants who clicked “Yes” to the question “Does anyone sometimes live or stay at another home, like a seasonal or second residence?”(Figure A35) went through the choices presented and answered “No” for the reason of parent, grandparent, or other person (Figure A38), “No” for the reason of college housing (Figure A40), “No” for the reason of a job (Commuter- Figure A42), “No” for the reason of a nursing home (Figure A44), “No” for the reason of jail (Figure A46), but “Yes” for another reason (Figure A48). The following screen then said, “Please provide the full address of the seasonal or second residence where xxxxx sometimes lived or stayed around June 14, 2012.” This was confusing since the first question that got the participant started down this path only asked if they sometimes live or stay elsewhere. It did not give a date. Then, when the participant was forced to enter the other address, it gave an exact date (June 14, 2012) that did not actually apply to their situation. One participant did not happen to be at the other residence at that time, and another participant had not yet traveled to her seasonal home but was going to travel there in August.

One participant then clicked the back arrow to re-read the initial question and said “I am now confused, do I enter the information or not because it wasn’t for June 14.” She then tried to pass the screen by clicking next without filling in the address, since she was not there around June 14. This triggered the error message, “Please provide an answer to the question.” The participant then entered the other address. She had to enter the same other address again for her daughter.

Another participant who had a second or seasonal home had fewer follow-up questions but was asked to enter the other address twice. This participant initially answered “Yes” to the question, “Does anyone sometimes live or stay at another home, like a seasonal or second residence?” She then proceeded to answer “No” for the reasons of a job, nursing home, or jail. Then she was asked, “Does anyone sometimes live away from xxxx for any reason other than those just mentioned?” The participant marked “Yes” and was prompted to type in the other reason. She typed, “Stay at residence other than my home for personal/family reasons.” She told the test administrator that it was her boyfriend's house [in another state] where she sometimes stayed. On the next screen, the participant was prompted for the full address of the seasonal or second residence where xxx sometimes lived or stayed around June 14, 2012.

This participant had a similar reaction as the previous participant, because she had not been at the other address on June 14. She nevertheless entered the address, and then the very next screen said, “Please provide the full address where xxxx sometimes lived or stayed around June 14, 2012 for another reason.” The participant noted that it was asking the same thing twice. She was confused and clicked the previous button to see the last question that she had just answered, clicked next and then again clicked previous for a second time as she tried to compare how the two questions were different before finally clicking next and then entering the same address that she had just entered. This participant then said, “It would be good to have the address come up again so I didn’t have to re-type it.” She went on to say her situation was “like a seasonal home but not for any of the given reasons. So for personal reasons.” When prompted to re-type the address, she wondered, “Didn’t I just do that... it didn’t skip ahead?” When asked about it during debriefing she said, “It was confusing.”

- **Recommendation:** Rather than asking for the seasonal or second residence, and then following up with the assumption of the date, it may make more sense to ask the questions in the following way:

- A. Do you have a seasonal home or other residence?
- B. (If Yes) What is the residence (get address capture here)
- C. Then ask: Were you at your seasonal residence on June 14?

For the instances where the household members are all related, consider adding the already-reported other address and asking the participant to check a box if it was this address.

- **Recommendation:** For the second set of screens, it does not make sense to ask for the address to be entered twice. (Once because the participant answered yes to the initial question and then again because the participant had another reason besides the three listed (e.g., job, nursing home, jail). Only ask the participant to enter the other address once.
- **Recommendation:** Asking initially *if* a participant has a second or seasonal home and then following up with a request for the address of the second or seasonal home where the participant *was* on or around June 14 are not the same thing. The participant struggles to answer the second question if he/she was not at the residence on the date mentioned. See recommendation in bullet point above for an alternative way to ask the question.
 - **Sponsor Response:** The date was removed from the follow-up question based on this recommendation.

5.3.2 Medium-Priority Issues

- *Age/Date of Birth Question*

One participant who lived in a house with a number of unrelated individuals had difficulties when trying to go to the next screen because he did not know the other household members' date of birth (DOB).

When he initially arrived at the screen asking for the unrelated individuals' DOB (Figure A33) he clicked immediately into the help and read over that screen. He read the part of the help that told him to enter as much as he could and then go on. So, because he could not put in the DOB he only entered his housemates' ages. At this point, the participant tried to go forward onto the next page, with the ages entered and the DOB left blank.

Instead, the instrument returned the red error message. It was not clear to the participant that he needed simply to click next again and he would be able to progress past the error page. Hence, the error message was confusing, particularly since the participant had already read the help and had actually answered the question as correctly as he could.

- **Recommendation:** Consider implementing softer green message (similar to the modification to the Race/Origin edit) when someone enters an age and not a date of birth.
 - **Sponsor Response:** The green message was implemented as recommended.

- *“Other Than” Screen*

A few participants had an issue with the question “Did xxx sometimes live or stay at an address other than 57032 Noragar Rd around June 14, 2012.” One participant rephrased the question while thinking aloud by saying “Did I live, sometimes live or stay at the address...” He appeared to miss the words “other than.” He said, “This is kind of ahh confusing...” Then he re-read the question and said “No.” He explained, “I had to slow down and read it again. I was thinking it was asking me, did I stay at that address but it was asking if I stayed at an address other than.... So I had to read it through again to understand, so the answer is no.” The first time he read the question he missed the wording “*other than*” but the response options did not make sense so after reading over the options he was prompted to re-read the question.

- **Recommendation:** We recommend testing alternative methods for making the “Other than” phrase stand out in this question.

5.3.3 Low-Priority Issues

- *Reference Dates for Household Roster*

At least two participants commented that the question that asks whether someone lived “most of the time” at the address in some questions and more specifically whether they were living or sleeping there “on June 14, 2012” did not really make sense because the two reference periods were in logical contradiction. While the POPCOUNT and PEOPLE screens require the application of residence rules with respect to Census Day, June 14, 2012, the ADD and DELETE screens have a less precise reference period. While this is done to make the household roster more accurate for creating a Census count, the purpose is not transparent to respondents. The changing rigidity and clarity of the time frame of the questions in the survey can be very confusing to participants.

- **Recommendation:** We recommend testing future versions of a survey that use language that is more consistent or includes some help text that explains the different temporal reference frames.

- *Email Address Screen*

Every participant provided an email address as requested. Generally, they commented in debriefing that they thought it was “in case the Census Bureau has any questions” or “needs to follow up.” There did not seem to be any negative emotional reactions to the request for the email address. A few participants said they would like to have a reason for why the Census Bureau is requesting the email address. One participant said, “It did not explain why they needed the email address. I have multiple email addresses and I’m not sure which one [to use], what is the Census/government going to do with my address, now that they have it?” Another participant said, “I would like to see WHY they want the email.”

- **Recommendation:** Consider adding in an explanation similar to the reason given when we ask for the phone number (e.g., we may contact you if there is a question.)
 - **Sponsor Response:** The sponsors will be adding more explanation as to why the respondents’ email address is being requested to this screen before it goes into the field.

- *Relationship Question*

One participant who is living with her mother (and her mother owns the house) found the phrasing of the relationship question surprising. During debriefing, she asked, “Why didn’t it ask about my relationship to my mother? Since I was filling it out I expected it should ask about her relationship to me.” However, this participant was able to fill in the relationship question correctly.

This issue of confusion about relationship directionality as to who is related to whom has occurred in usability testing of other demographic surveys (Childs, 2008; Childs & Jurgenson, 2011; Childs, Norris, DeMaio, Fernandez, Clifton & Meyers, 2009; Nichols, Childs, & Rodriguez, 2008). Childs & Jurgenson (2011), referring to interviewer-administered Nonresponse Follow-Up (NRFU) forms, wrote, “Because direction is important, not reading the names can inadvertently cause respondents to report the opposite relationships” (pg. 24).

When the instrument is self-administered, the names are filled in the question, but careful reading of the question and the directionality of the relationship is up to the respondent.

- **Recommendation:** Test alternative versions of the question that draw more attention to the directionality of the relationship between household members.

- *PIN Screen*

One participant asked what the point was of the PIN, especially in the instance where the survey was finished and completed. She said, “Do I need to save it now the survey is done? Do I need to hang onto it? Now that the survey is done?”

Confusion about what to do with the PIN might cause some respondents to disregard it.

- **Recommendation:** It might be a good idea to give some context for when the PIN would be used. For example, if the PIN is only valid while answering the survey questions, and NOT for logging in after they had completed the survey, (e.g., if a respondent, after submitting, wanted to check on their answers). It might be good to have some context at the end of the survey, after submitting, on whether or not they needed to hold onto their PIN.

5.4 Debriefing Question Results

- *Preference on DOB screens*

During debriefing, the test administrator asked for the participants' preference on how the DOB screen worked: either by type-in or by dropdown entry. Out of 20 participants, 9 said they prefer the drop-down option to enter the date. One participant said she preferred to type in the field but said that could be harder for some other groups of people. Seven participants preferred type-in as it would be easier to type-in rather than select a day, a month, and a year from a long list of dropdown options. Three participants had no preference and they would be fine with either option. One participant said he preferred a pop-up calendar like a date picker calendar for the day and month field and a dropdown option for the year field (See Table 6).

- *Other debriefing results*

Table 6 shows that the most of the participants said it would be easy to remember the security questions, very easy to login into the survey, and very easy to indicate the date of birth.

Table 6: Responses from the NCT Debriefing Questions

PP No.	Remember answer to the security question (1 Very easy - 10 Very difficult)	Log into the survey (1 Very easy - 10 Very Difficult)	Indicate Date of Birth (1 Very easy - 10 Very Difficult)	Date of Birth field preference (DD-Dropdown TI-Type in, NP-No preference)
1	1	1	1	DD
2	1	2	1	DD
3	1	2	1	NP
4	1	1	1	DD
5	NA	NA	NA	Pop up calendar+DD
6	1	2	1	TI
7	1	3	1	DD
8	1	1	1	NP
9	1	1	1	TI
10	1	1	1	DD
11	1	1	2	TI
12	1	1	1	DD
13	1	1	1	DD
14	1	1	1	TI
15	1	1	1	DD
16	3	2	1	DD
17	1	2	1	TI
18	1	1	1	TI
19	1	1	1	TI
20	1	1	1	NP

6. Accessibility Findings

6.1 High-Priority Findings⁴

- *Lack of labeling*

Telephone number data are entered into three input fields (Figure 16). The labels are present (Area Code, Number) but are not associated with the data entry fields. This lack of labeling violates 1194.22 Section 508 paragraph N, which pertains to directions and cues for online forms.

- **Recommendation:** Associate “Area Code” with the leftmost field. “Number” should be associated with the second and third fields.

The screenshot shows a web browser window displaying a form titled "2012 National Census Test". The form asks for the respondent's name and telephone number. The name fields are filled with "Rodrigo", "Q", and "Borgia". The telephone number fields are filled with "202", "555", and "1212". A red box highlights the telephone number input fields. The form includes "Previous" and "Next" buttons.

Figure 16: Telephone number labels are not associated with the data entry fields.

⁴ All accessibility issues that violate a section of the Section 508 law are high-priority issues.

- *Date of Birth Screen*

The Day combo box does not behave the same way as the Month and Year combo boxes. When JAWS users press the arrow once on the Day combo box, the new value is not vocalized, and the focus moves to the Year combo box. The Month and Year combo boxes permit multiple key-presses of the arrow keys and the new values are spoken each time. Access to the Day combo box requires pressing ALT+down-arrow to select the day with arrow keys as shown below in Figure 17. See Figure 18 for the appearance of what the Day combo box looks like when it is open.

- **Recommendation:** Duplicate the code used for the Year or Month combo boxes and apply it to the Day combo box. All combo boxes should perform the same way, thus speeding data entry for persons who cannot use a mouse.

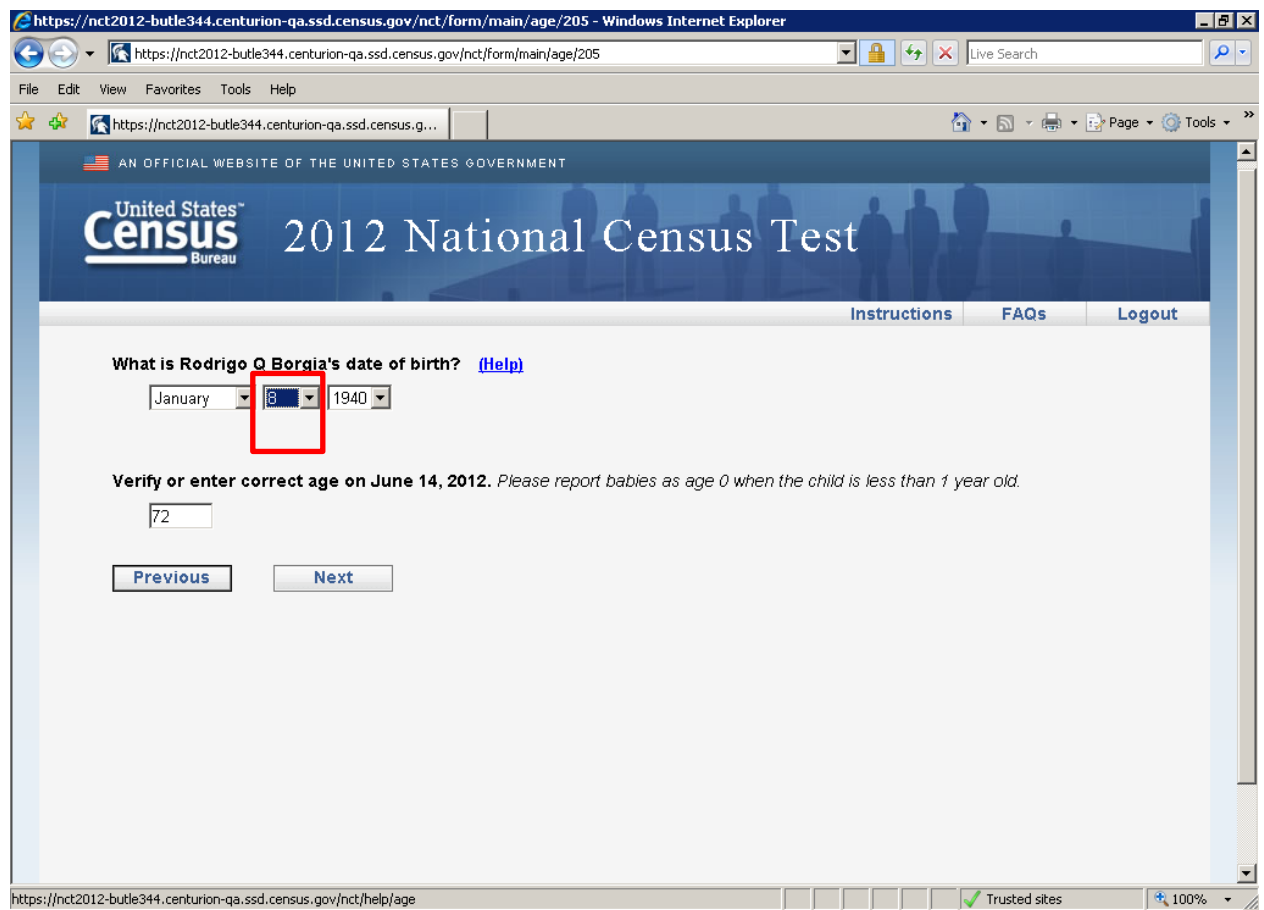


Figure 17: The Day combo box does not behave the same way as the Month and Year combo boxes.

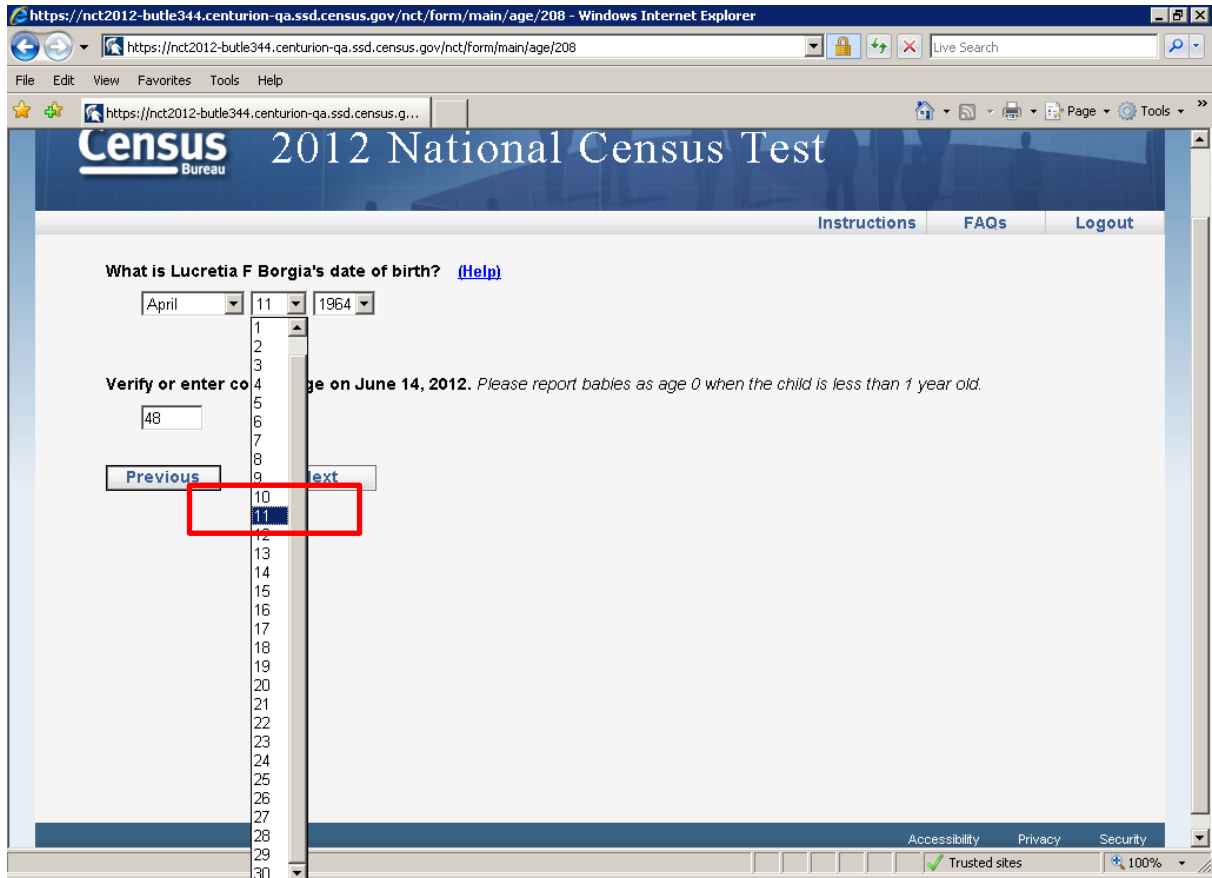


Figure 18: The Day combo box must be opened to access the correct day.

- *PIN Screen*

When a JAWS user tabs through this screen, the label for the PIN field is read aloud as “password” (Figure 19). The terminology should be the same throughout this instrument to avoid confusion and any impact on data quality.

- **Recommendation:** Ensure the label for the PIN field is vocalized as “PIN.”

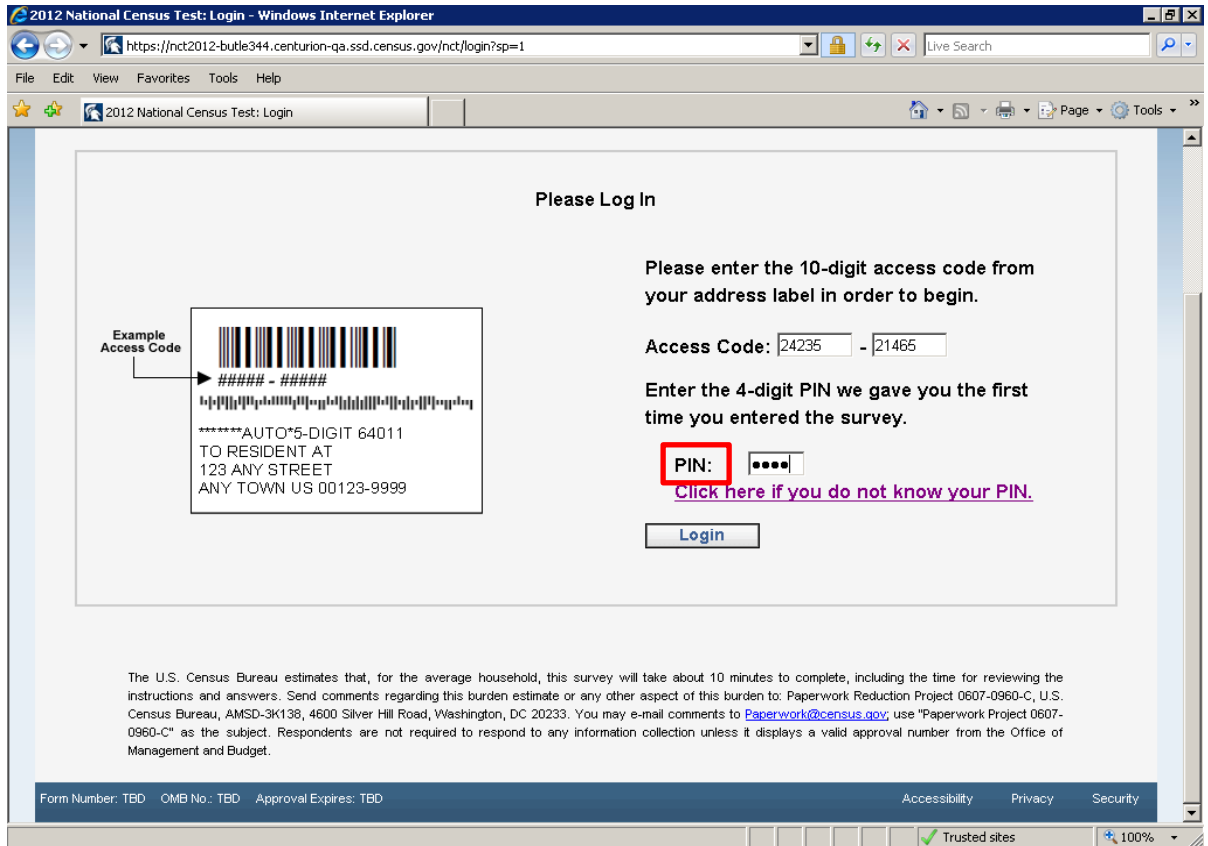


Figure 19: The label “PIN” is vocalized as “password.”

- *Race/Origin Screen (Split Screen Version)*

There was no vocalization of the potential (e.g., prefills, predictive text, etc.) responses below the data entry field as a JAWS user typed in a response (Figure 20). This implementation violates 1194.22 paragraphs L and N of the section 508 regulation, pertaining to interfaces and on-line forms, because JAWS users do not hear any messages about the presence of a list of terms or how to select a response.

- **Recommendation:** A solution might be to associate title text with the data-entry field stating "Key in the first three letters of your specific Race, origin, or tribe and press the down arrow until you hear your response, then press enter to select it." Adding title text can be detected by the screen-reader and will not change the appearance of the screen.

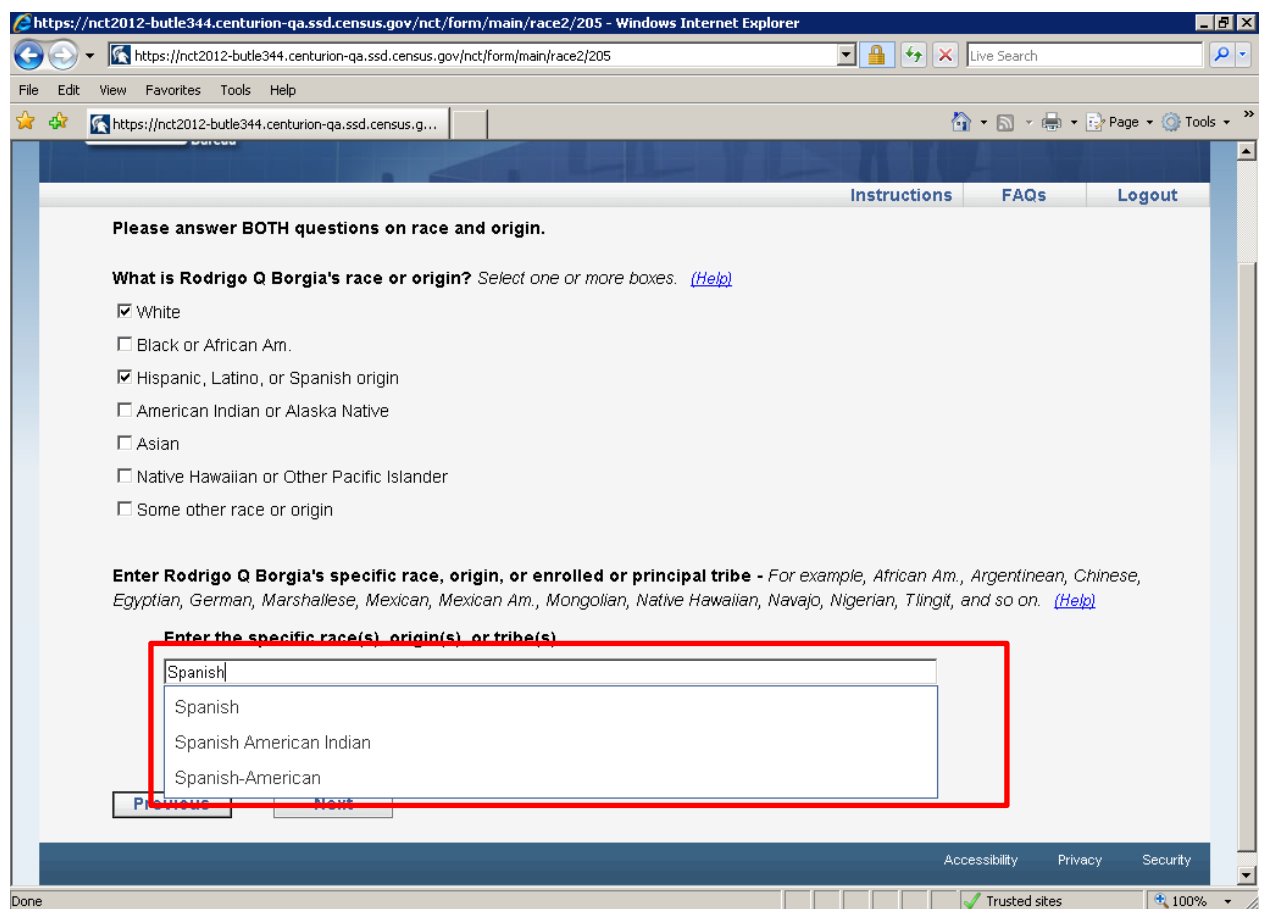


Figure 20: When a JAWS user enters their data, there is no vocalization of the predictive text below.

7. Eye-Tracking Data

The following section presents eye-tracking data using heatmaps. The heatmaps generated for this report demonstrate the number of fixations in an area of the screen on a given page. The colors on a heat map range in visual intensity as the number of fixations in an area of the screen increases. Green indicates a lower number of fixations in a given area, whereas red indicates a higher number of fixations in a given area. As the number of fixations increases, the color grows in intensity.

Some heatmaps with notable results are presented below. Refer to the Appendix D for the heatmaps of the major screens of the NCT survey. The number of participants used to generate the heatmap (n) varies on different screens. This is due mainly for two reasons:

1. Some participants eye-tracking data did not record sufficiently for analysis
2. Some participants did not get the screen.

7.1 Eye-tracking observations

- Figure 21 shows that the participants glanced through the Example Access Code. The participants quickly focused on entering their access code to start the survey.

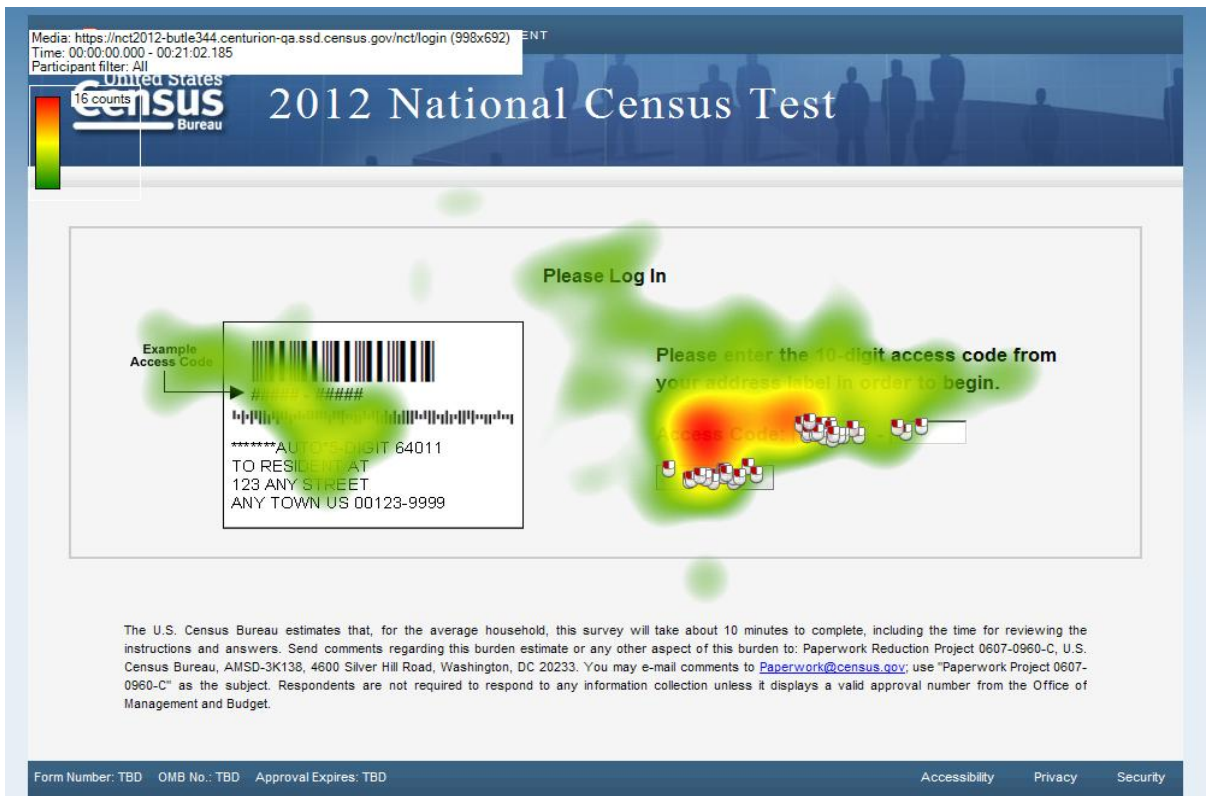


Figure 21: Login (n = 20)

- Figure 22 shows that the participants carefully read the question on the Address page “Were you living or staying at 57032 NORGAR RD on June 14, 2012?” The heatmap indicates that the participants read the words “living,” “staying” and “June 14”.

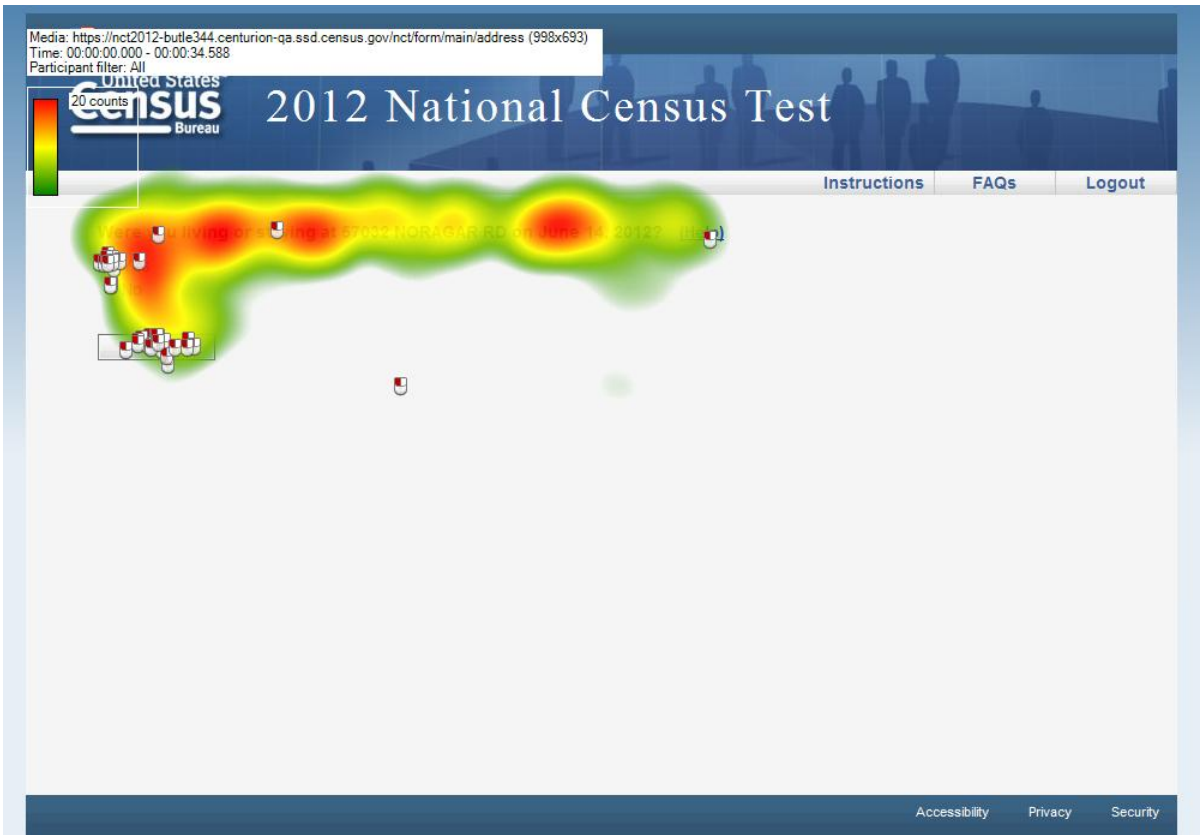


Figure 22: Address (n = 20)

- Figure 23 shows that participants glanced through most of the content and paid slightly more attention to the first two sentences (e.g., the “Do NOT include these people:” and the “Do include these people” sentences).

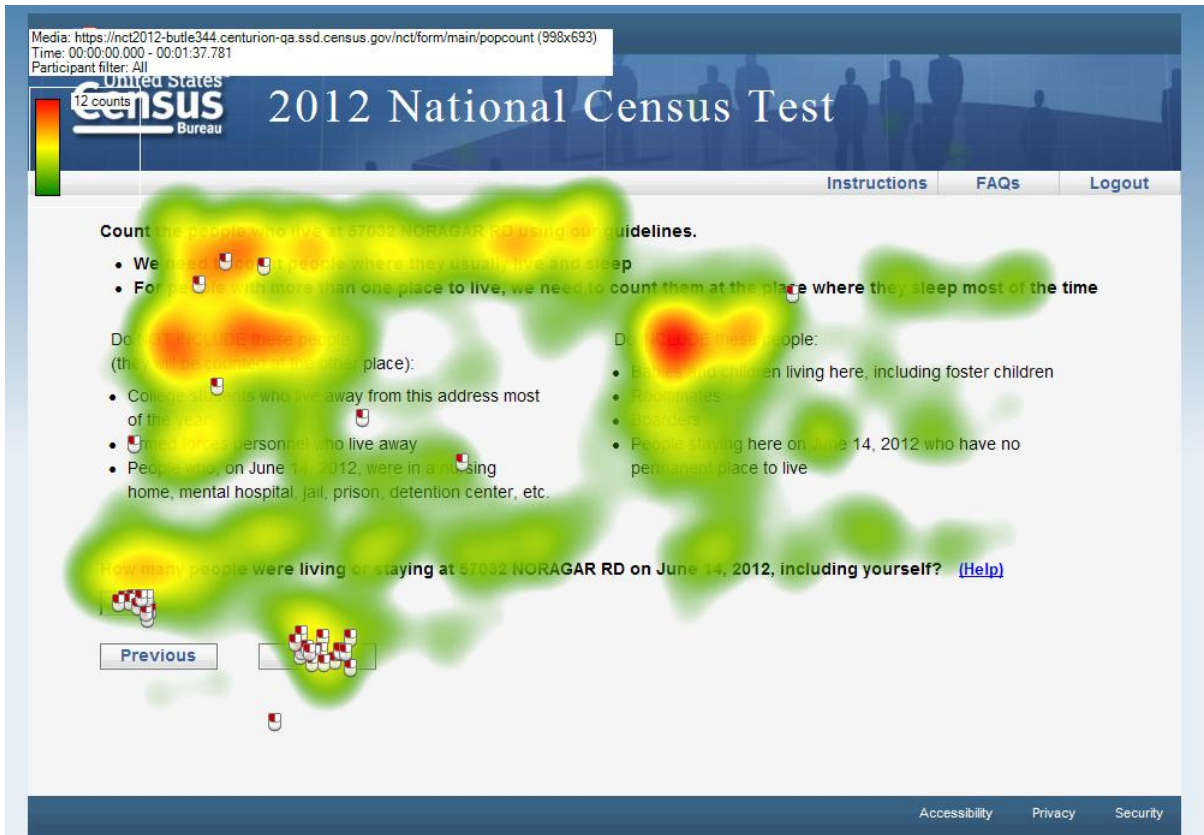


Figure 23: POPCOUNT (n = 10)

- Figure 24 shows that participants glanced through the main question. Participants entered their names and looked slightly more often at the screen while typing their telephone numbers.

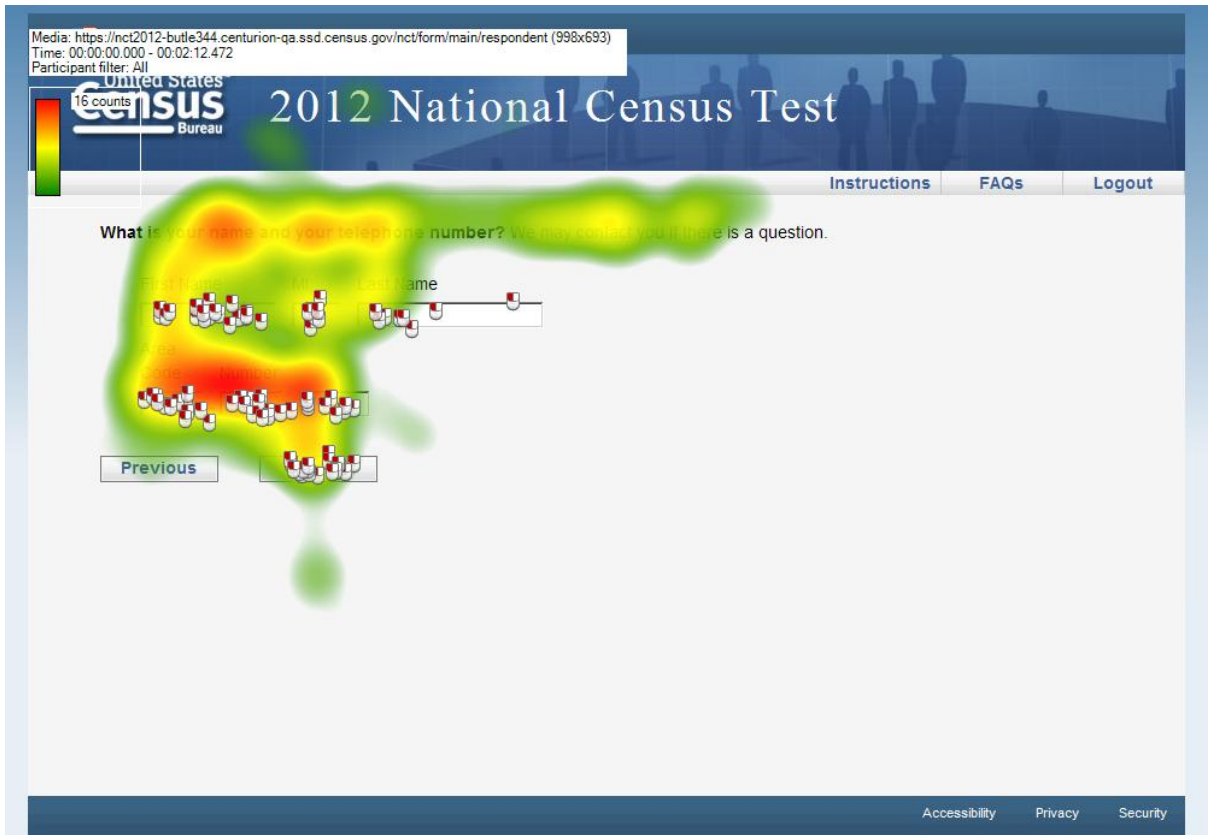


Figure 24: Respondent screen (n = 20)

- Figure 25 shows that the participants glanced through the first three lines of the text on the pages. Most participants wrote down the PIN. They read the first few words of the authenticate question's instruction and the question itself.

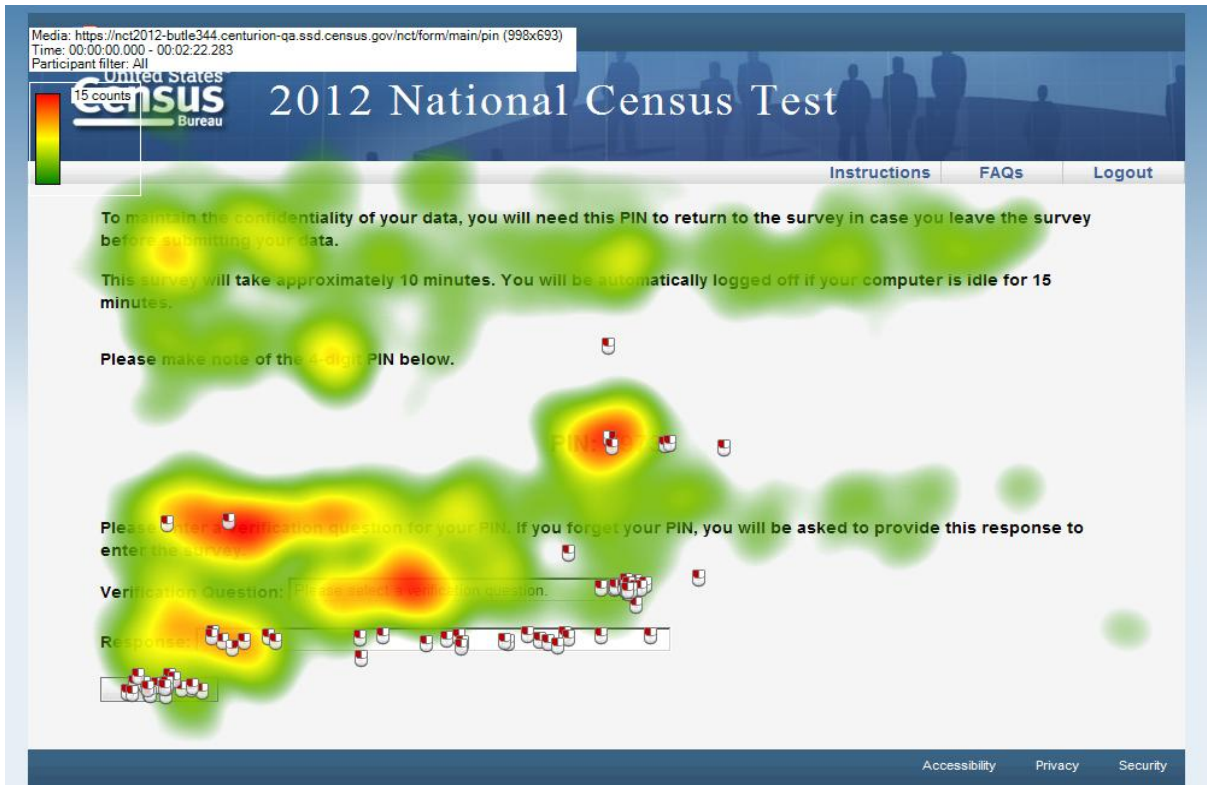


Figure 25: PIN (n =20)

- Figure 26 shows how people saw the People page. Participants did not read the whole question. They looked into the text field to enter the names of their household members.

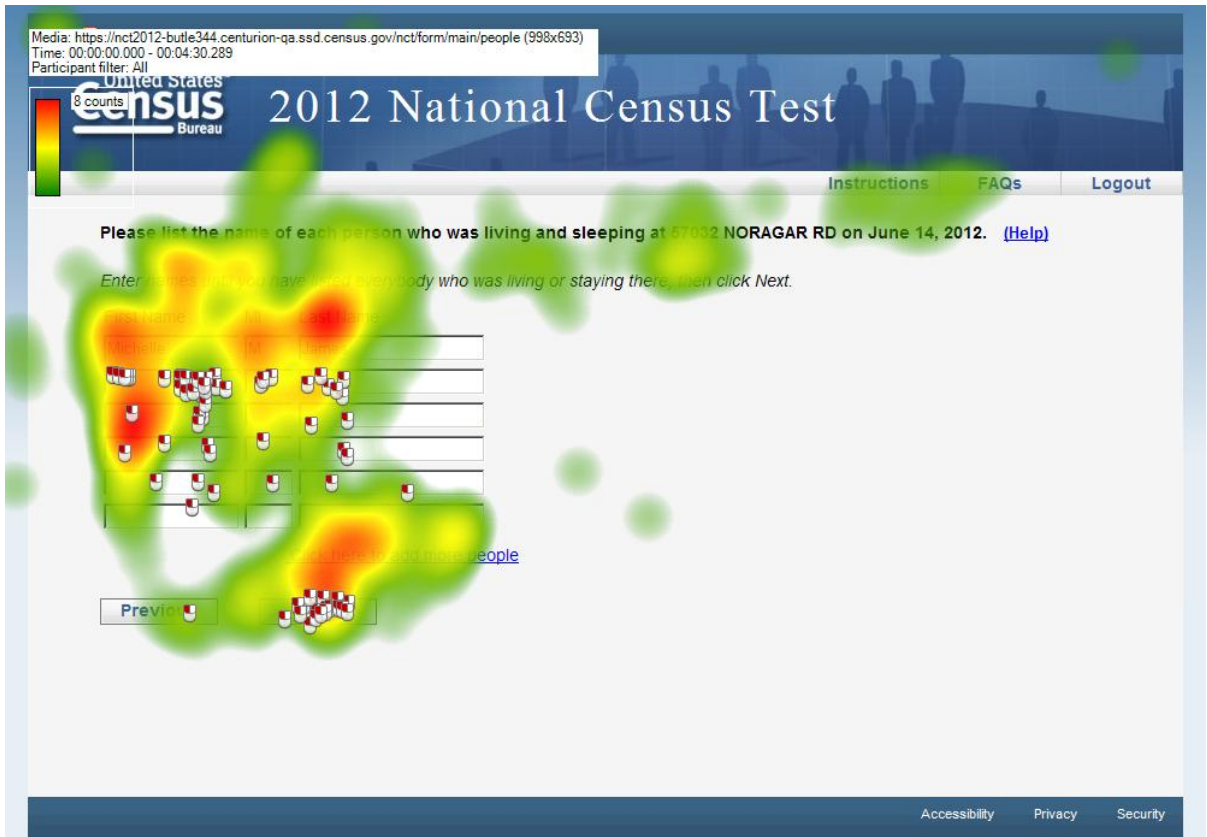


Figure 26: PEOPLE (n = 20)

- Figure 27 shows that participants glanced through the first three examples, skimming the last few examples.

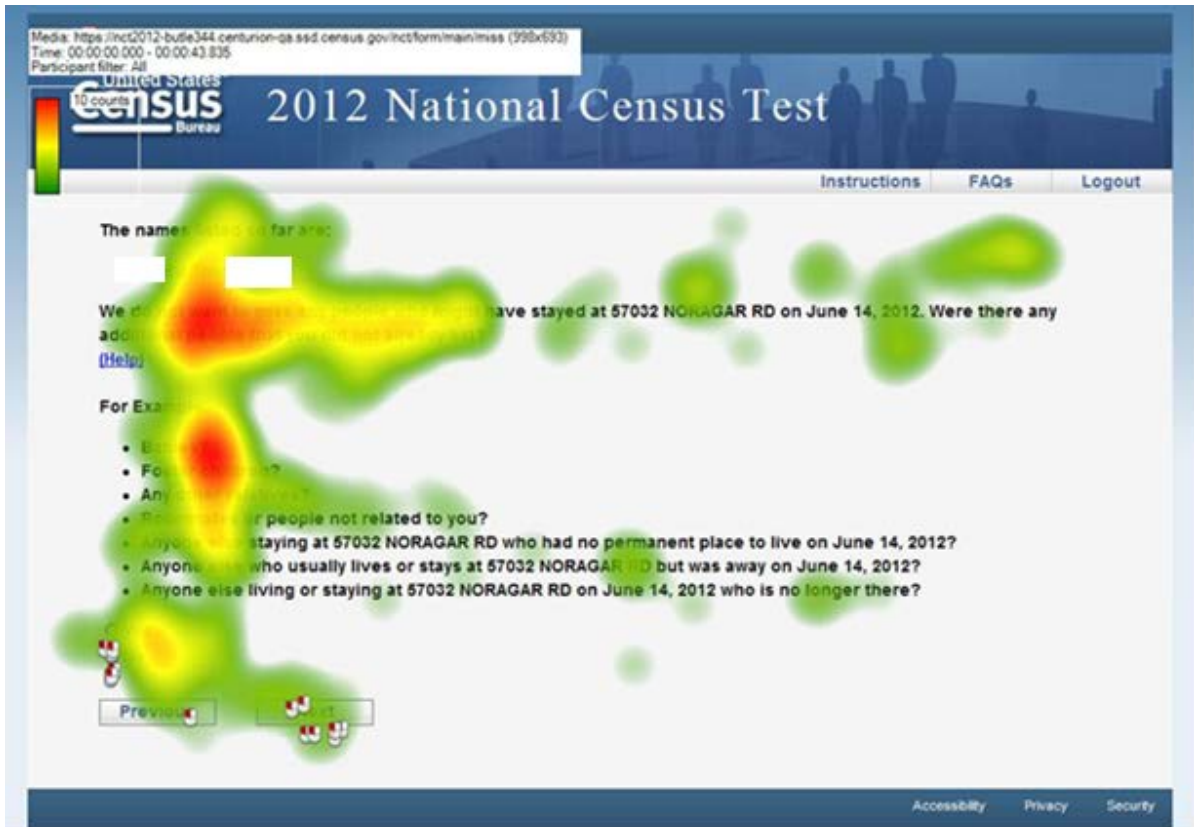


Figure 27: MISS (n = 7)

8. Vignette Findings

After completing debriefing questionnaires administered by the researcher at the end of the survey, participants were presented with 7 different coverage vignettes or scenario questionnaires. The scenario questionnaires were asked in random order⁵. The test administrator read the scenario questionnaires to the participants. The participants were allowed to read the scenarios and marked their answers on paper. Due to time constraints, not all participants had enough time to answer all the questions. Detailed information on the scenario results are attached in Appendix E.

Scenario 1: Newborn baby: count in hospital or at home residence?

Where was Baby Starr staying on June 14, 2012? Total answers = 19 Home = 13 Hospital = 4 Some other place = 2 Don't know = 0	Where does Baby Starr Live and sleep most of the time? Total answers = 19 Home = 11 Hospital = 8 Some other place = 0 Don't know = 0
---	---

Feedback: Most of the participants think that the stay of baby at the hospital is temporary. That was the reason given for choosing “Home” as their answer.

Most of the participants answered “Home” in the second part of the question with the same logic that the baby will be staying at home most of the time. Eight participants said the baby is in “Hospital” and their logic was since the baby has never been to the home, it makes sense to answer this way.

⁵ The test administrator shuffled the vignettes, which were each printed on a sheet of paper, prior to the usability session.

Scenario 2: In-laws of burnt down house living at son-in-law's house.

Where was Mother N Law staying on June 14, 2012? Total answers = 19 Son-in-laws house = 18 Mother's house = 1 Some other place = 0 Don't know = 0	Where does Mother N Law live and sleep most of the time? Total answers = 19 Son-in-law' house = 14 Mother's house = 4 Some other place = 0 Don't know = 1
--	--

Feedback: The first question asks about where the mother-in-law would be staying on June 14. For most participants this meant the time hovering around June 14, hence 18 out of 19 participants marked the son-in-laws house.

In the second part of the scenario, most of the participants answered the mother-in-law was staying at her son-in-law's house "most of the time." Participants rationalized that because she had been living with her son-in-law for the past 3 months and expected to stay there 8 more months, it was a significant amount of time. A few participants rationalized that "most of the time" the mother-in-law would be at her own house, as one year is only a short time out of 10 years.

Scenario 3: A child Suzy staying with two parents in two different states.

<p>Does anyone sometimes live or stay somewhere else with a parent grand parent, or other person? Total answers = 18 Yes = 18 No = 0</p>	<p>Where was Suzy Smith staying on June 14, 2012? Total answers = 18 Mother's house = 1 Father's house = 15 Some other place = 2 Don't know = 0</p>	<p>Where does Suzy Smith live and sleep most of the time? Total answers = 18 Mother's house = 14 Dad's place = 1 Some other place = 2 Don't know = 1</p>
---	--	---

Feedback: All of the 18 participants who answered this scenario question answered yes for the first question.

For the date specific question (June 14) most of the participants (15 out of 18) marked that Suzy was at her father's house.

Fourteen participants said Suzy stays with her mother most of the time, 1 participant said she stays with her dad, and 2 participants selected some other place and 1 participant picked "Don't Know." In this scenario, the phrase "most of the time" was clear for most users. However, for the handful that gave different answers, perhaps "most of the time" was not clear as it could mean most of the time in terms of the child's whole life, a year, or only that summer.

Scenario 4: A college student Maria staying with her parents on weekends and at school address on weekdays.

Where was Maria Cuervo staying on June 14, 2012? Total answers = 17 Parent's house = 6 College housing = 11 Some other place = 0 Don't know = 0	Where does Maria Cuervo live and sleep most of the time? Total answers = 17 Parent's house = 1 College housing = 16 Some other place = 0 Don't know = 0
--	--

Feedback: For the question about where Maria was on the exact date (June 14), answers varied. It is possible that participants who marked at her parents' house did not realize that June 14 was a weekday.

In general, most participants (16 out of 17) picked college housing as the answer for where Maria stayed "most of the time." So it appears that at least in this test situation, most participants understood that college students should be counted at the college housing.

Scenario 5: Army employee redeployed and husband filling out the survey at home.

Where was Jessica Rabbit staying on June 14, 2012? Total answers = 20 At the home address = 7 The job at military assignment = 13 Some other place = 0 Don't know = 0	Where does Jessica Rabbit live and sleep most of the time? Total answers = 20 At the home address = 7 The job at military assignment = 9 Some other place = 0 Don't know = 4
--	---

Feedback: About two-thirds of the participants marked for the first question (about June 14) that Jessica was at the military assignment, while about one-third marked that she was at her home address. The variability of answers to this question could be attributed to the actual user sessions being conducted before, during and after June 14.

There was no strong consensus on what the correct location was for most of the time—home or job at military assignment. Participants gave different reasons for why they marked one over the other, including:

- “She is married to him. She doesn’t live anywhere else. She doesn’t live in the service. There is no confusion with that.”
- “Jessica is usually at the home address.”
- “It says Jessica is redeployed for the third time but it does not say how long it has been between redeployments. Jessica has only been gone a few days. So... I’m confused about that. I would need more guidance for the first question.”
- “The home address because I don’t know enough to answer if it’s a military assignment even though she’s deployed... I still wouldn’t think to say military address even if she’s been away longer than a week.”
- “It’s her 3rd tour and I’m not sure if assignments have been so long... so I can’t accurately answer the question.”
- “She’s been over there a while and that is where she sleeps.”

Scenario 6: A visitor named Rudy staying with Matt and his wife.

<p>Where does Rudy Sincasa live and sleep most of the time? Total answers = 18 Matt's home address = 0 The other place = 0 Equal time at all places = 1 Some other place = 5 Don't know = 12</p>	<p>Where was Rudy Sincasa staying on June 14, 2012? Total answers = 18 Matt's home address = 10 The other place = 0 Some other place = 2 Don't know = 6</p>
--	--

Feedback: In general, this was a difficult scenario for participants to answer. Most participants did not know how to answer the “most of the time” question. In contrast, for the exact date question, the majority of participants marked Matt’s home address. Still slightly less than half marked “Don’t know” or “Some other place” for the exact date question.

Scenario 7: A retired person Cathy has two homes- one in Maryland and another seasonal home in North Carolina. She is filling out the survey while staying in the Maryland (or after sponsor change, she is in North Carolina) home.

<p>Where was Cathy Doscasa staying on June 14, 2012? Total answers = 18 Maryland home = 6 North Carolina home = 12 Some other place = 0 Don't know = 0</p>	<p>Where does Cathy Doscasa live and sleep most of the time? Total answers = 18 Maryland home = 14 North Carolina home = 3 Equal time at all places = 1 Don't know = 12</p>
---	--

Feedback: The scenario was changed by the sponsor a few days into the testing. Hence, the results of where Cathy was on June 14 need to be viewed in context to the modification of where Cathy was at the time she was filling out the survey.

The majority of participants understood “most of the time” to be where Cathy was 8 months out of 12 (e.g., the MD home).

9. Summary

The results of the experimental manipulations showed that participants completed the shorter coverage path more quickly than the longer coverage path. The inclusion of a POPCOUNT screen was associated with longer completion times for both the short and long coverage paths. With respect to the new Race/Origin screens, participants completed version 1 more quickly than version 2 on average.

In general, participants were able to fill out the NCT questionnaire relatively efficiently. There were a few instances where participants were confused, e.g., the ethnic origin, if they did not know a fellow householders' exact age, or in the few instances when prompted to enter a seasonal or second residence. Aside from a handful of high priority problems, none of the issues were "showstoppers." Recommendations on ways to modify the questionnaire to address some of the noted user issues are included in feedback above.

Accessibility testing showed that labels for the telephone number question are not correctly associated with the data entry fields. The day combo box in the date of birth question does not behave in the same way as the month and year combo boxes, which may affect data quality. When a JAWS user resumes a session and tries to enter his/her PIN, he/she may not be able to find the PIN field because it is vocalized as "password." When a JAWS user types in their specific Race, origin, or tribe on the Race/Origin & Origin screen, we do not receive the benefit of a pre-classified response as a sighted user can provide. It will require a moderate level of effort to correct the accessibility violations found in this evaluation so JAWS users and persons who cannot use a mouse can enter their data without difficulties.

10. References

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- Schloss, K. B. & Palmer, S. E. (2009). An ecological valence theory of human color preferences. *Journal of Vision*, 9(8), 2663-2668.

Appendix A1 : Mailing Cards for Login

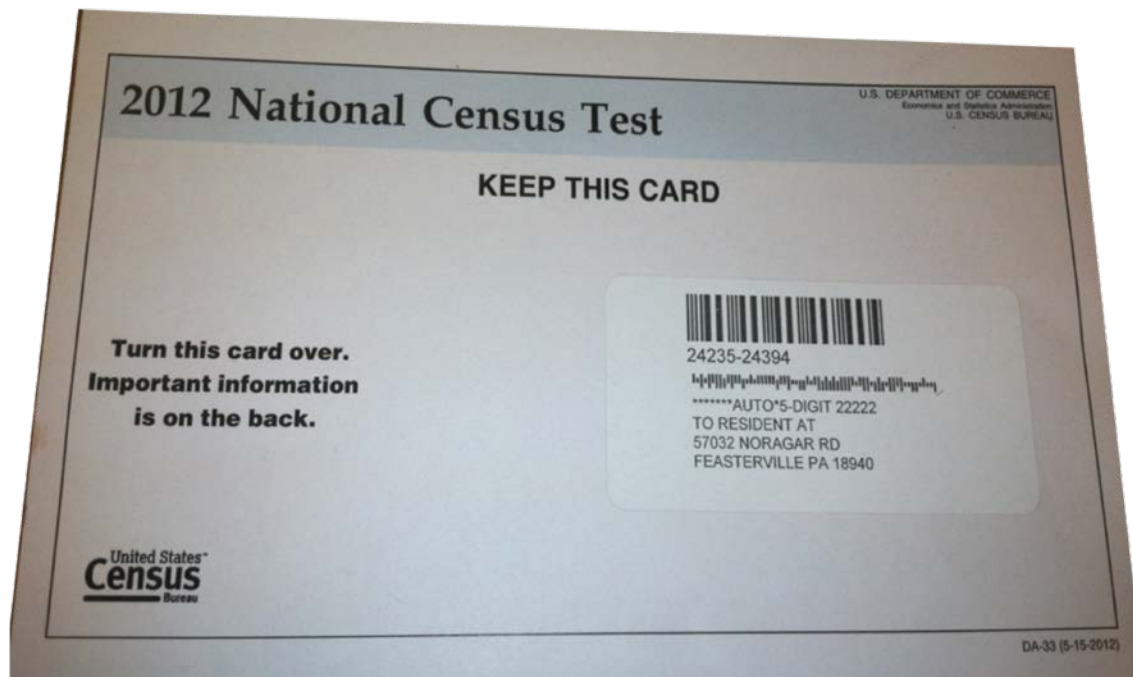


Figure A1: Mail Card Front

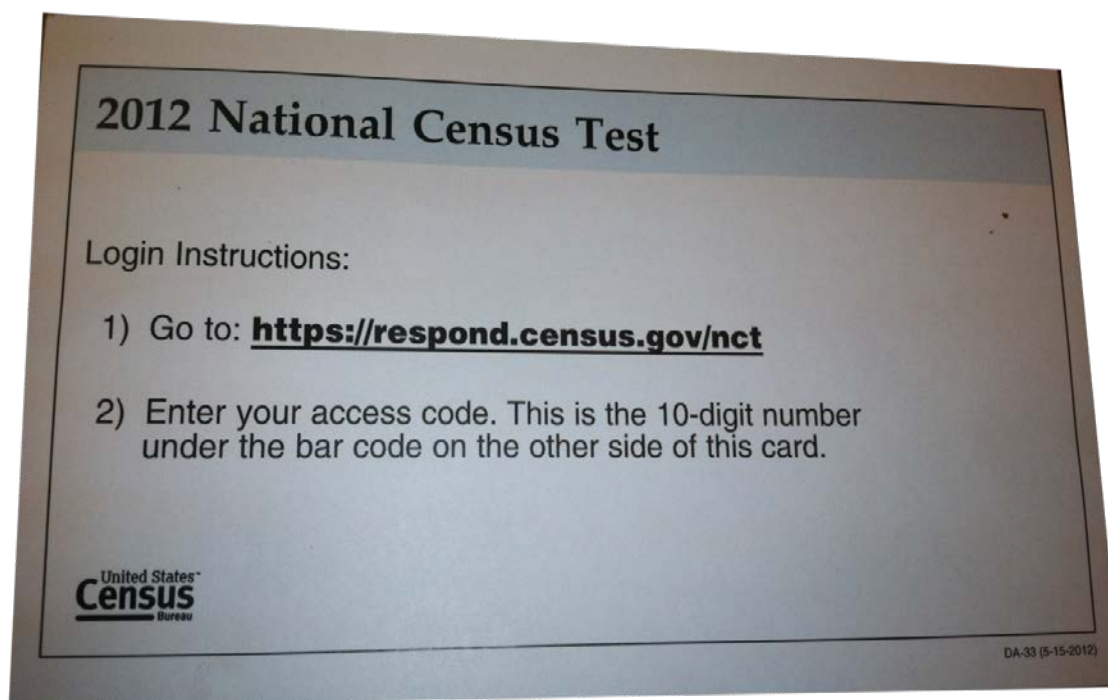


Figure A2: Mail Card Back

Appendix A2 : Screen Shots of NCT Survey

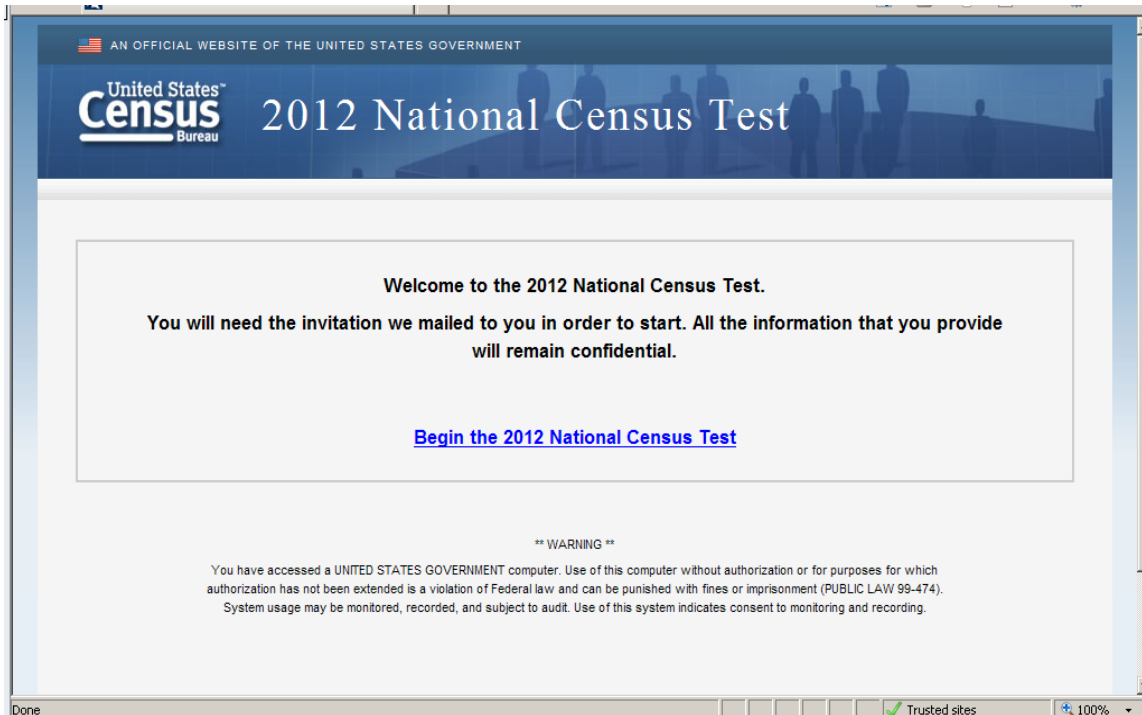


Figure A3: Welcome

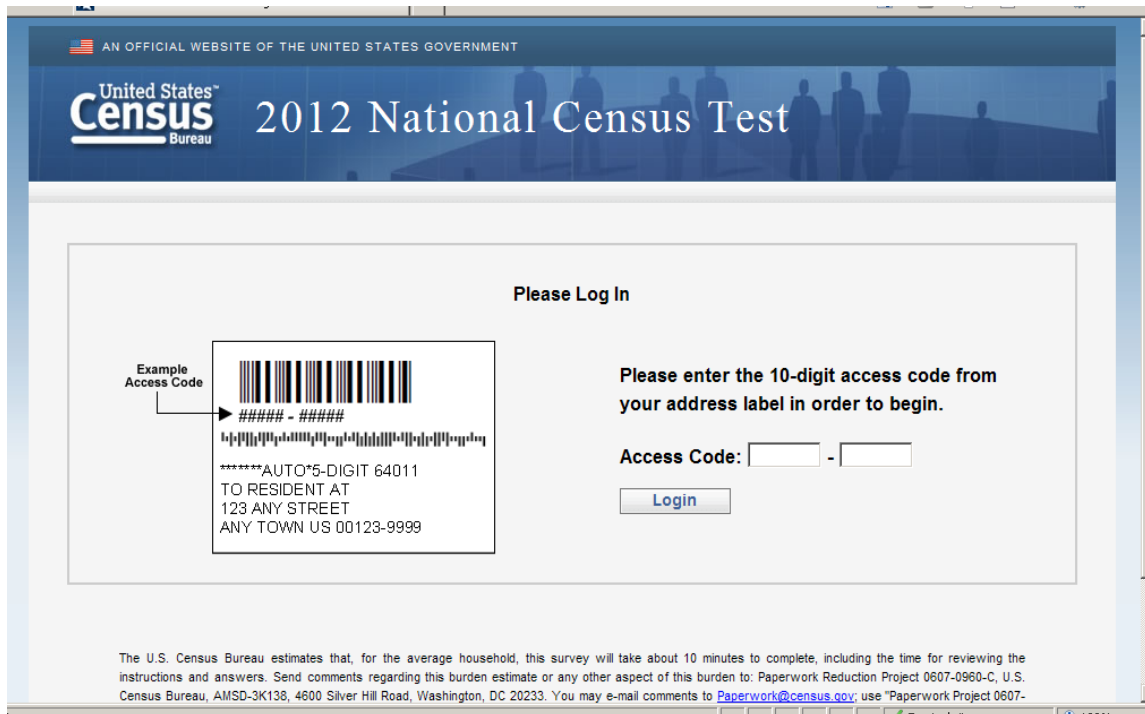


Figure A4: LOGIN

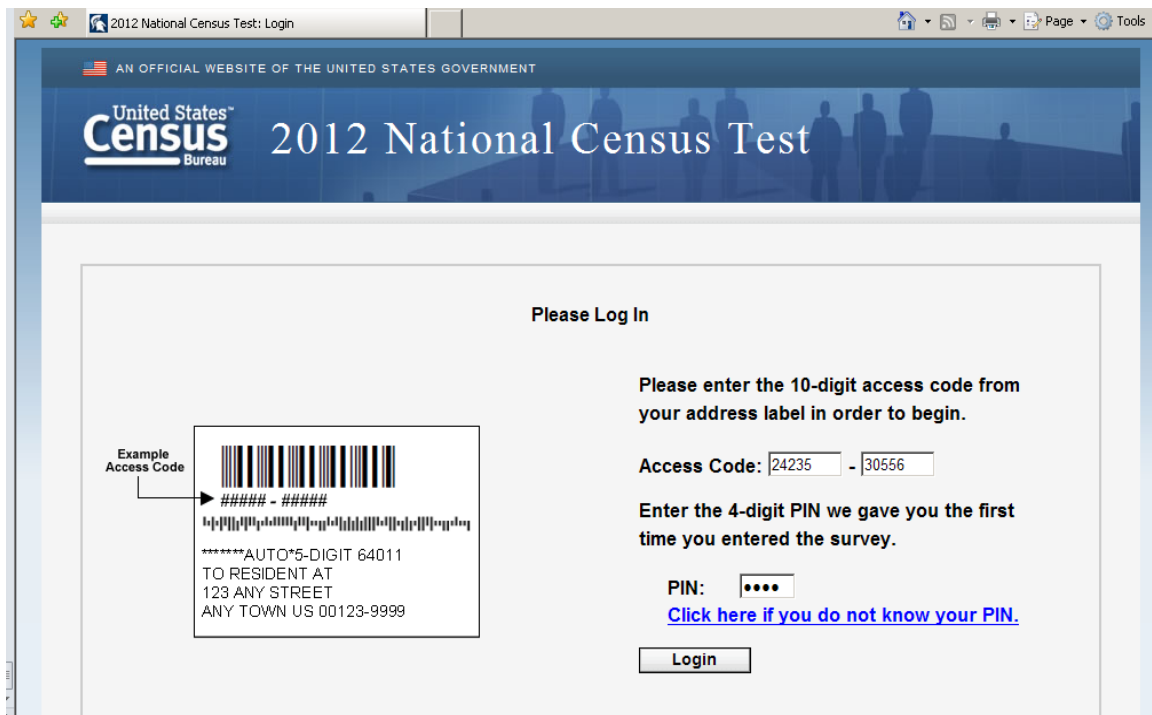


Figure A5: PIN Request - If logging back in, this screen will request the randomized PIN generated during the first session.

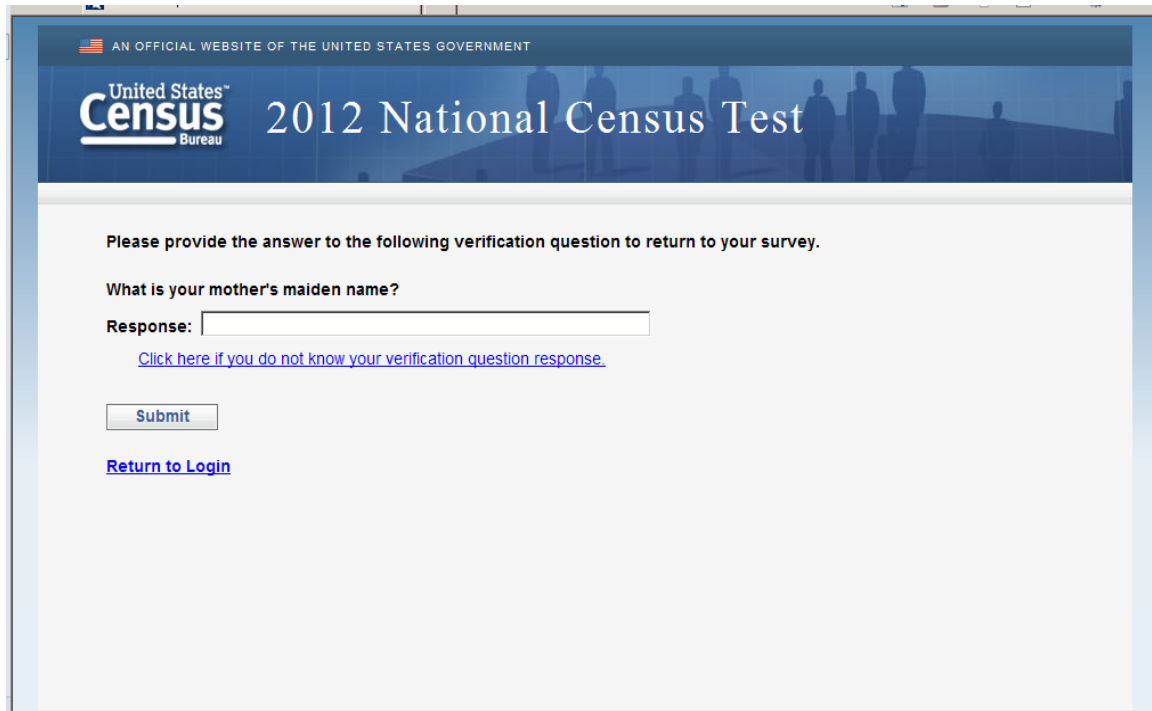


Figure A6: Request for response to security question- if R clicks on "Click here if you do not know your PIN" on the previous screen, they will be asked to answer the security response provided during the first session.

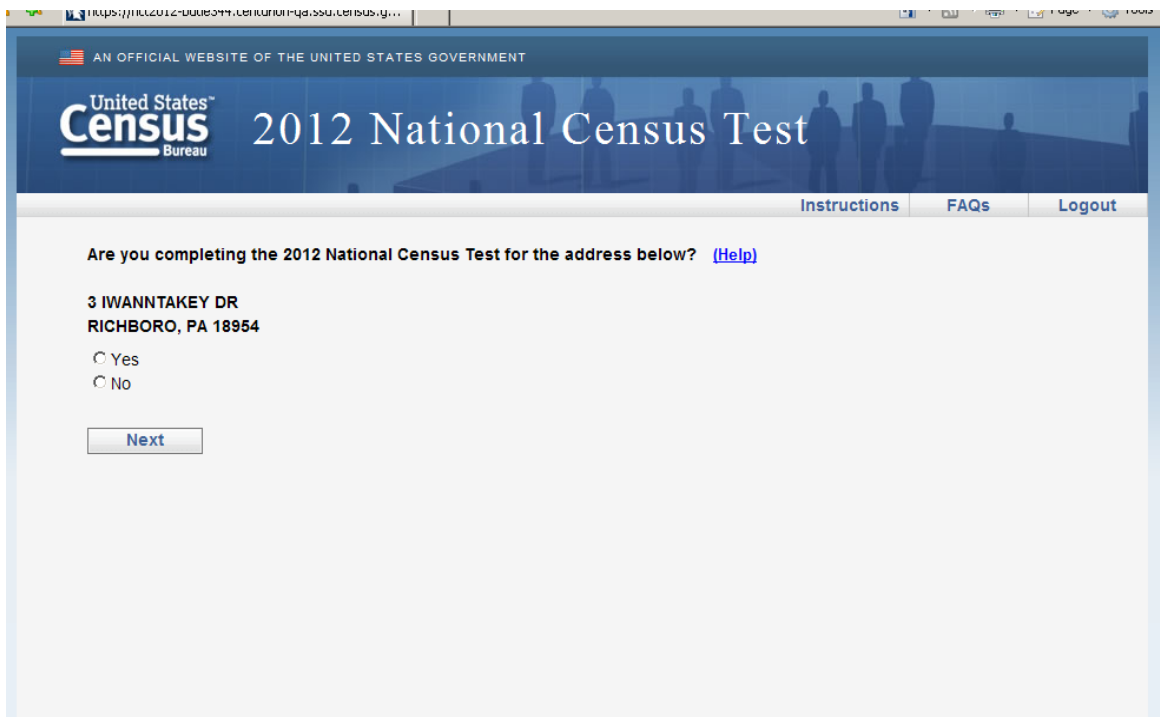


Figure A7: CONFIRM

Yes-> PIN

No-> VERIFY

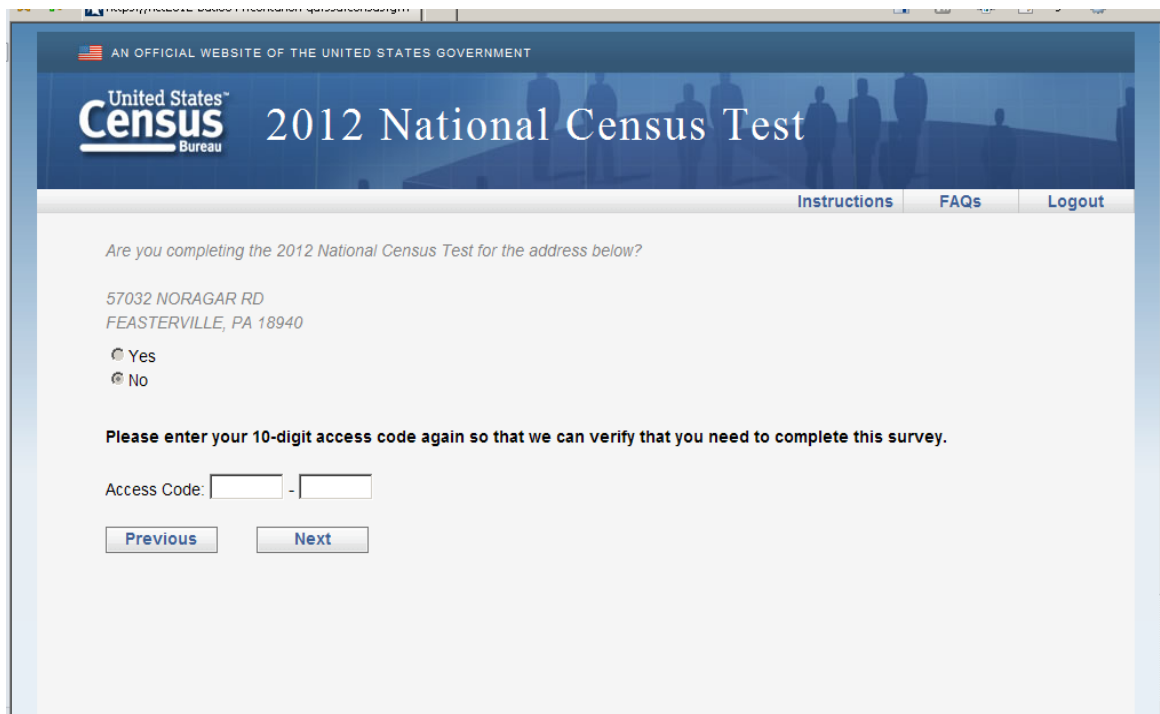


Figure A8: VERIFY

Verify Correct -> No Complete (Figure A9)

Verify Incorrect -> Back to Login Screen (Figure A10)

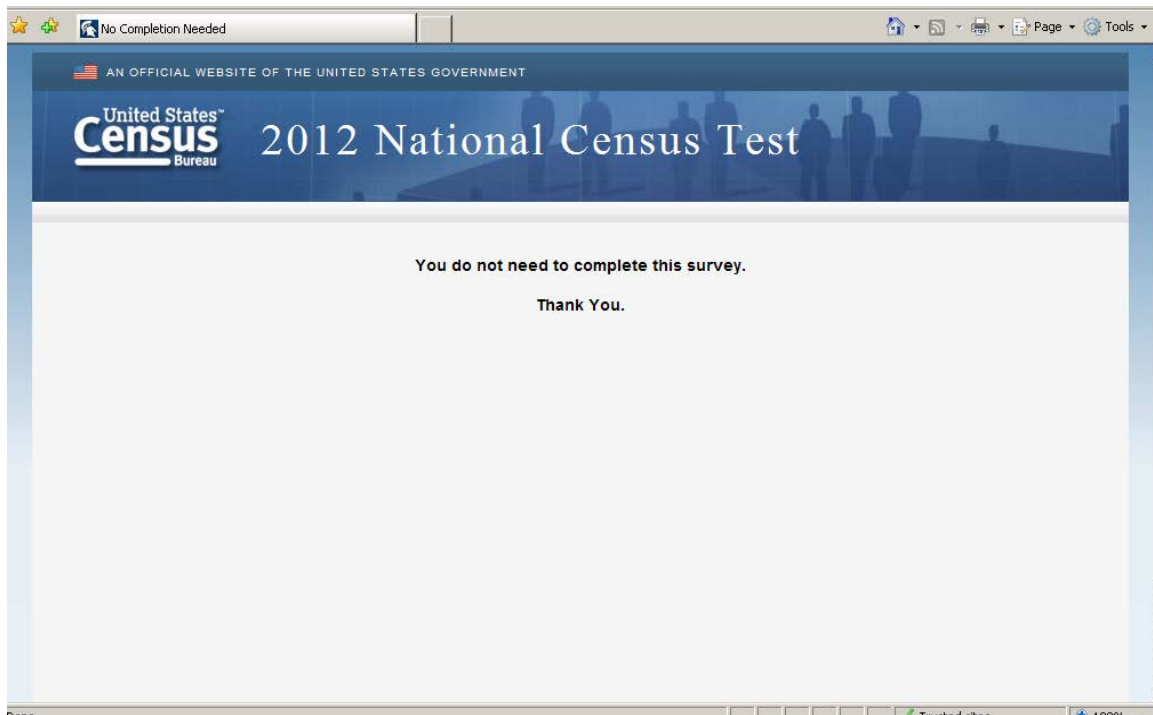


Figure A9: Correctly entered

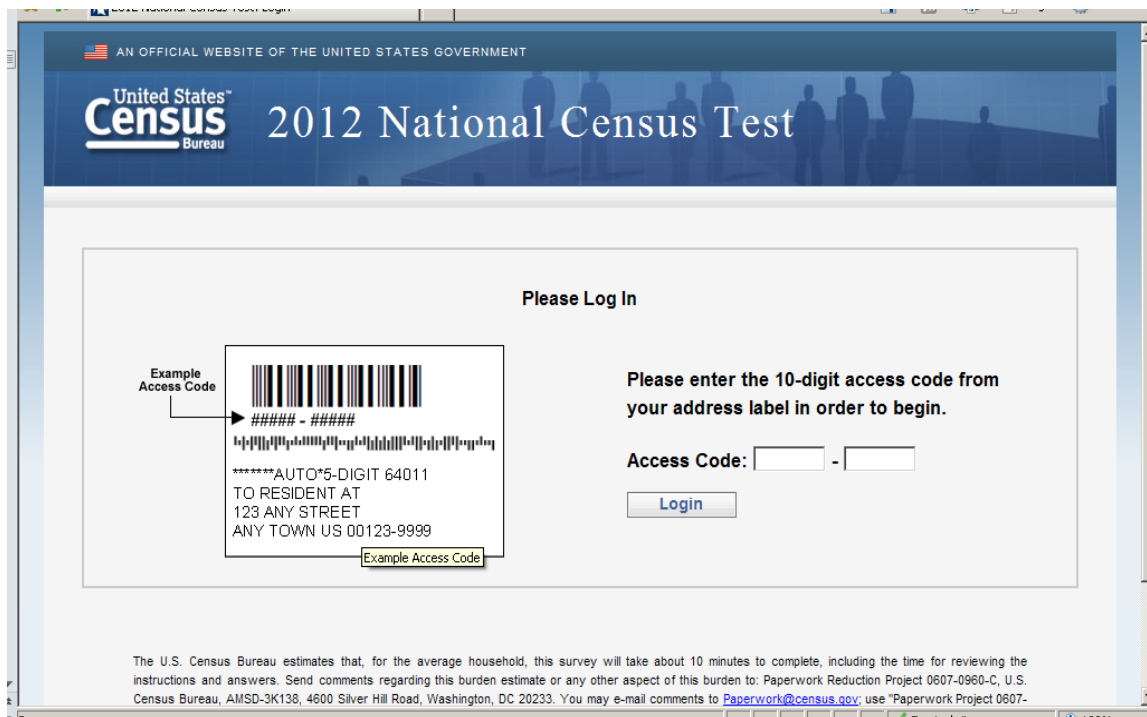


Figure A10: Incorrectly Entered

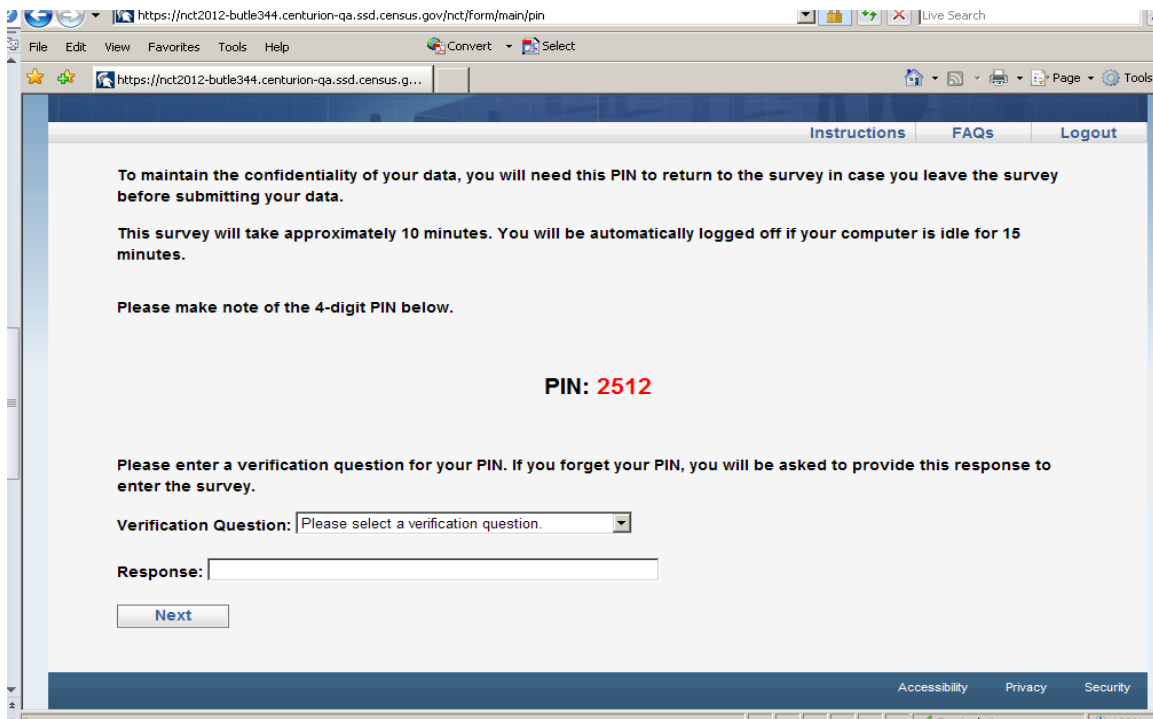


Figure A11: PIN (and Verification Question)

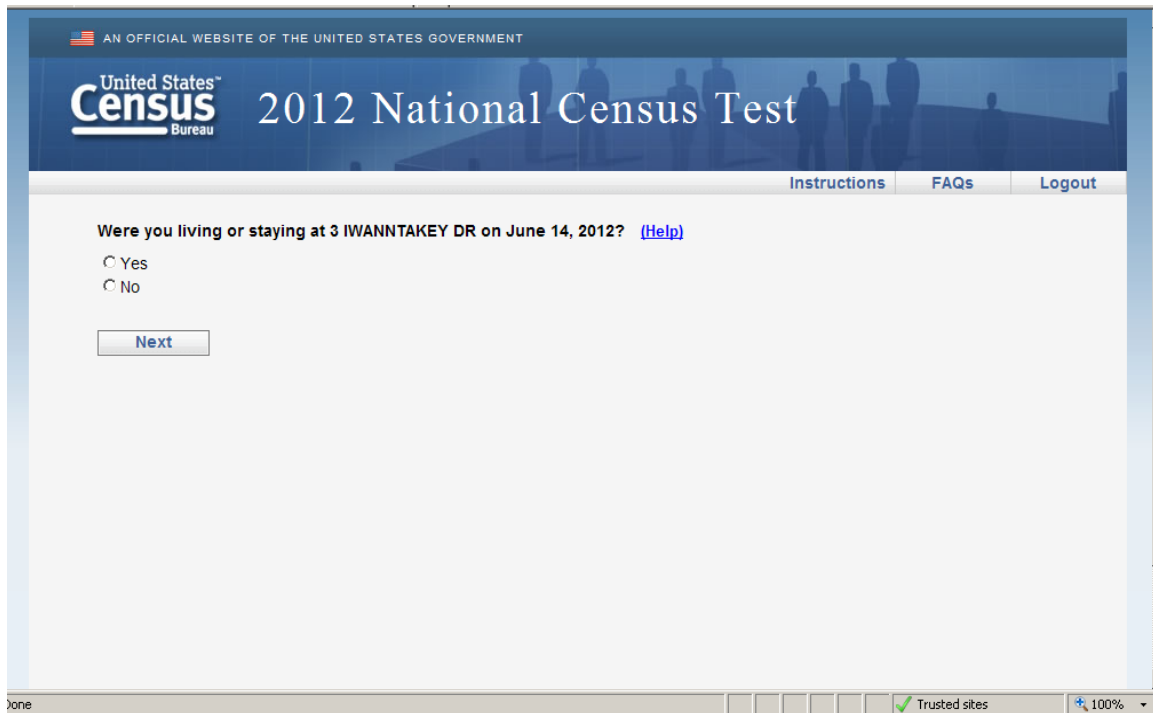


Figure A12: ADDRESS

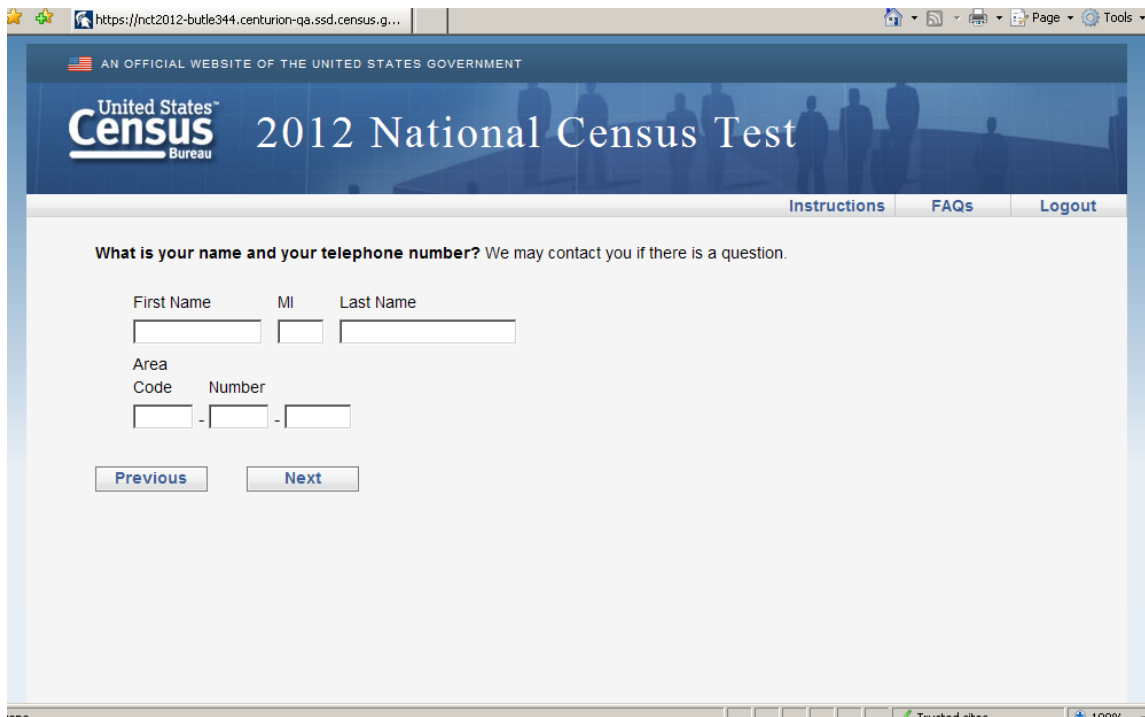


Figure A13: RESPONDENT

No

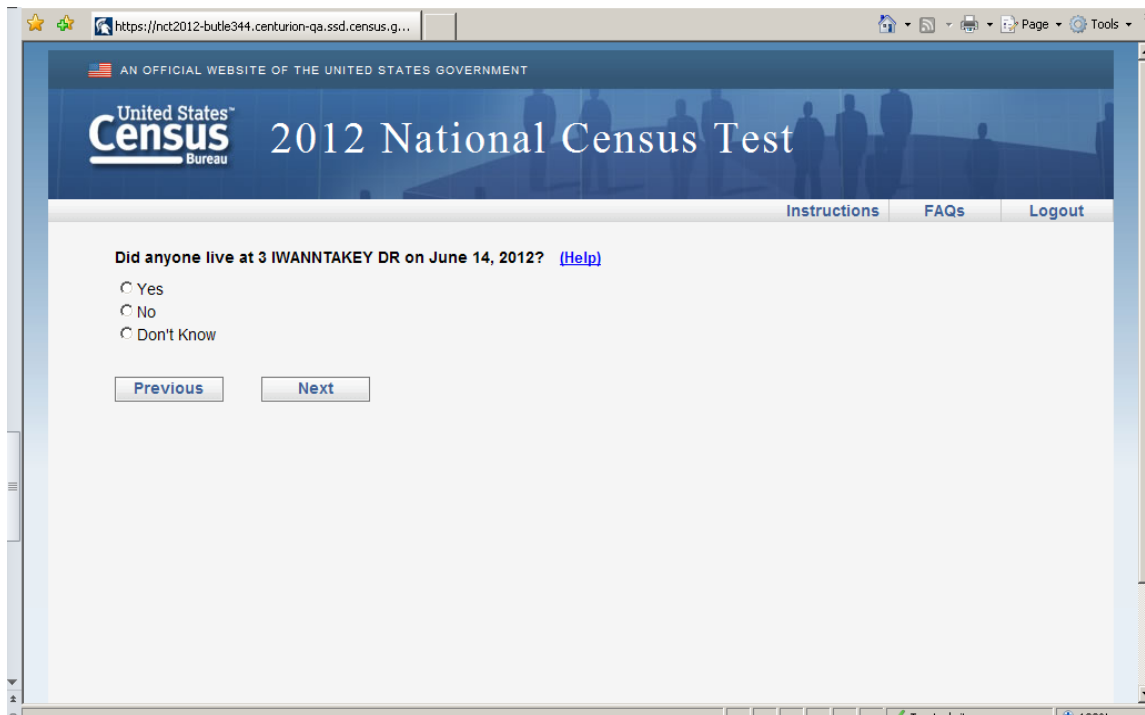


Figure A14: ANYONE

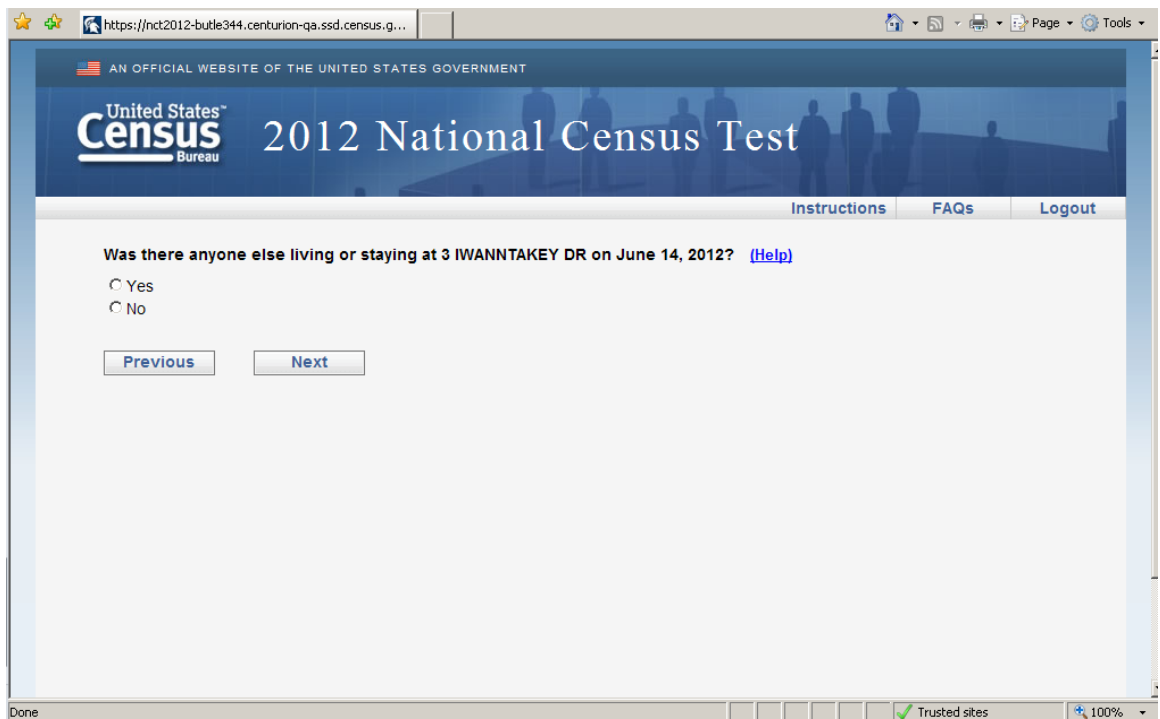


Figure A15: OTHERS

No -> ADD1 (Figure A16)

Yes -> PEOPLE (Figure A17)

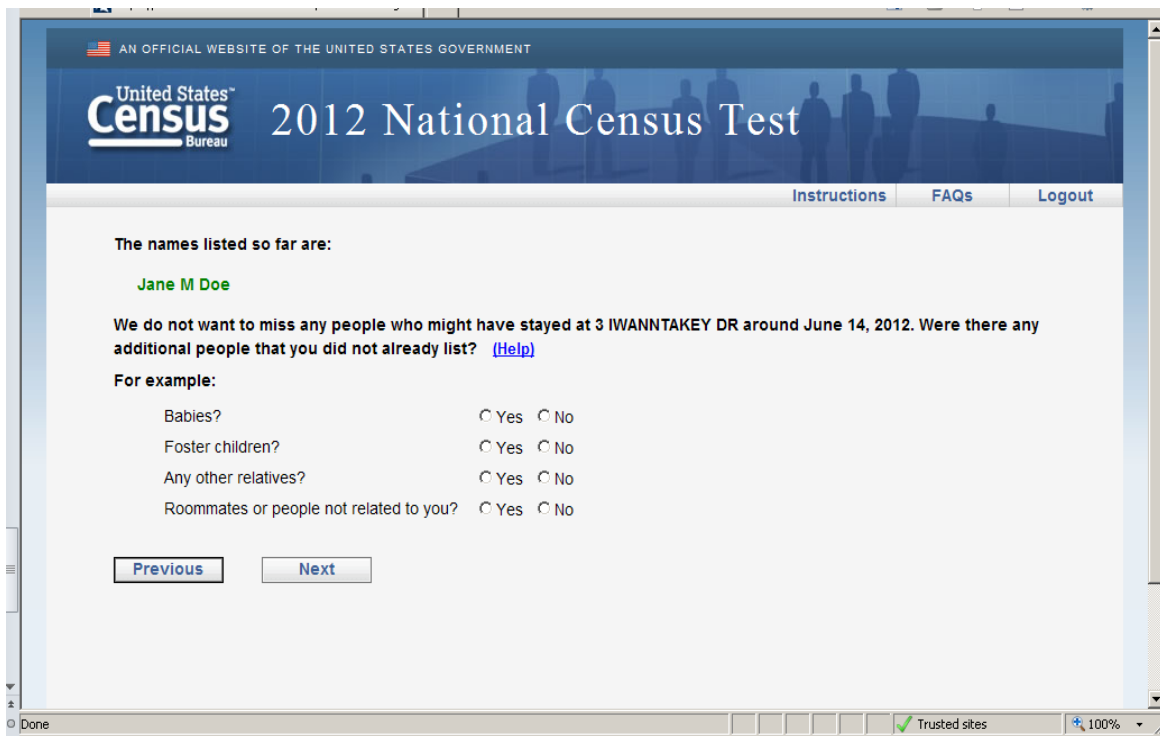


Figure A16: ADD1 (1 person)

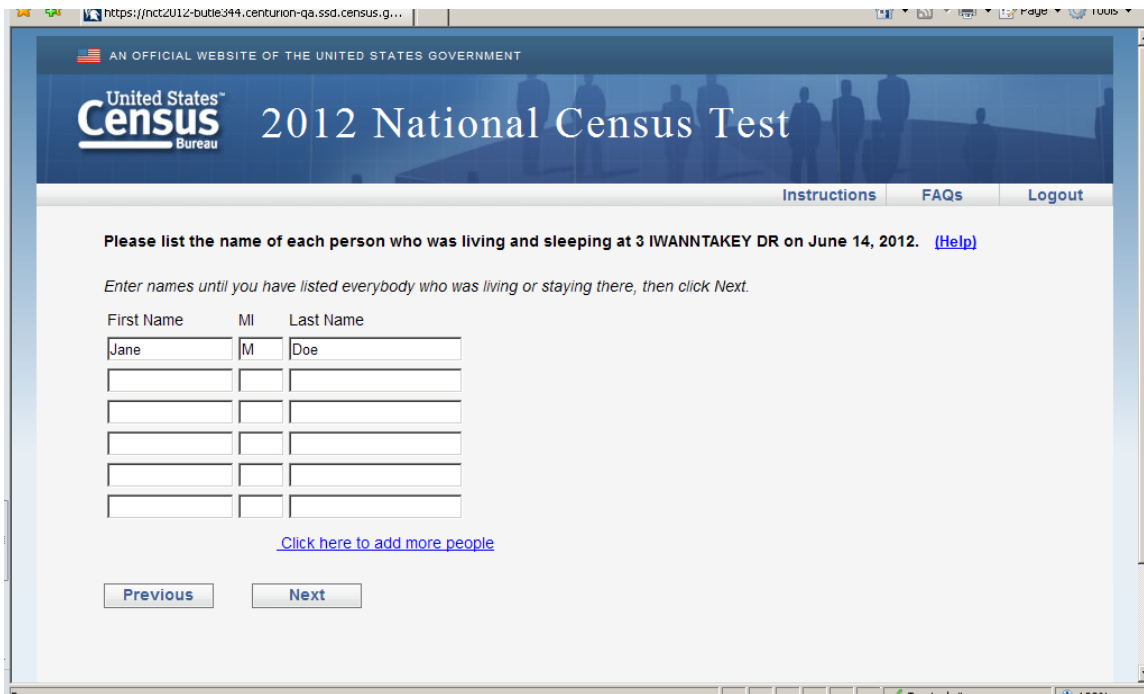


Figure A17: PEOPLE

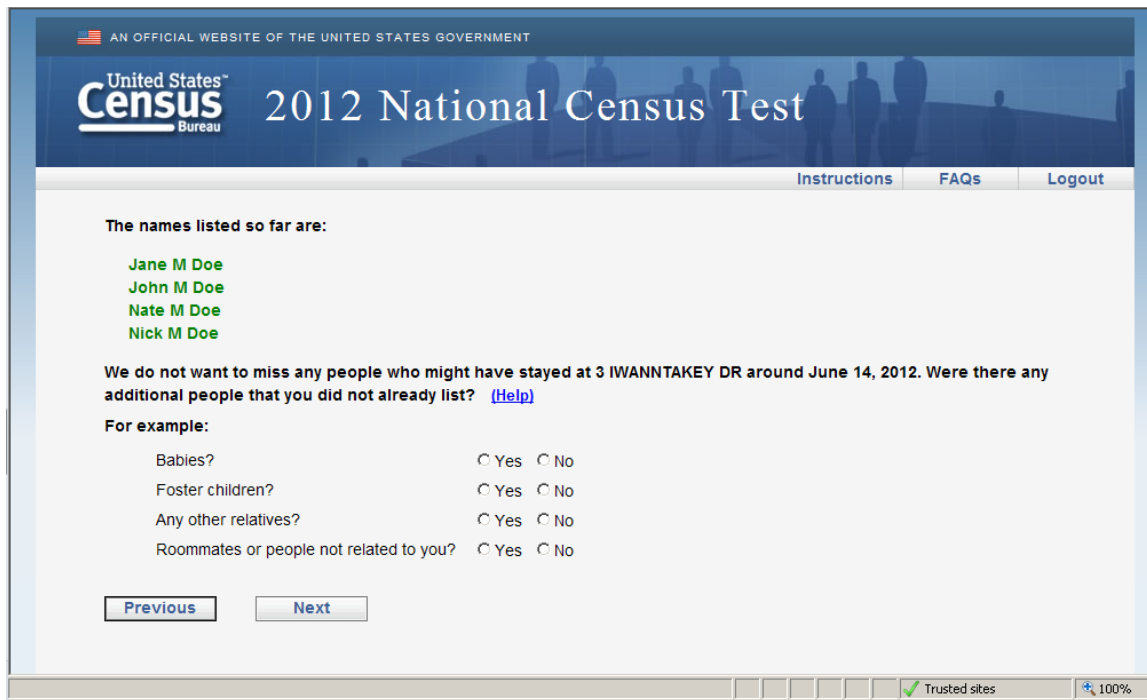


Figure A18: ADD1 (After adding names in PEOPLE)

NO -> ADD2 (Figure A19)

Yes-> Specify Names in ADD1 (Figure A20)

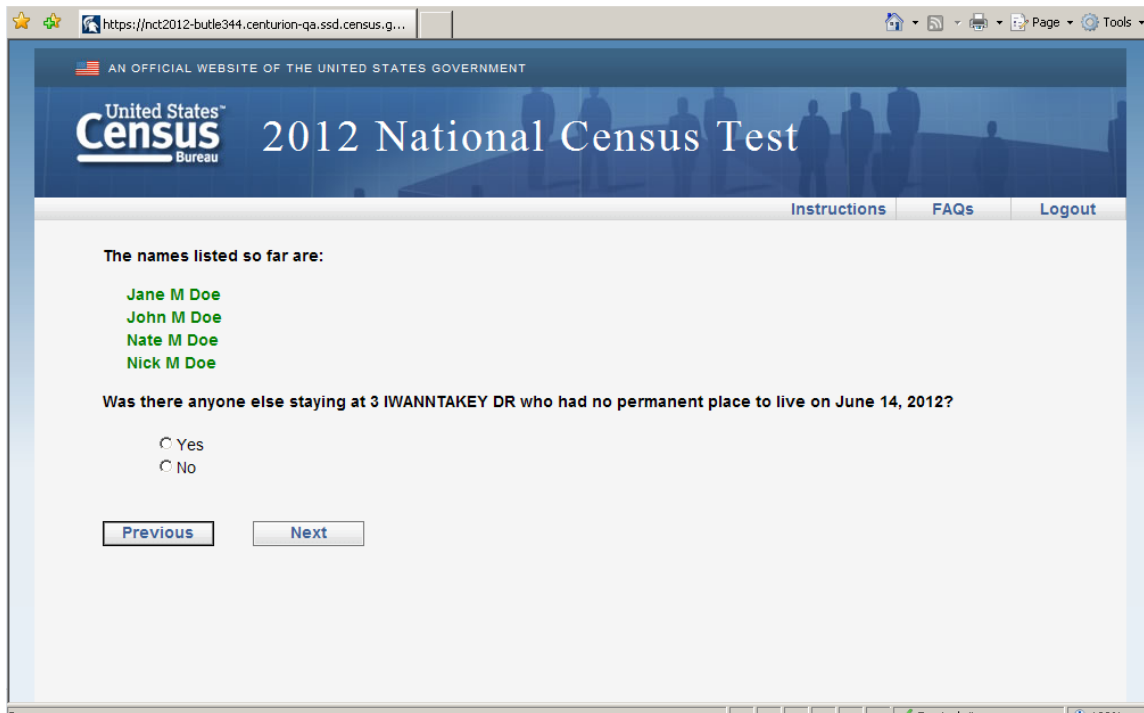


Figure A19: ADD2 with no additional people added in ADD1 ("No" selected)

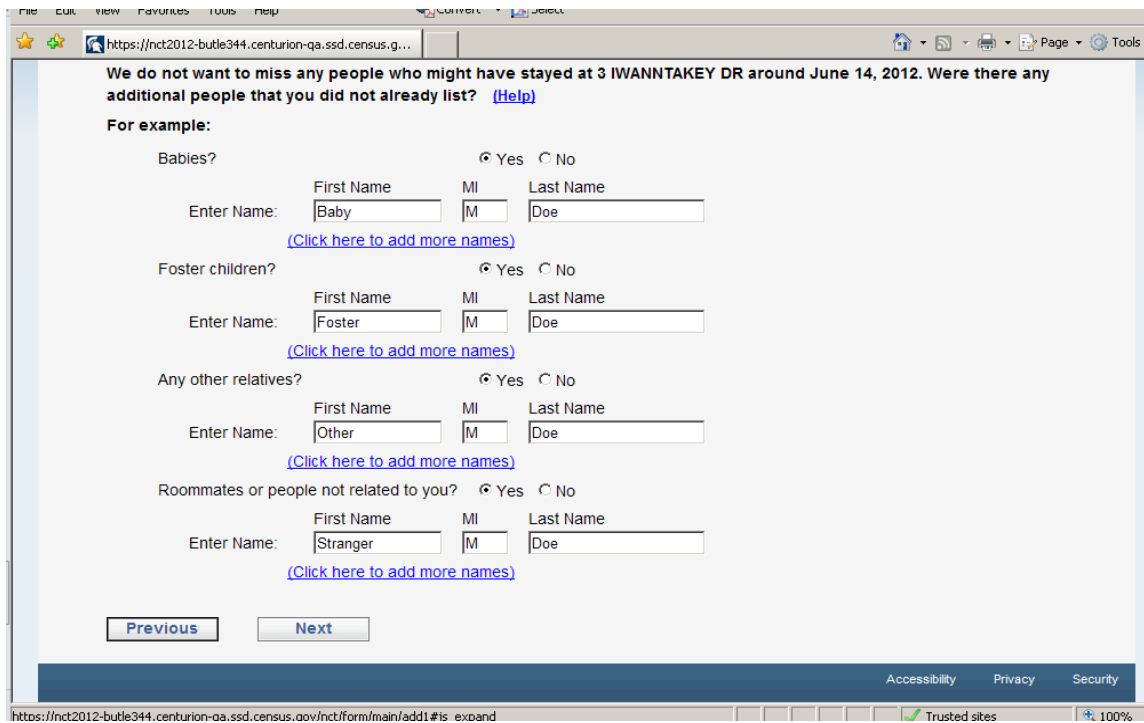


Figure A20: Specify Names in ADD1 ("Yes" Selected for each category)

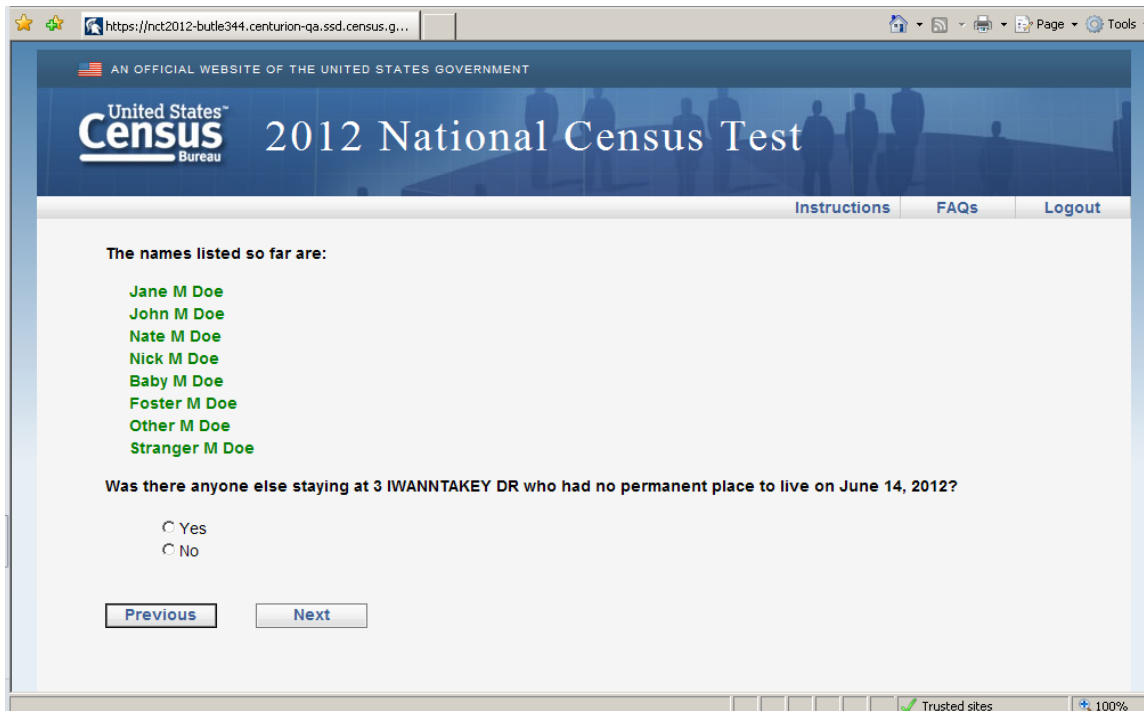


Figure A21: ADD2 after adding people in ADD1.

Usability Note: If you go back and say "No" after adding these people and then change it back to "yes," all the names are deleted and you have to put them back in again. They should be saved.

No -> ADD3 (Figure A22)

Yes-> Specify name(s) in ADD2 (Figure A23)

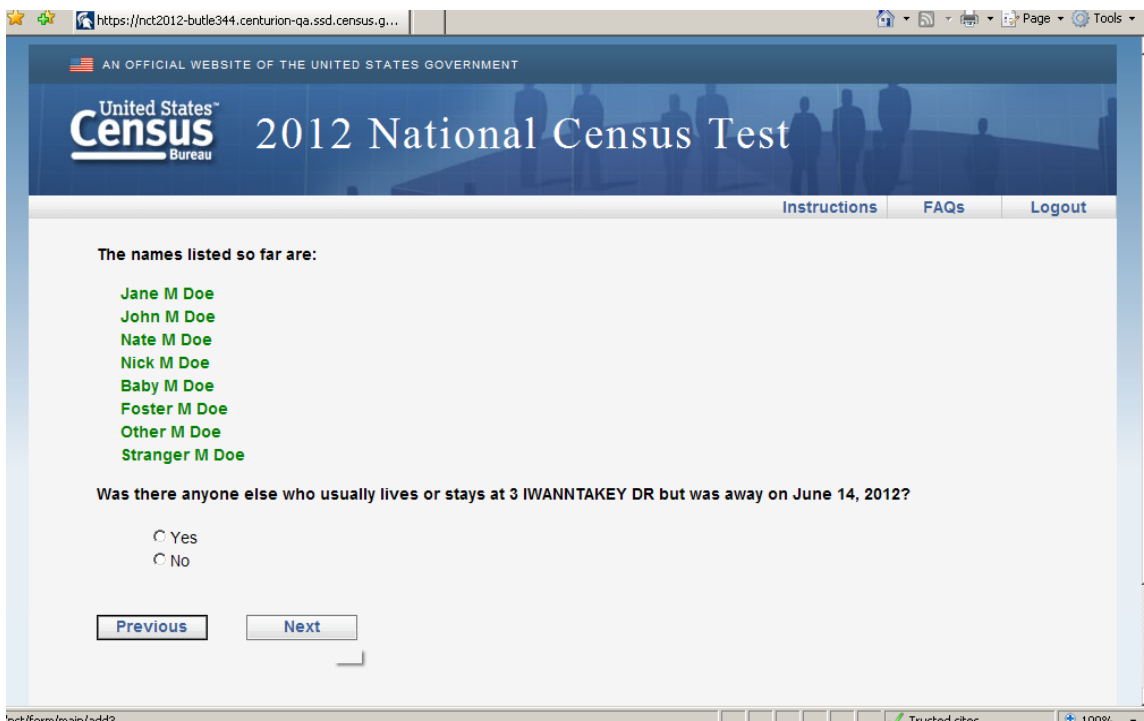


Figure A22: ADD3

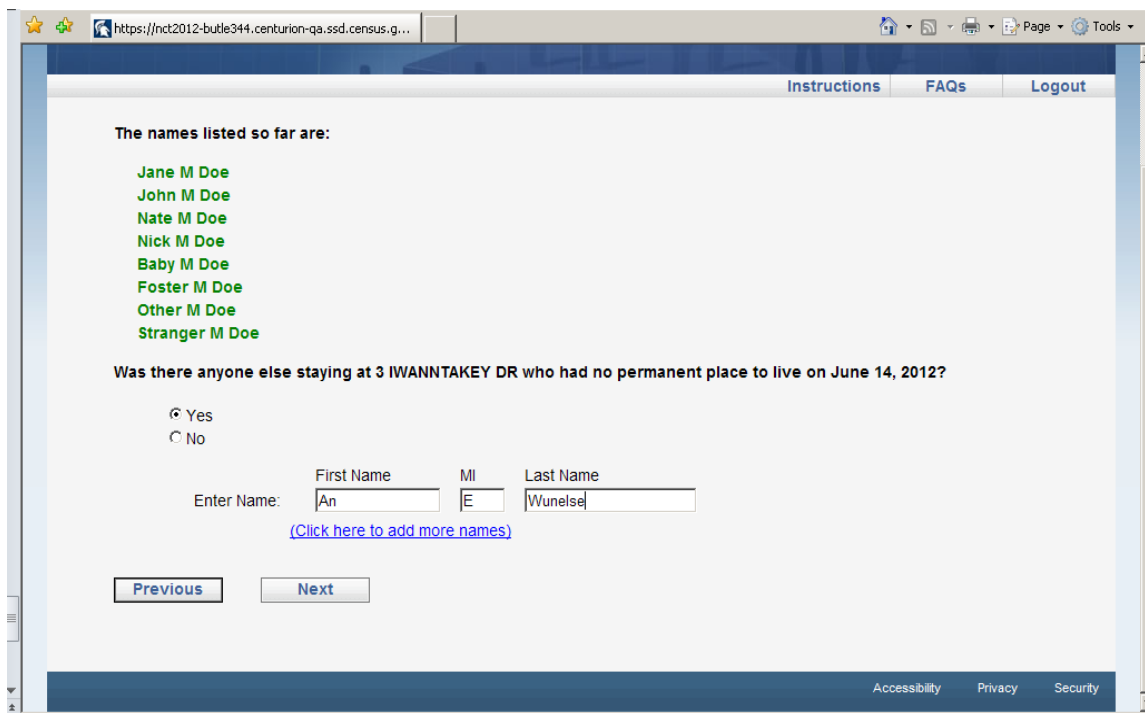


Figure A23: Specify Names in ADD2 (If "Yes" initially was selected in ADD2)

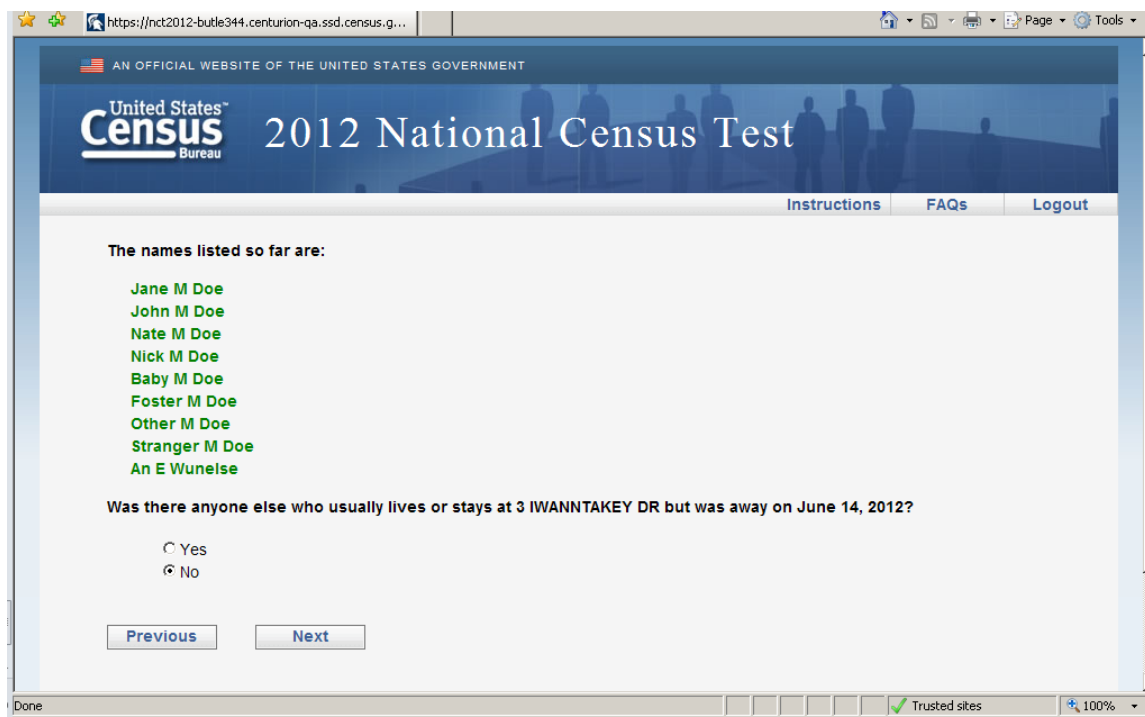


Figure A24: ADD3 after name is added in ADD2

No-> ADD4

Yes- Specify Name in ADD3

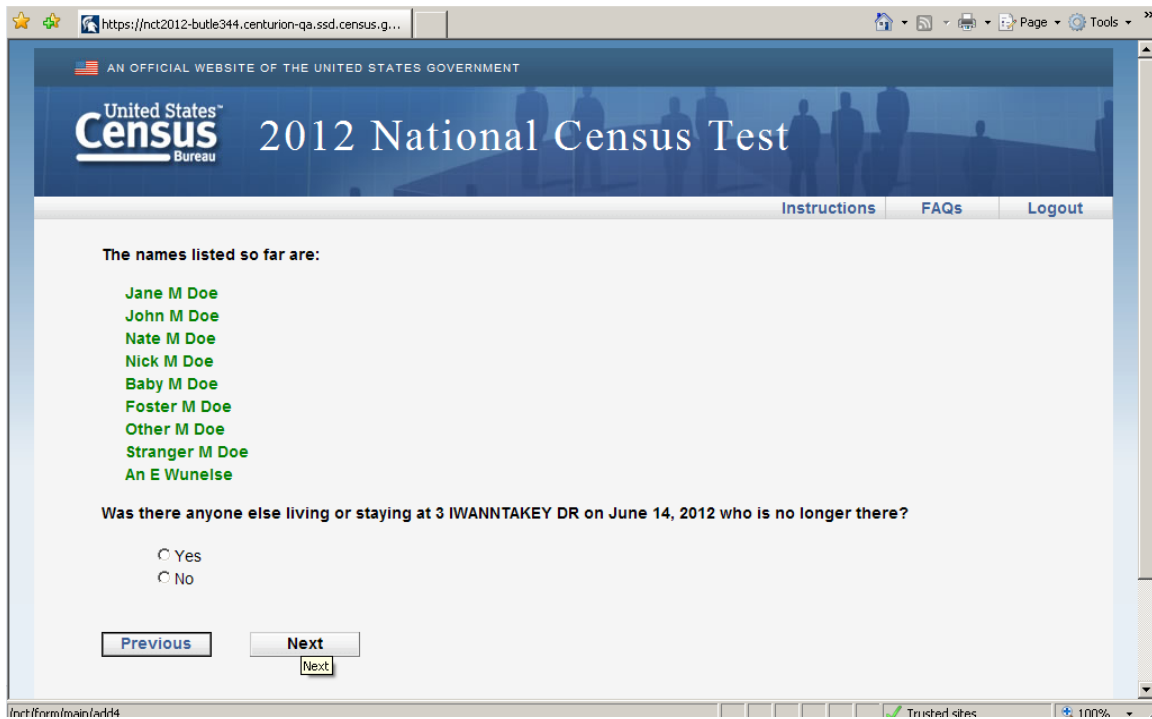


Figure A25: ADD4 (If “No” was selected in ADD3)

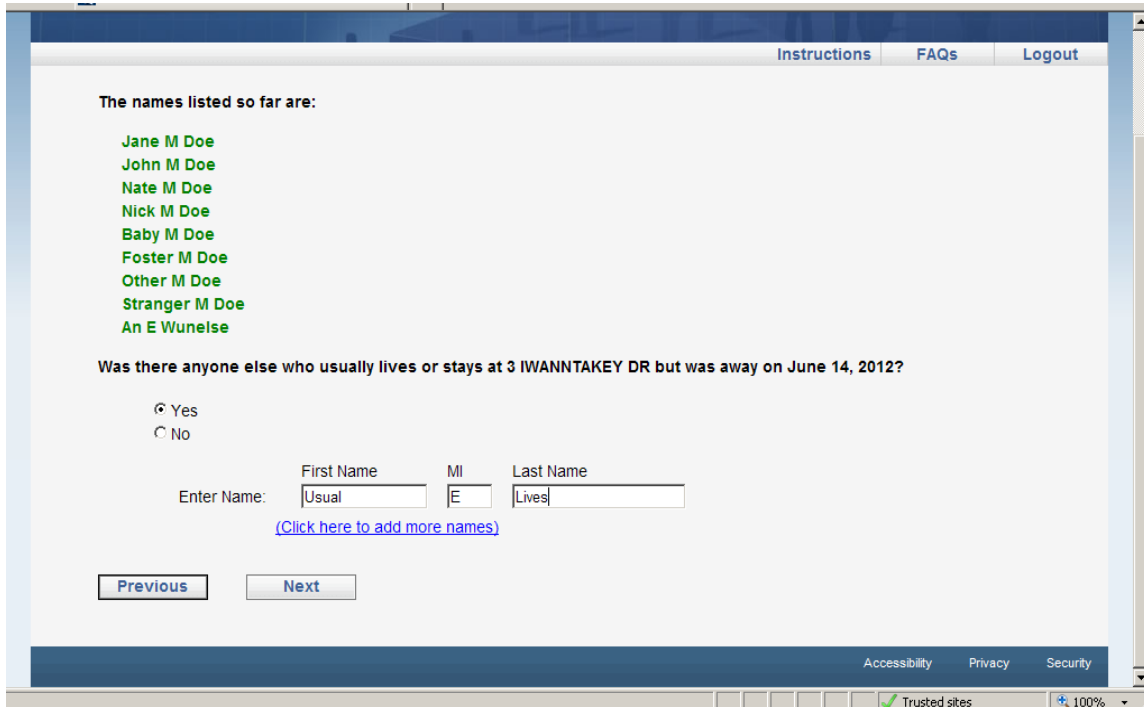


Figure A26: Specify names in ADD3 (if "Yes" was initially selected)

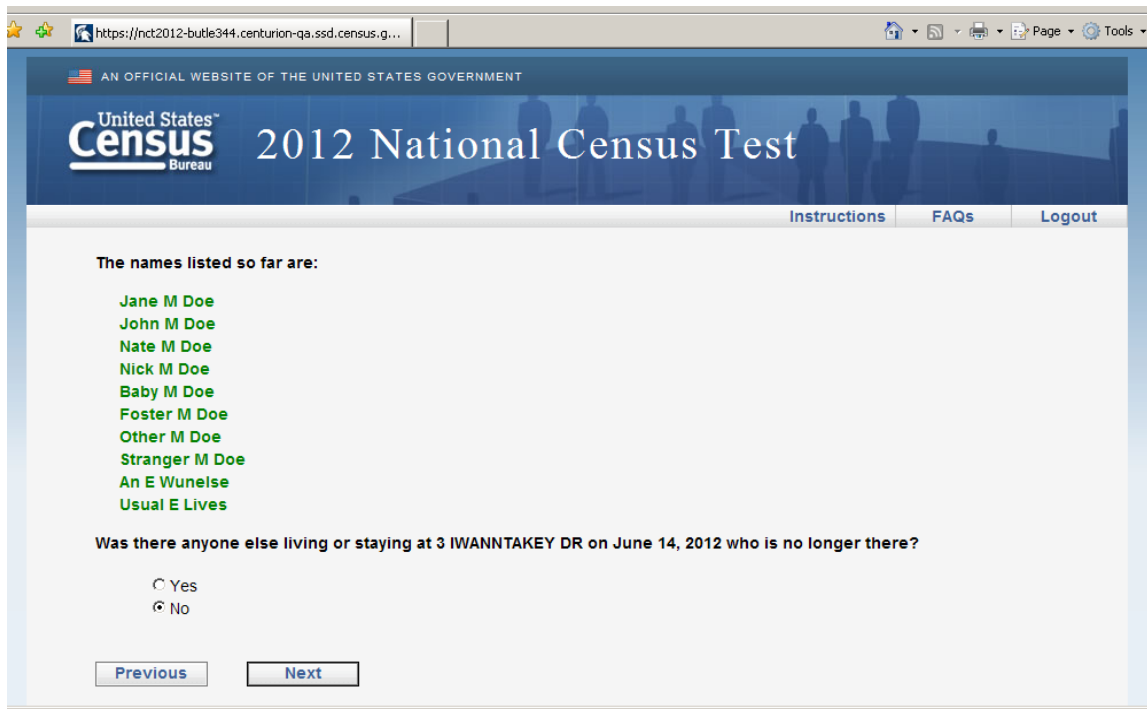


Figure A27: ADD4 with name added from ADD3

No->HOME

Yes-> Specify Name in ADD4



Figure A28: Specify Name in ADD4 (If "Yes" was initially selected)

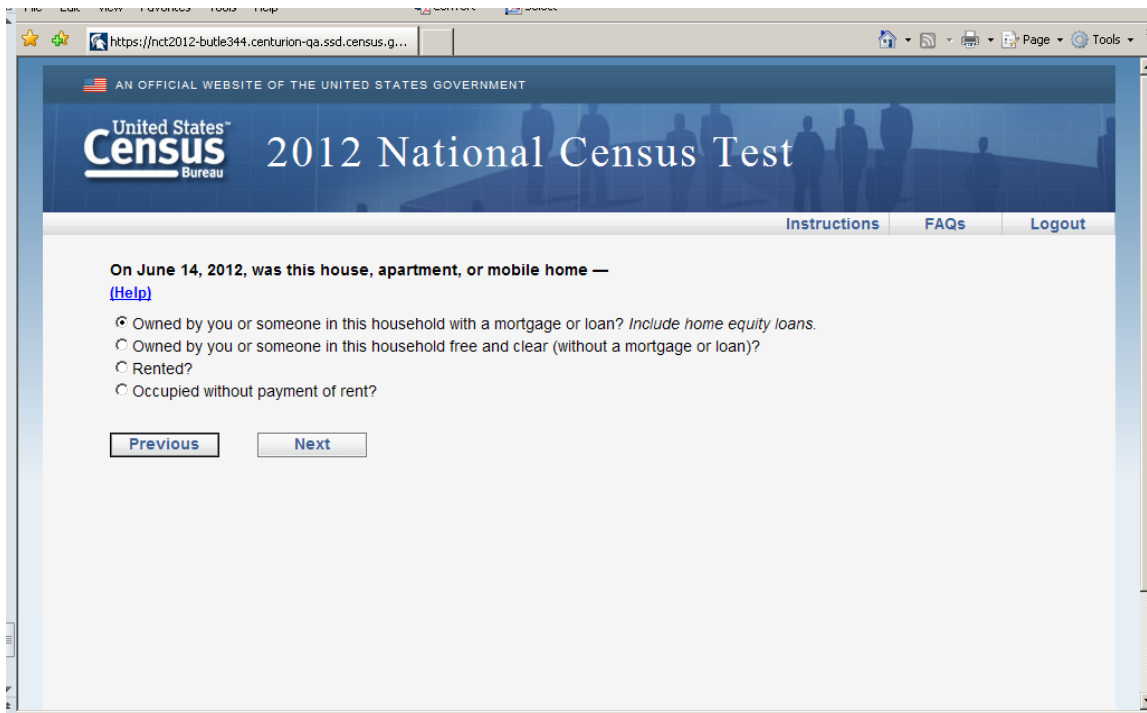


Figure A29: HOME

If owned or rented, it then asks who owns or rents this place. If “without payment” is checked, it skips to relationship.

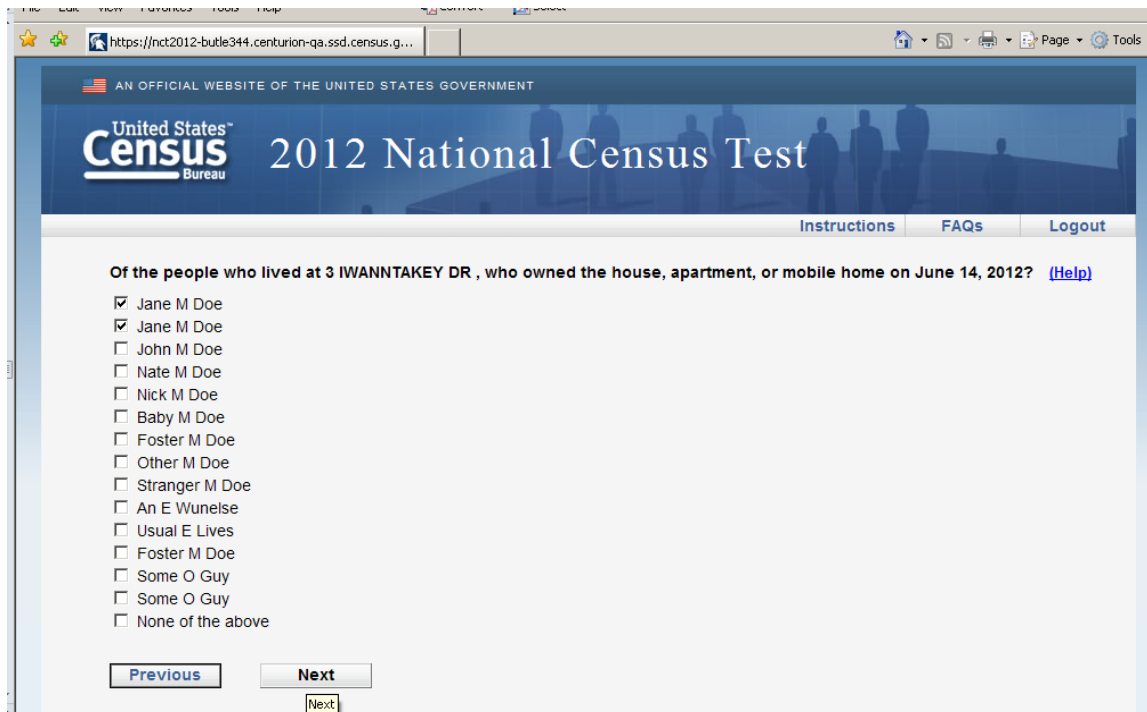


Figure A30: OWNER

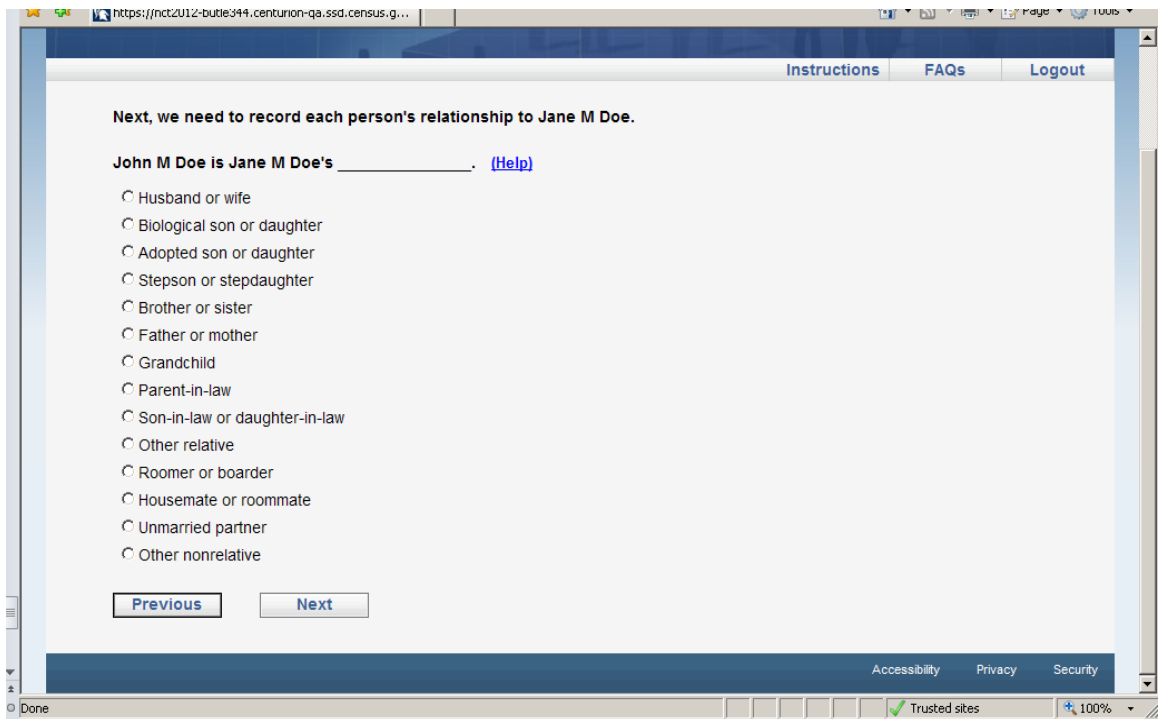


Figure A31: Relationship (asked for each person)

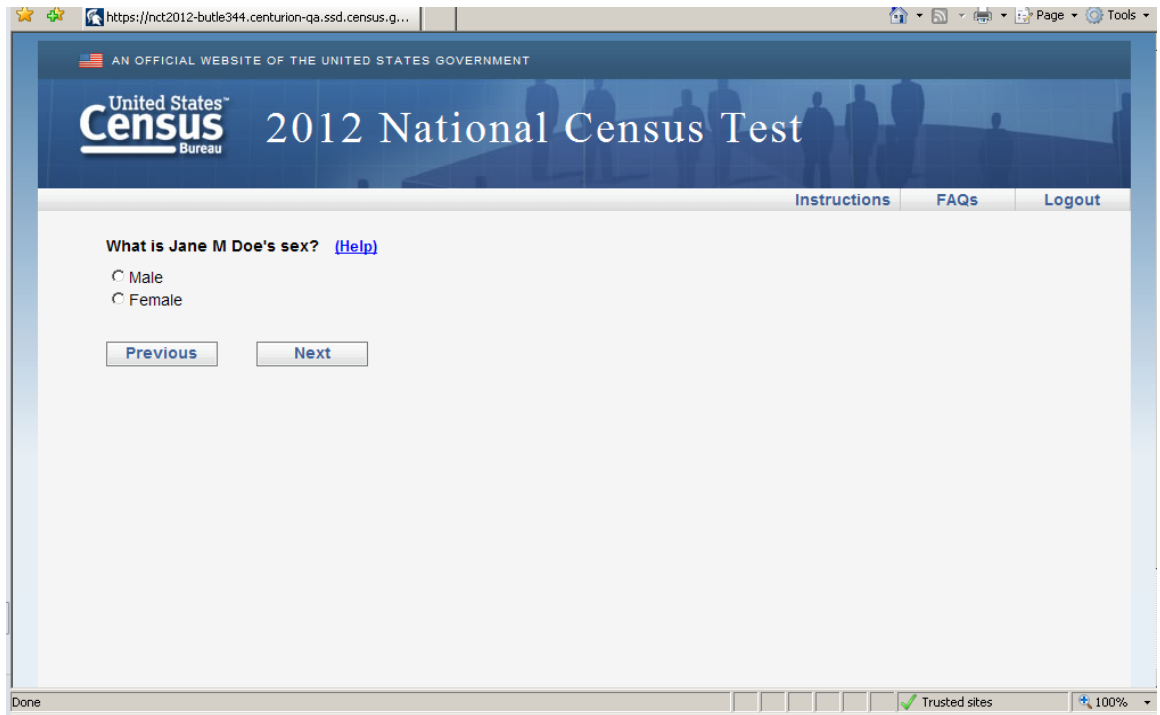


Figure A32: Sex (asked for each person)

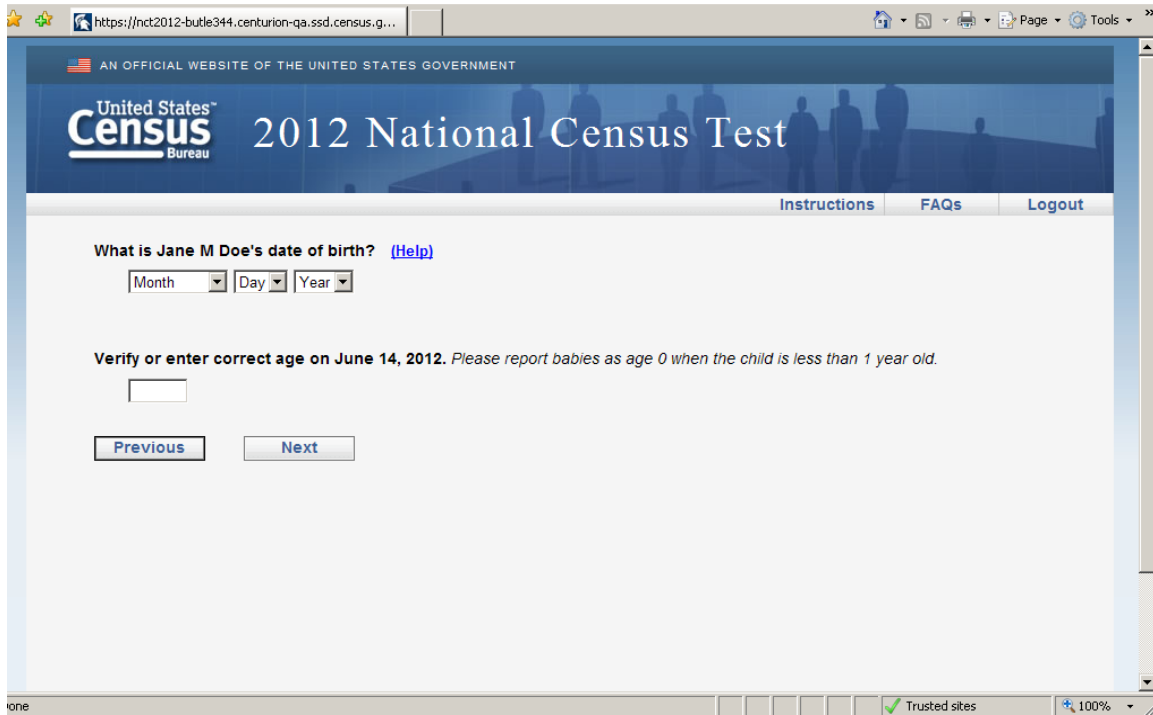


Figure A33: Age & DOB (asked for each person)

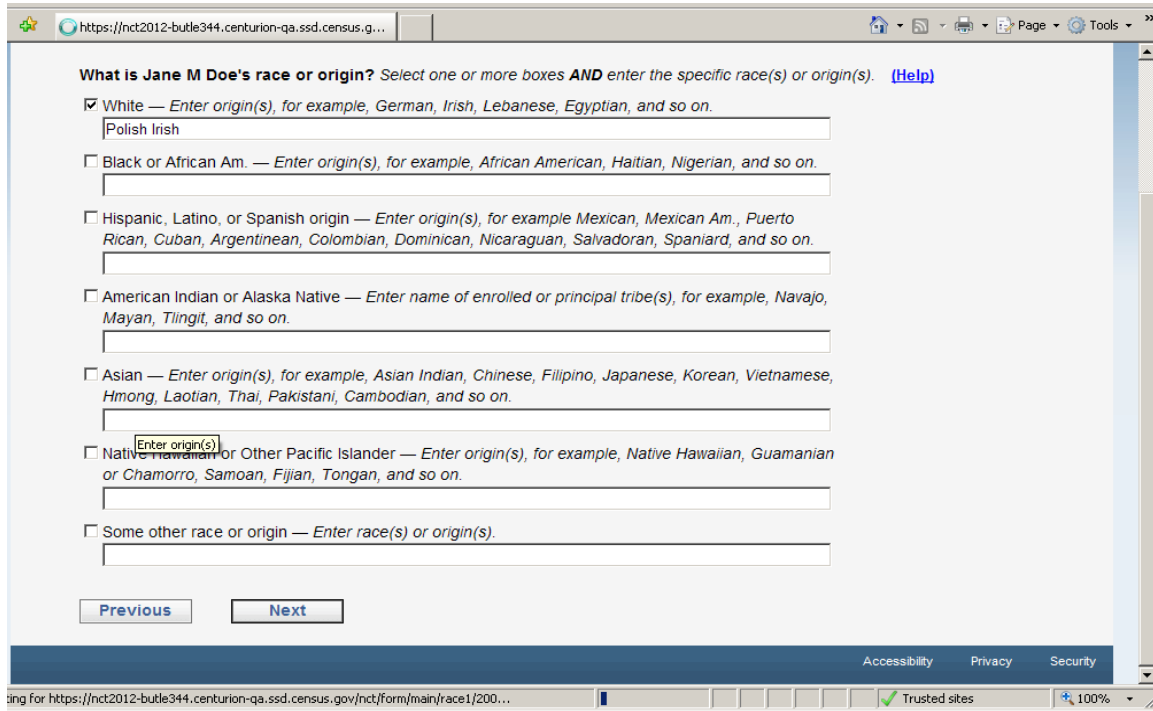


Figure A34: Race version 1 (RACE1)

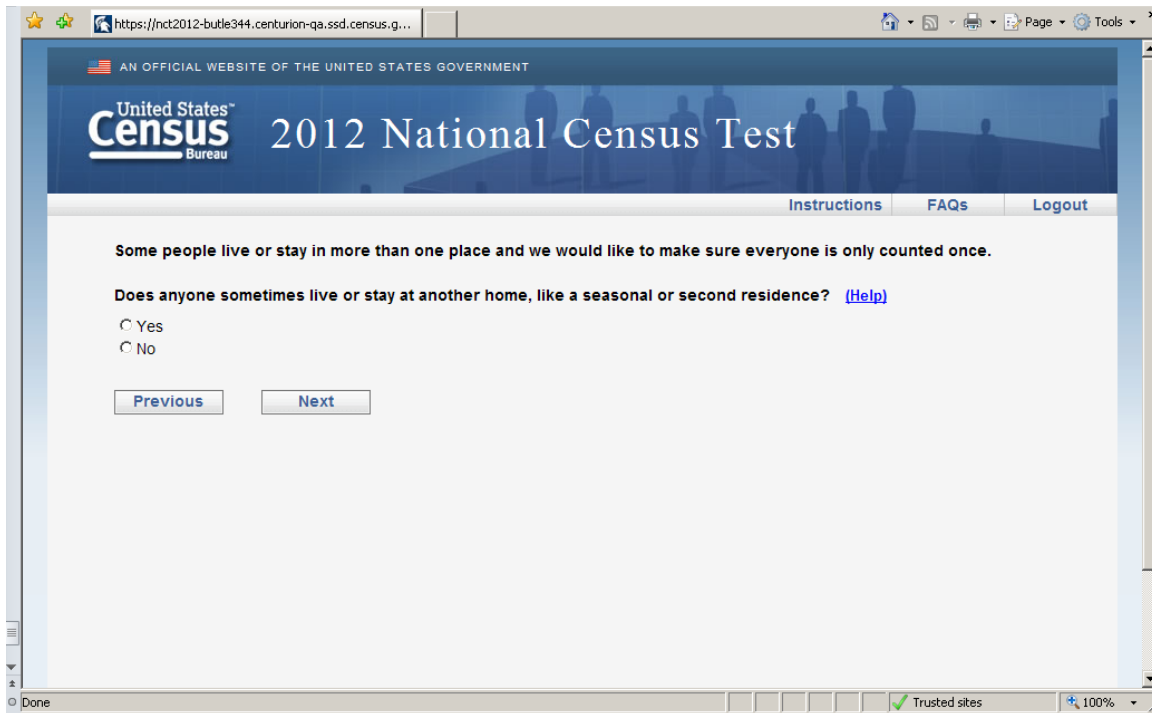


Figure A35: Delete_1_1

No -> Delete 2_1

Yes -> Delete 1_2

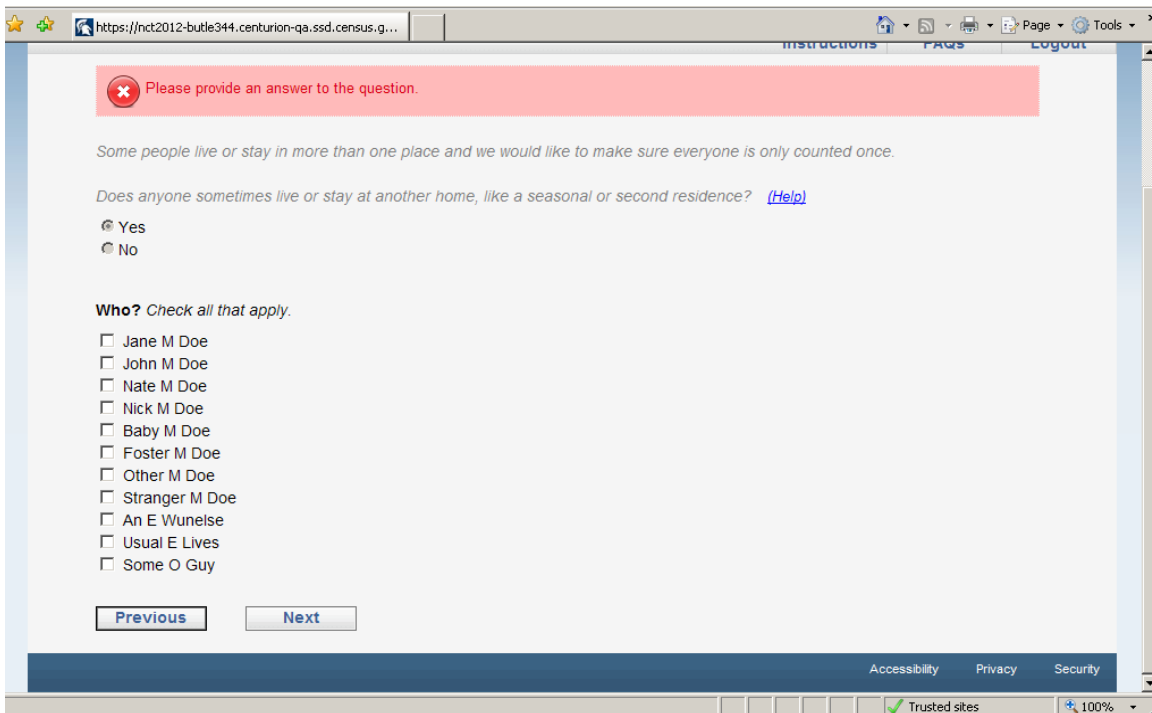


Figure A36: Error Message Delete 1_2

No one selected -> error message -> no one still selected -> Delete _2_1;

Yes/selecting someone -> Delete 2_1 (Stranger M Doe)

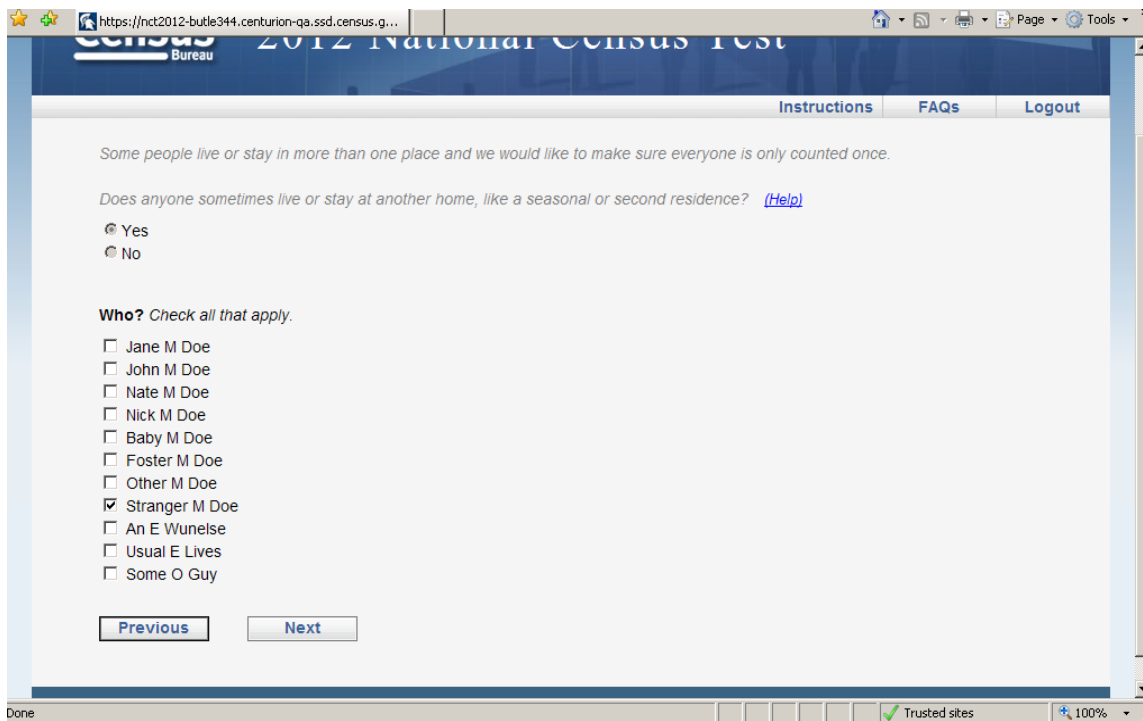


Figure A37: Delete_1_2

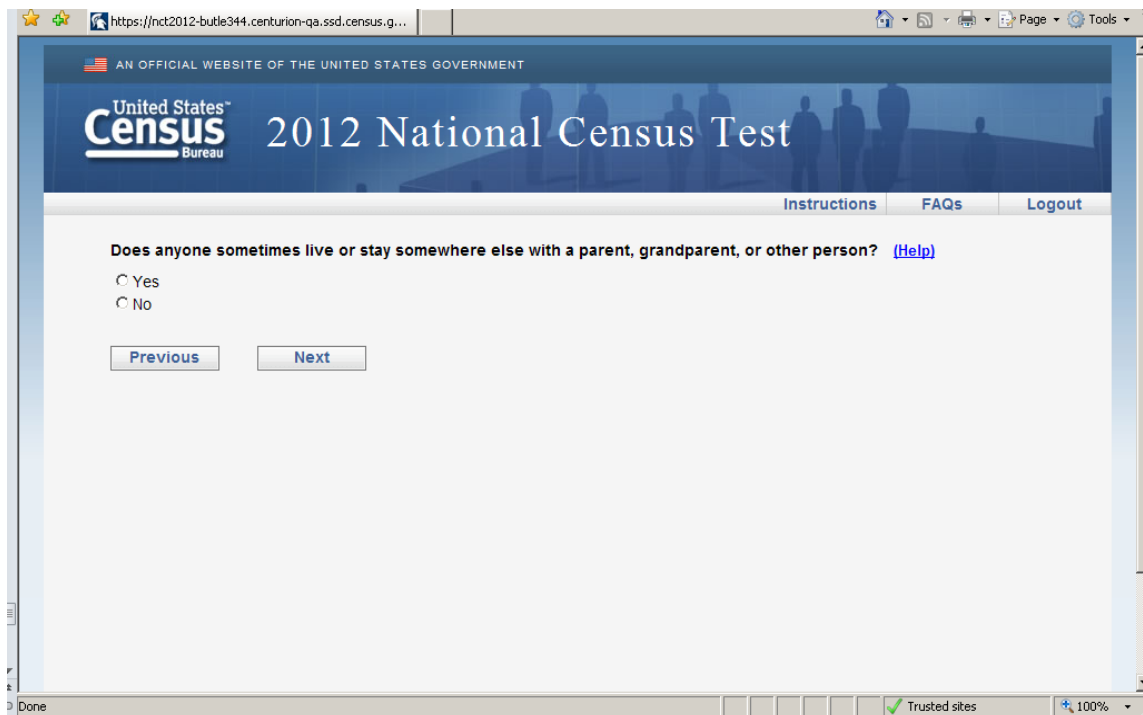


Figure A38: Delete_2_1

No -> Delete 3_1

Yes -> Delete 2_2

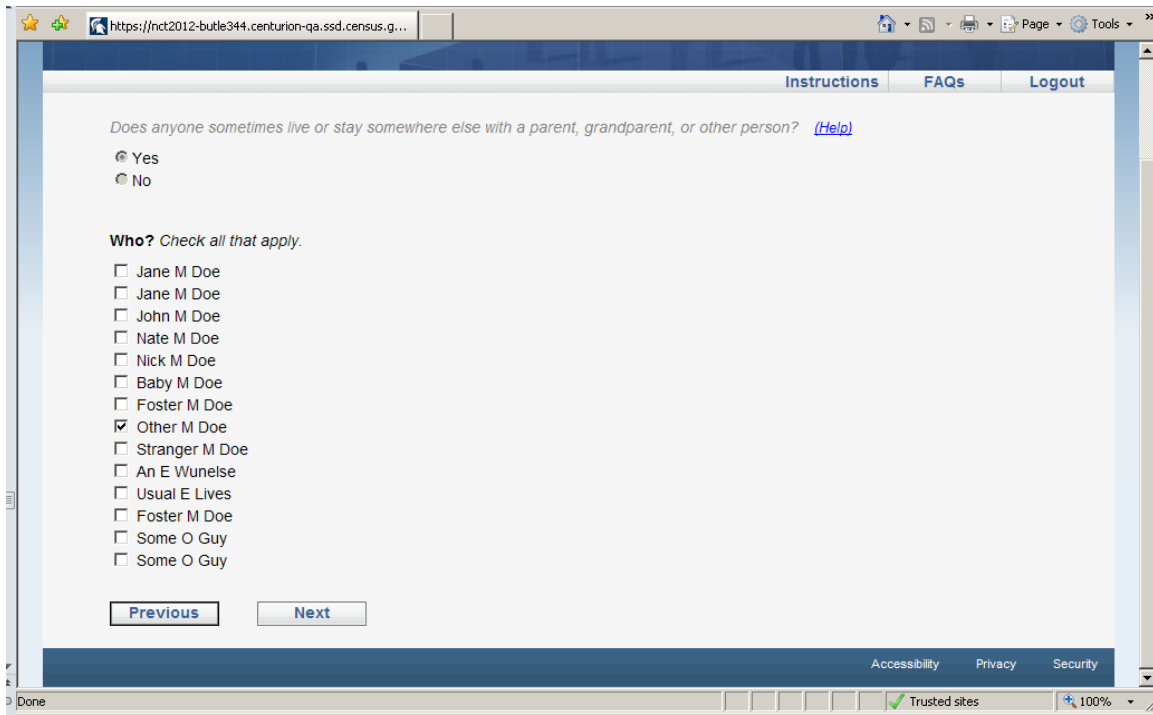


Figure A39: Delete 2_2

No one selected-> error message -> Delete 3_1
 Someone selected (Other M Doe) -> Delete 3_1

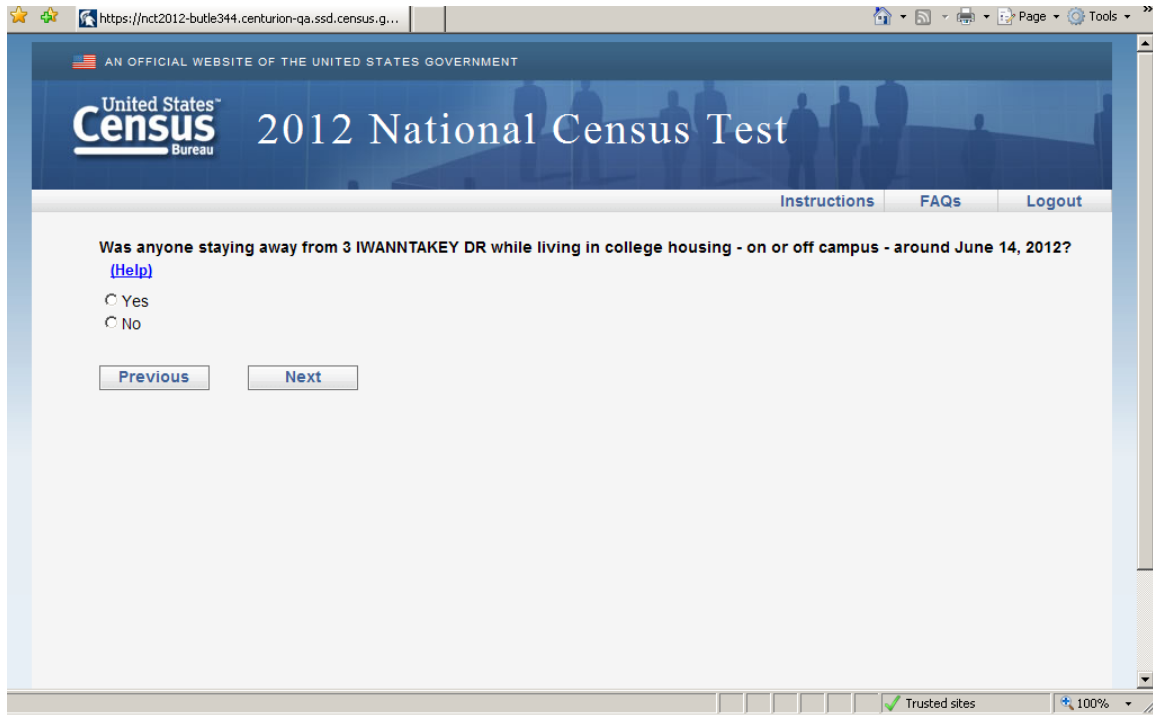


Figure A40: Delete 3_1

No -> Delete 4_1
 Yes -> Delete 3_2

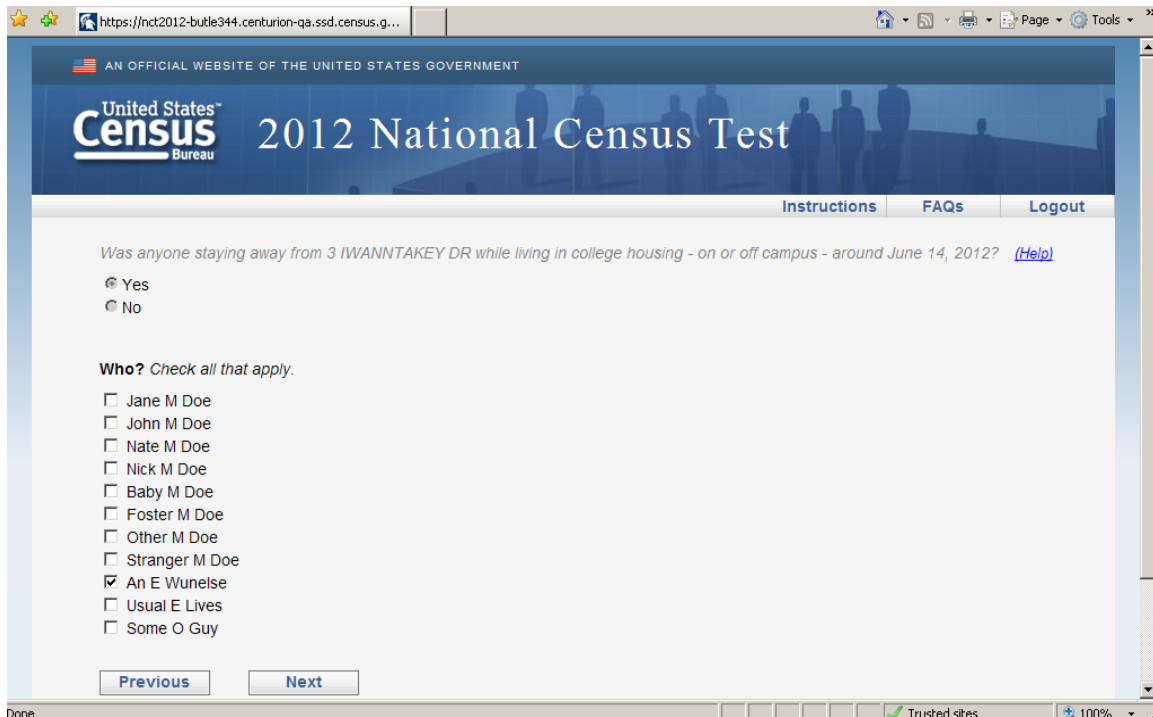


Figure A41: Delete 3_2

No one selected -> error message -> Delete 4_1
 Someone selected (An E Wunelse) -> Delete 4_1

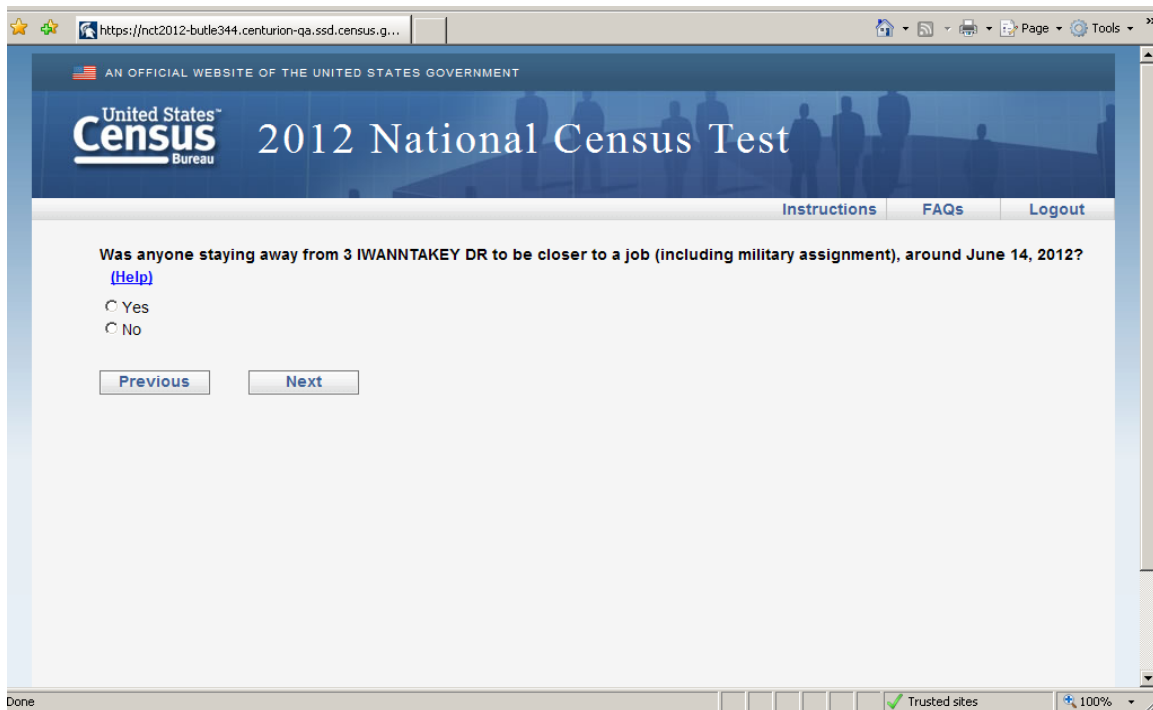


Figure A42: Delete 4_1

No -> Delete 5_1
 Yes -> Delete 5_2

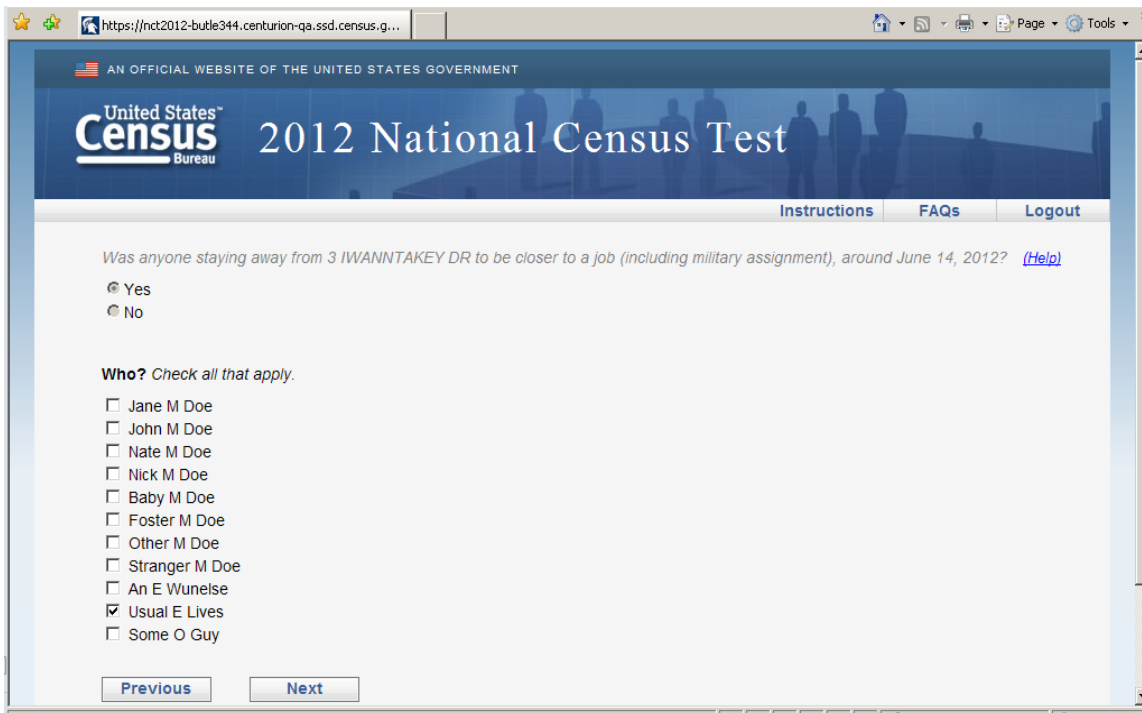


Figure A43: Delete 5_2

No one selected-> error message -> Delete 5_1
 Someone selected (Usual E Lives) -> Delete 5_1

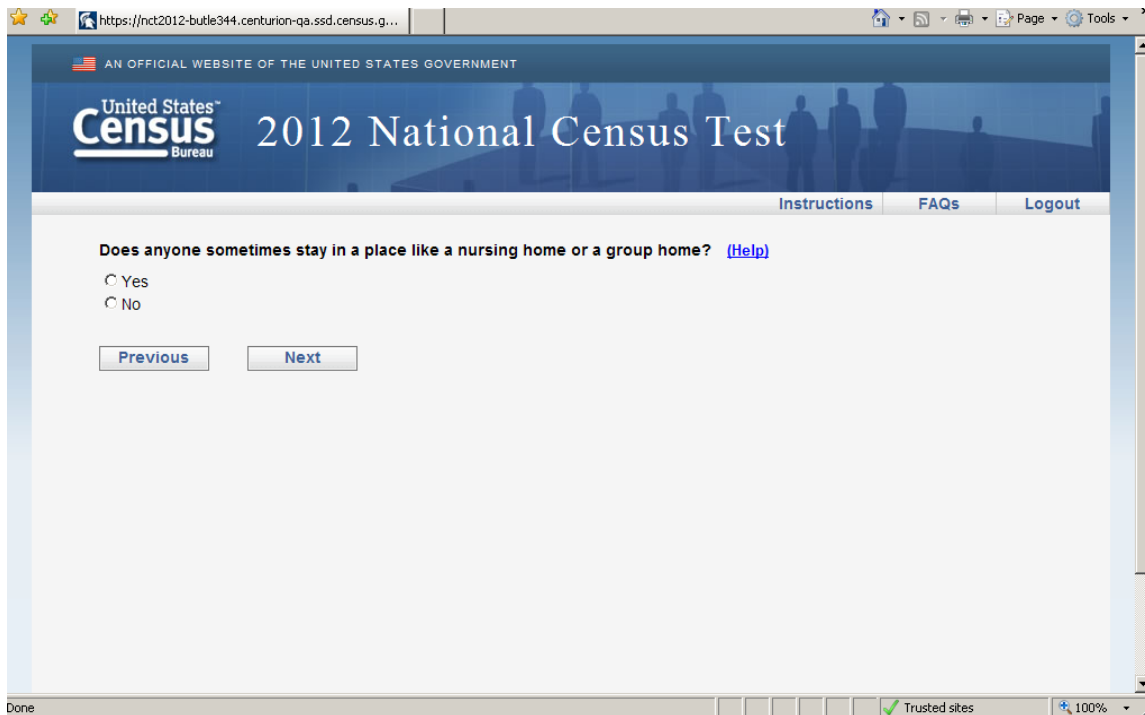


Figure A44: Delete 5_1

No -> Delete 6_1
 Yes -> Delete 5_2

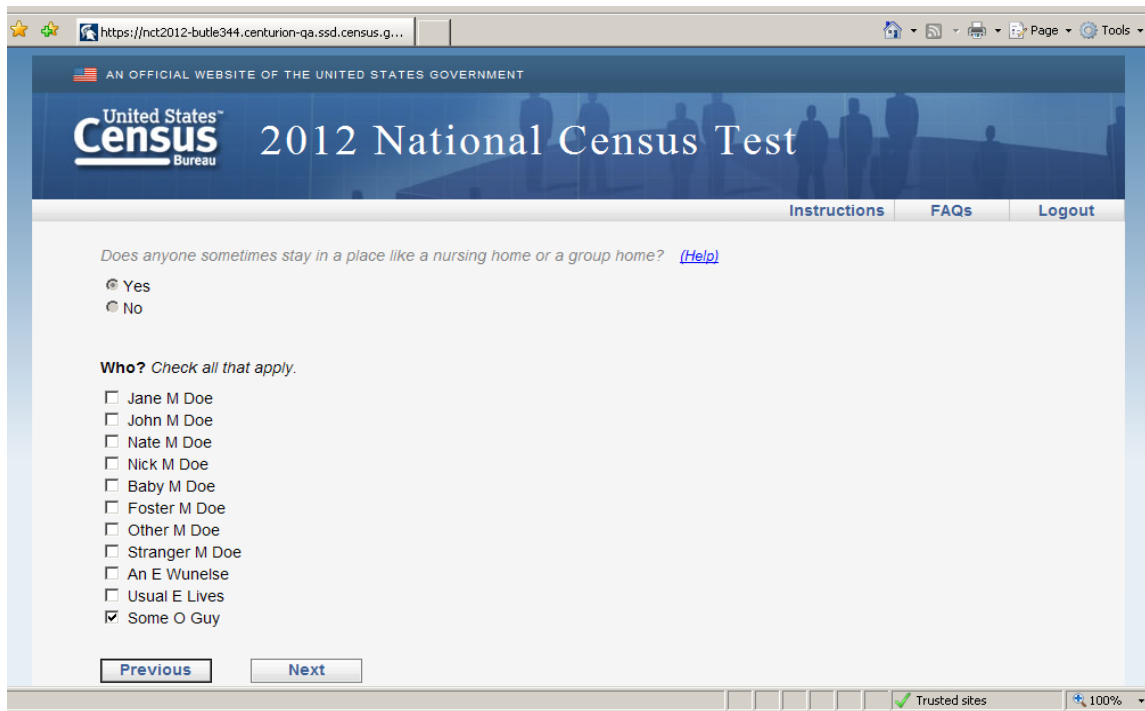


Figure A45: Delete 5_2

No one selected -> error message -> Delete 6_1
Someone selected (Usual E Lives) -> Delete 6_1

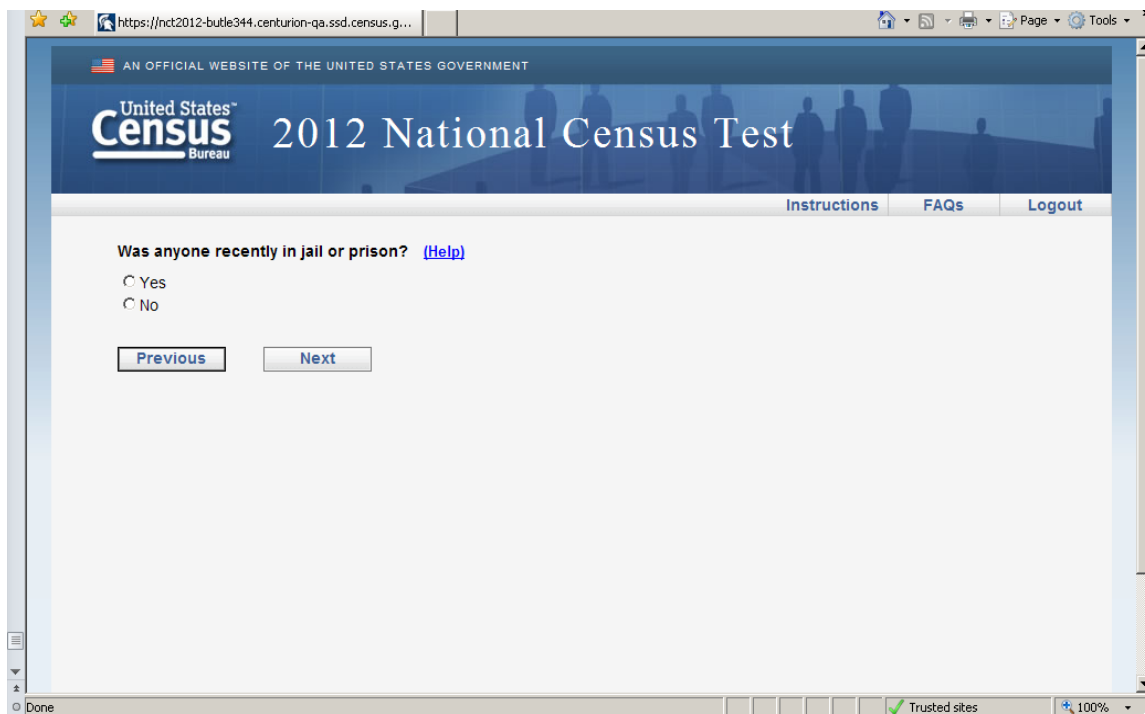


Figure A46: Delete 6_1

No -> Delete 7_1
Yes -> Delete 6_2

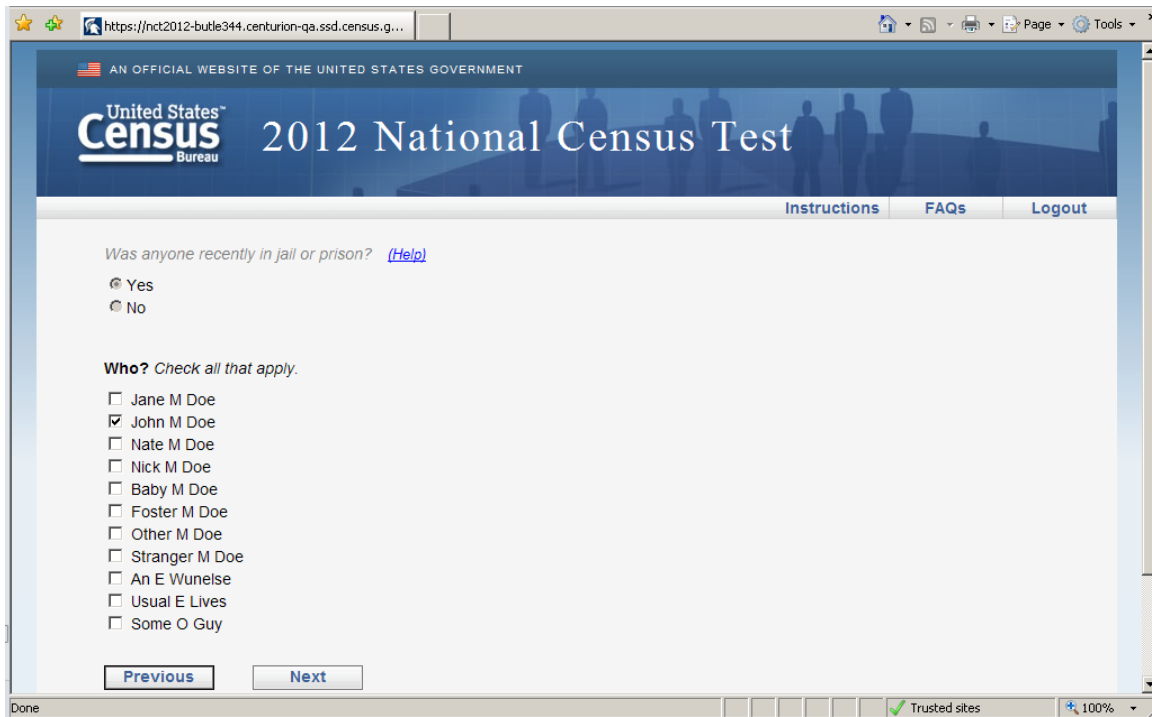


Figure A47: Delete 6_2

No one selected-> error message -> Delete 7_1

Someone selected (John M Doe) -> Delete 7_1

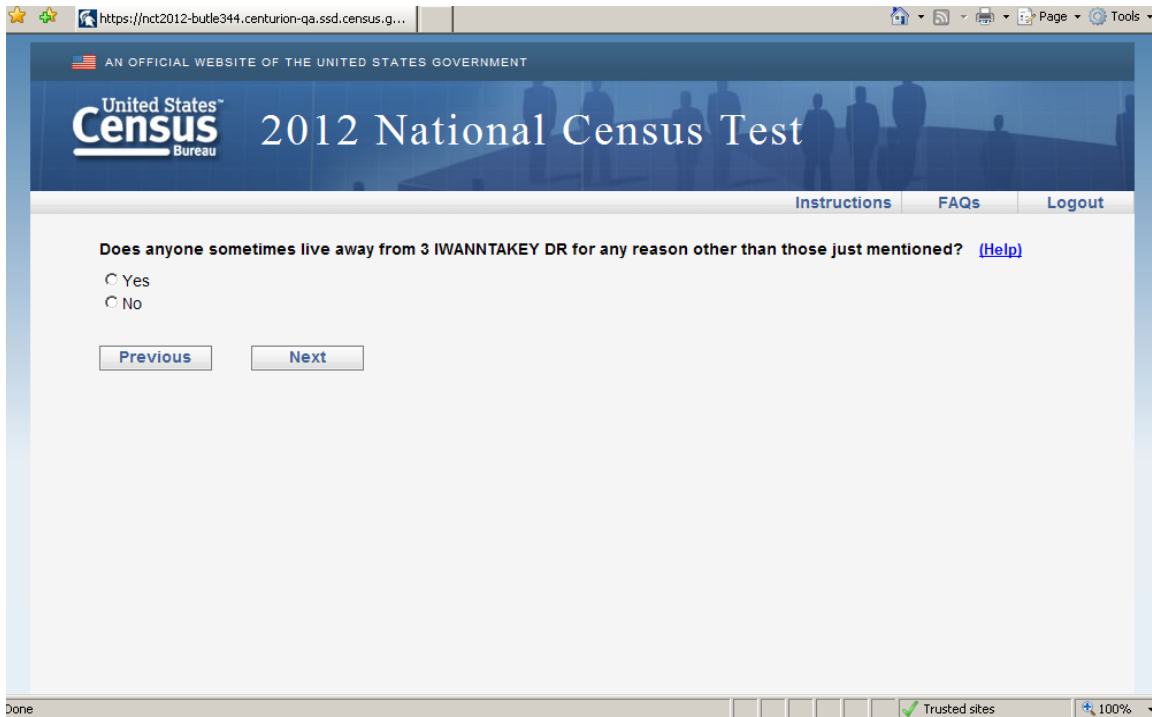


Figure A48: Delete 7_1

No -> FULLSTAY

Yes -> Delete 7_2 -> FULLYSTAY

Does anyone sometimes live away from 3 IWANNATAKEY DR for any reason other than those just mentioned? [\(Help\)](#)

Yes
 No

Who? Check all that apply.

- Jane M Doe
- Jane M Doe
- John M Doe
- Nate M Doe
- Nick M Doe
- Baby M Doe
- Foster M Doe
- Other M Doe
- Stranger M Doe
- An E Wunelse
- Usual E Lives
- Foster M Doe
- Some O Guy
- Some O Guy

For what reason?

Circus

[Previous](#) [Next](#)

[Instructions](#) [FAQs](#) [Logout](#)

Please provide the full address where Jane M Doe sometimes lived or stayed around June 14, 2012 for another reason. Fill in as much information as you know. [\(Help\)](#)

Number and Street Apt/Unit #
 City
 State Zip
 Country

If there is no street address or if this is a facility, please type a description in the box below.

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Accessibility Privacy Security

Figure A49: FULLSTAY (Each person who had another place to stay for any of the reasons in the ADD series would get the corresponding version this screen.)

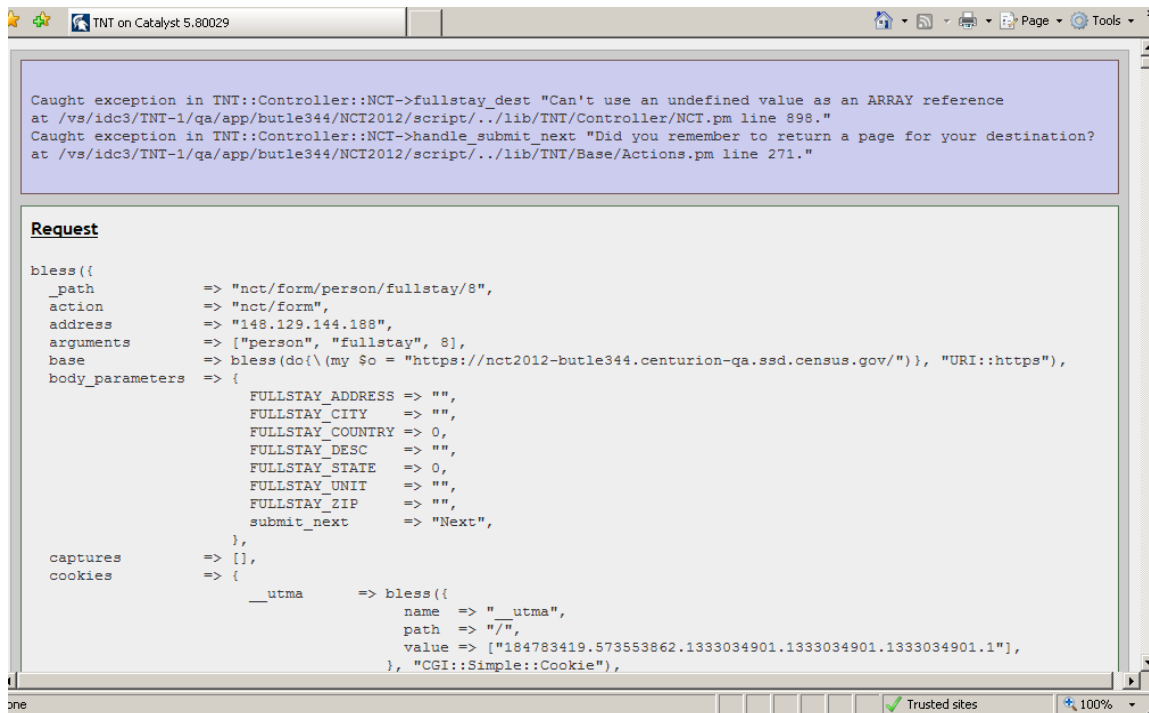


Figure A50: Error Message when not entering anything for FULLSTAY 6/26/12 1:21 PM. I could not get past this screen and had to change the response to “No” to continue after logging out and back in again.

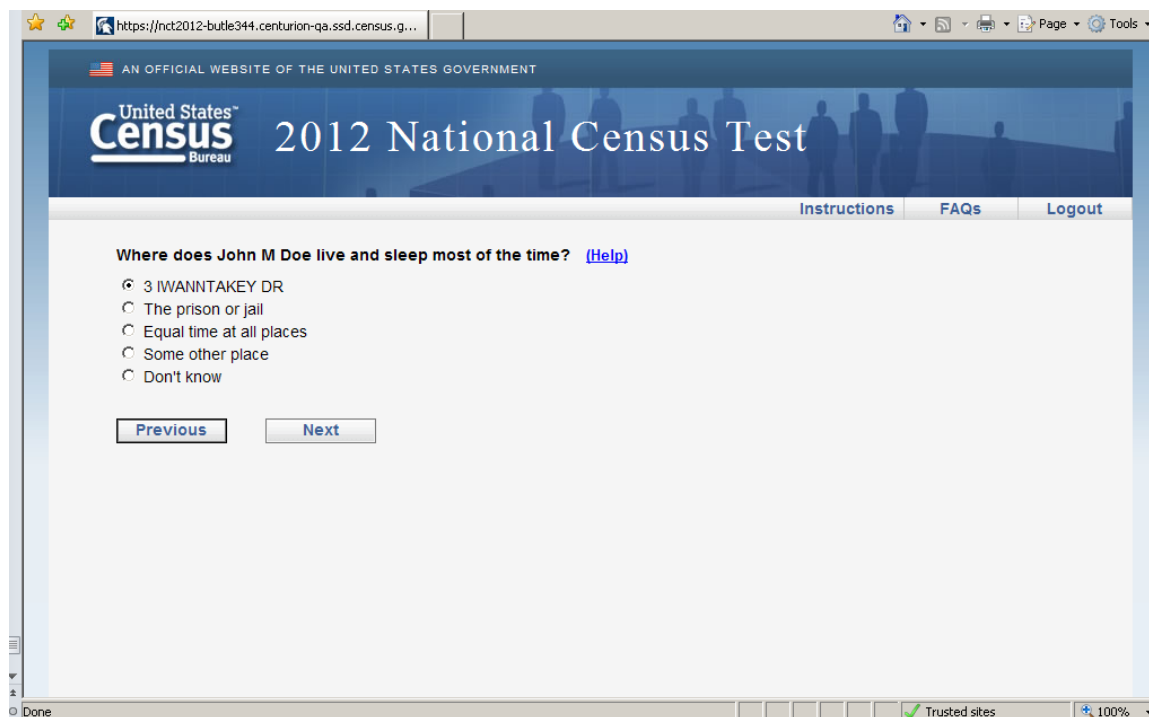


Figure A51: MOST (sample address selected)

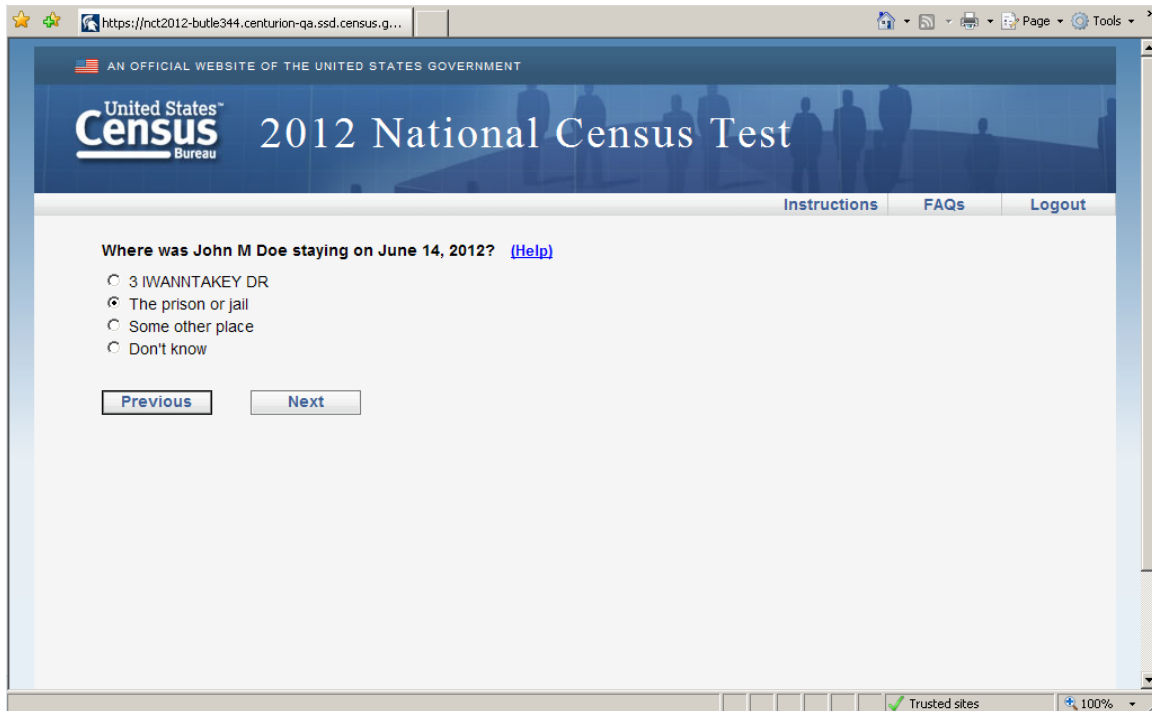


Figure A52: WHERE (Census Day) Jail Selected

Selected the sample address for MOST (MOTT) and the other address for Census Day for each of the people that were selected during the DELETE series of questions.

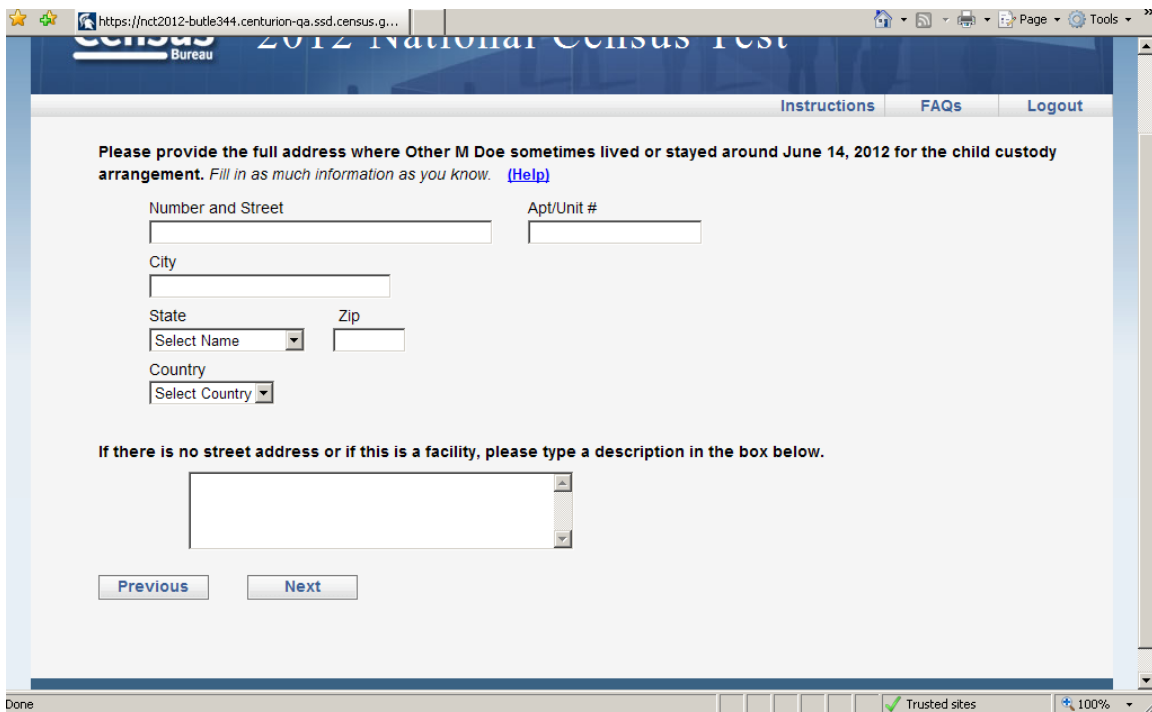


Figure A53: Another WHERE screen

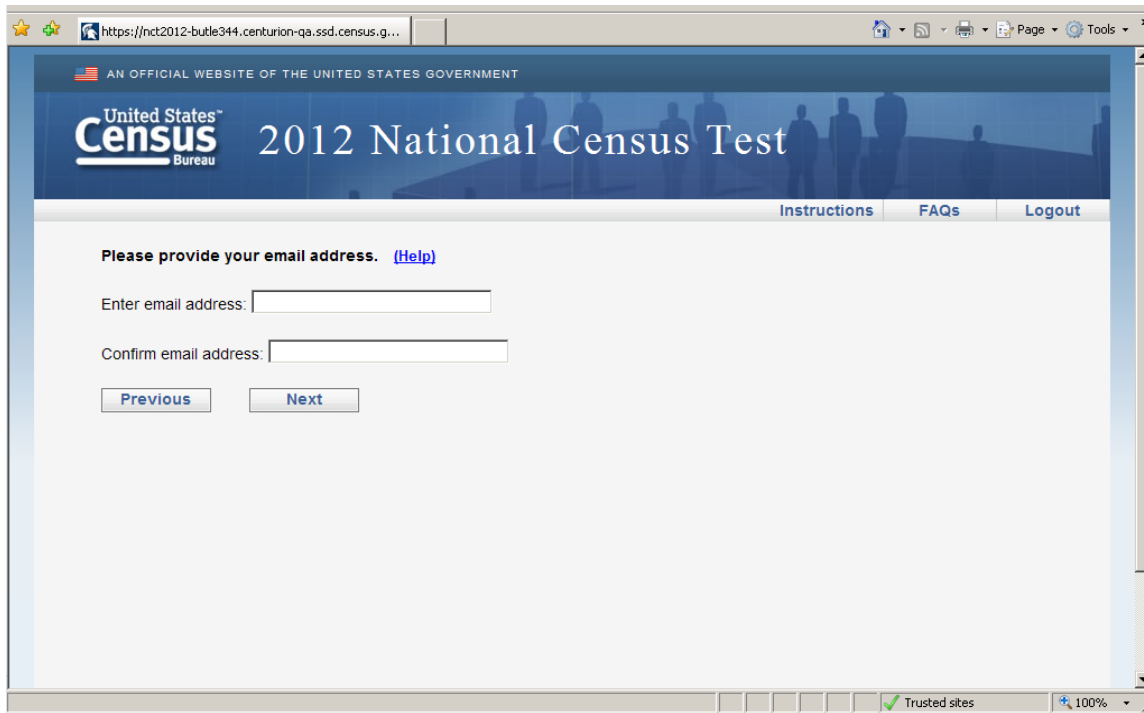


Figure A54: EMAIL

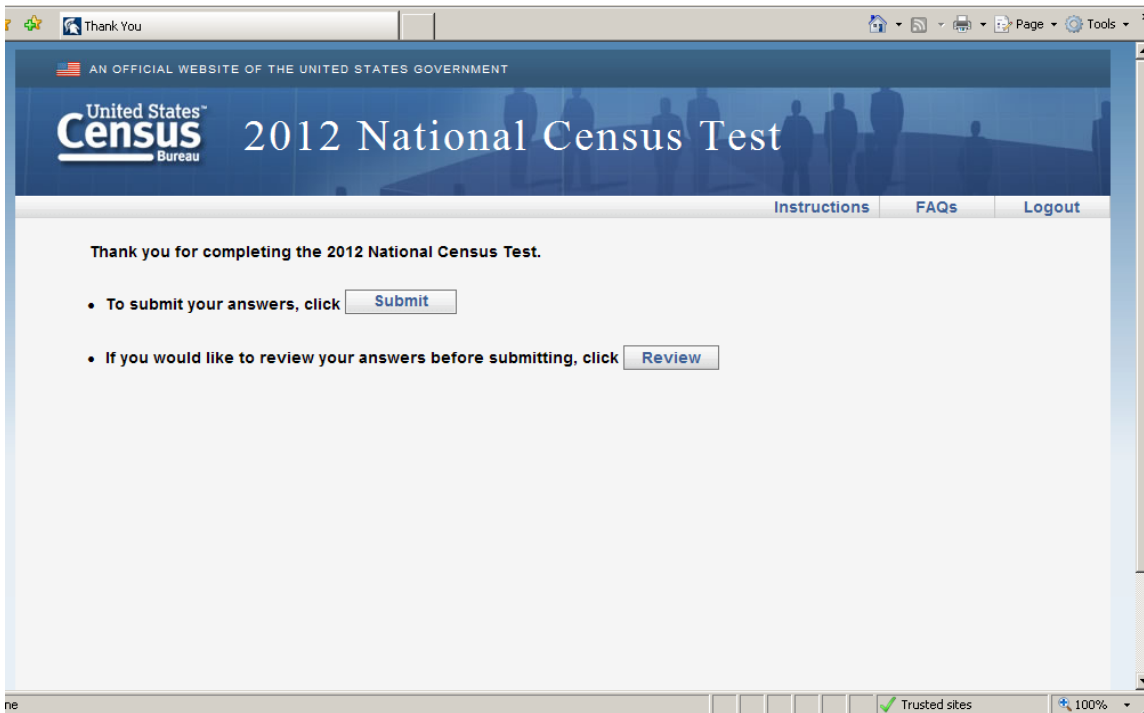


Figure A55: SUMMARY

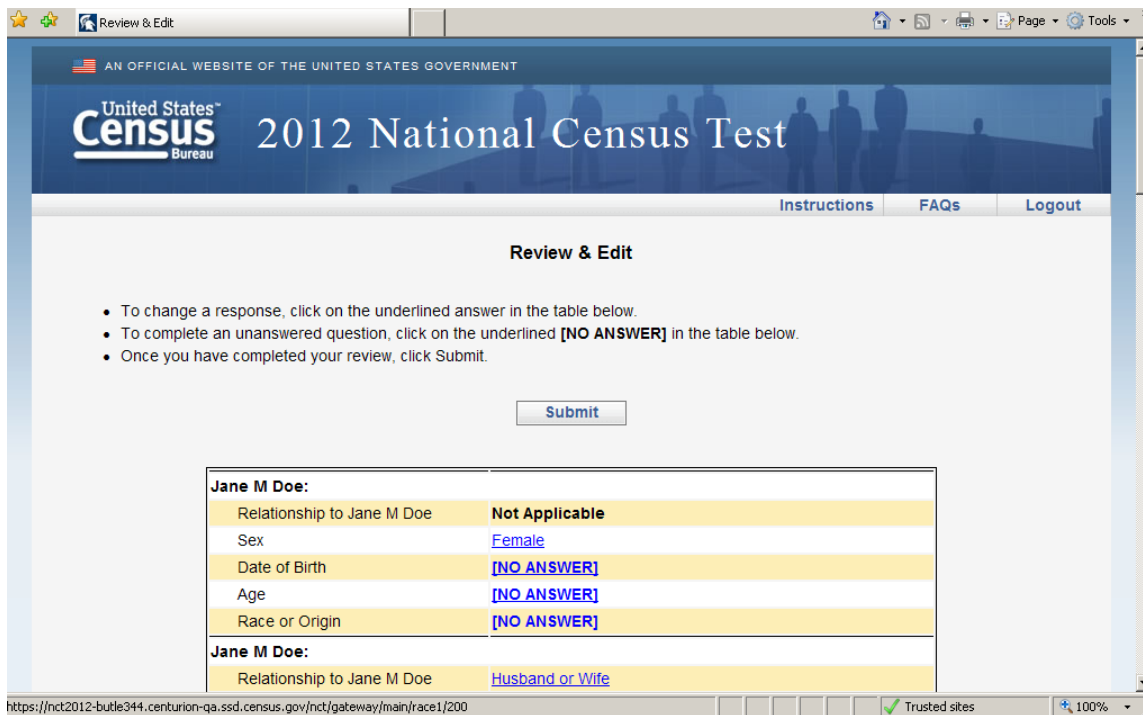


Figure A56: Review & Edit top

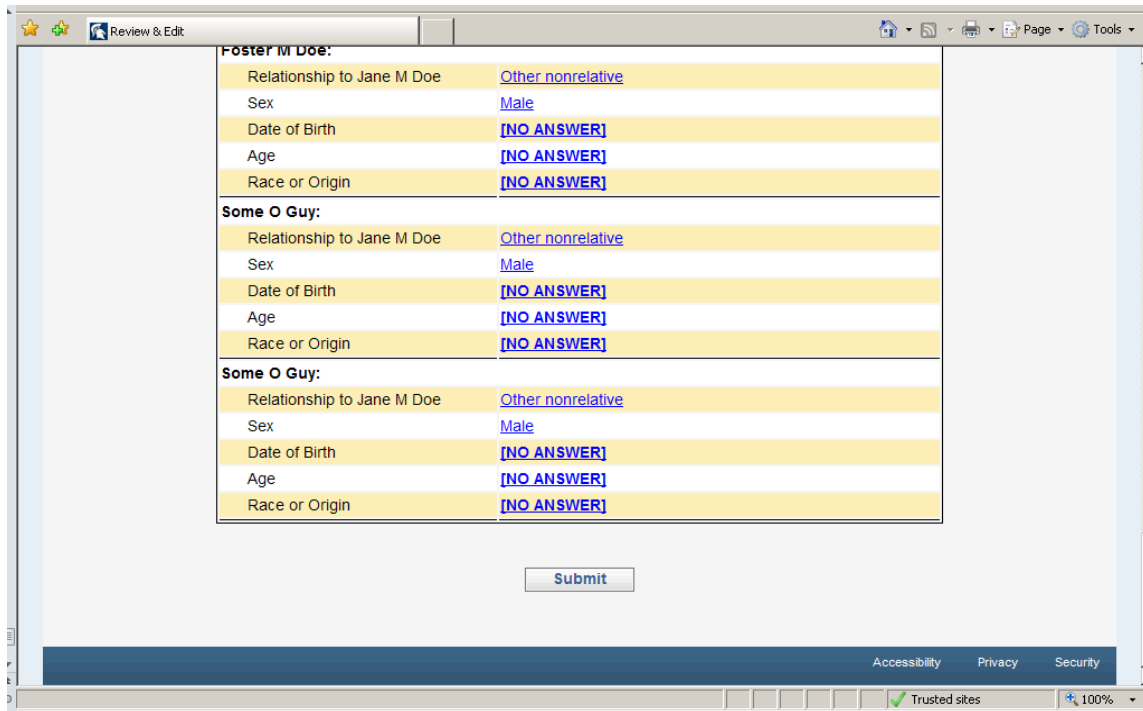


Figure A57: Review & Edit Bottom

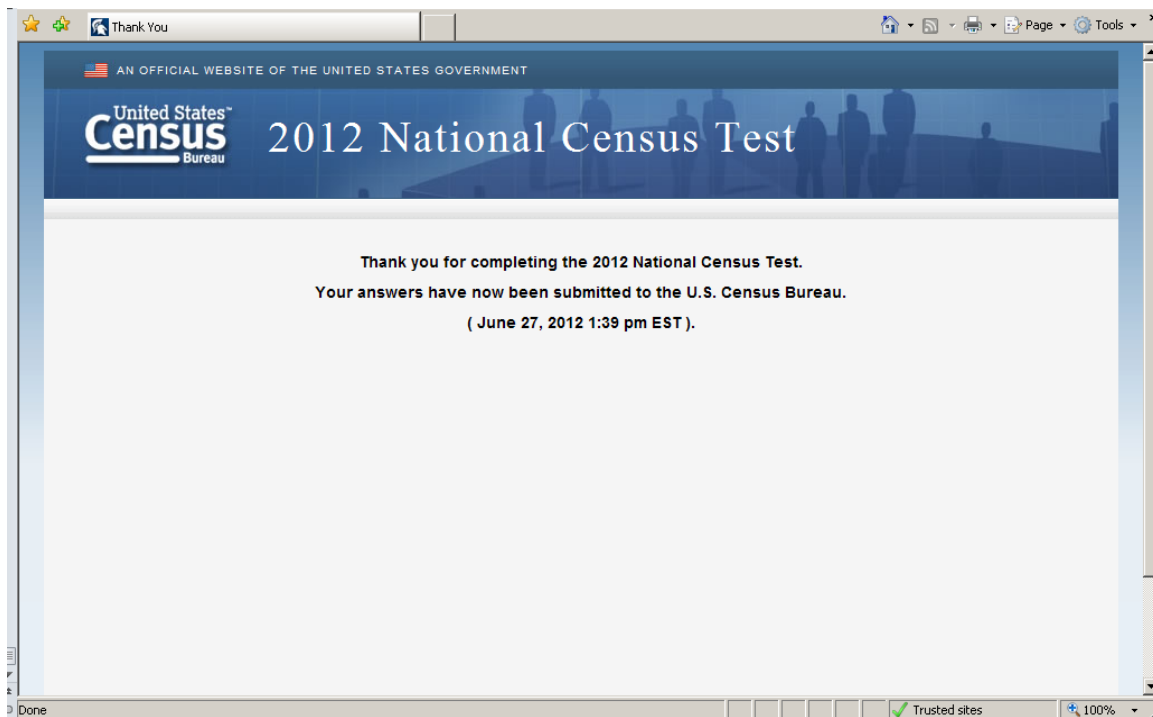


Figure A58: Thank You

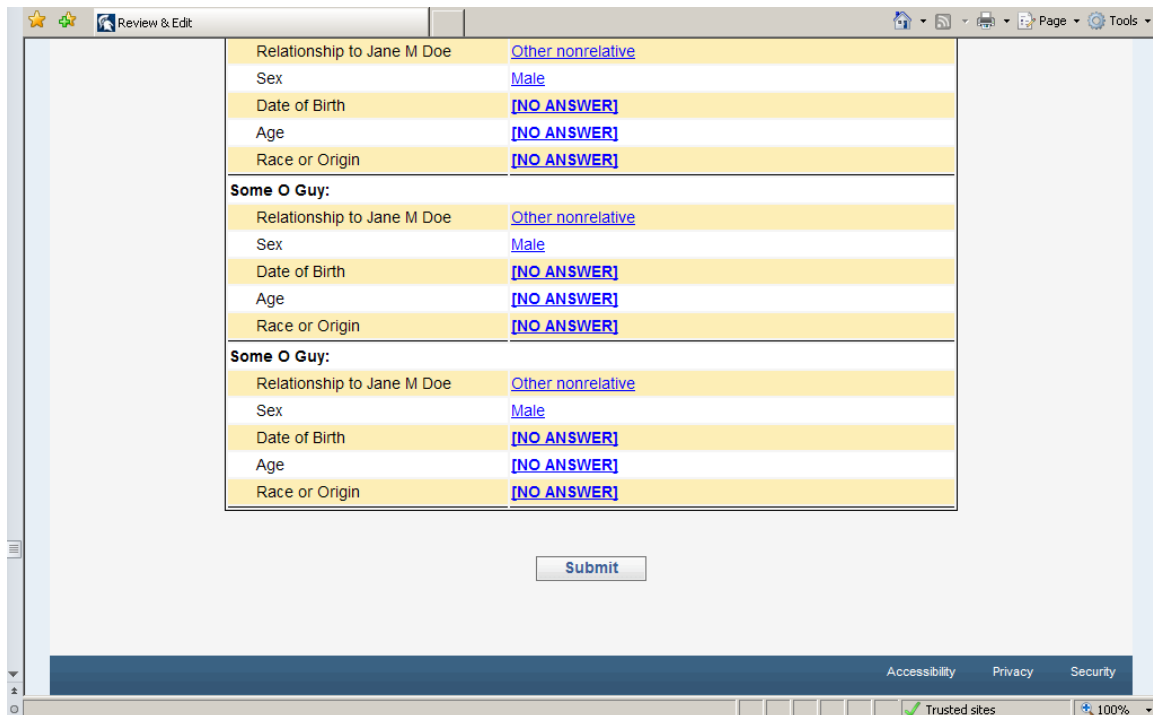


Figure A59: Hitting the Browser BACK button let me back into the survey (review screen)

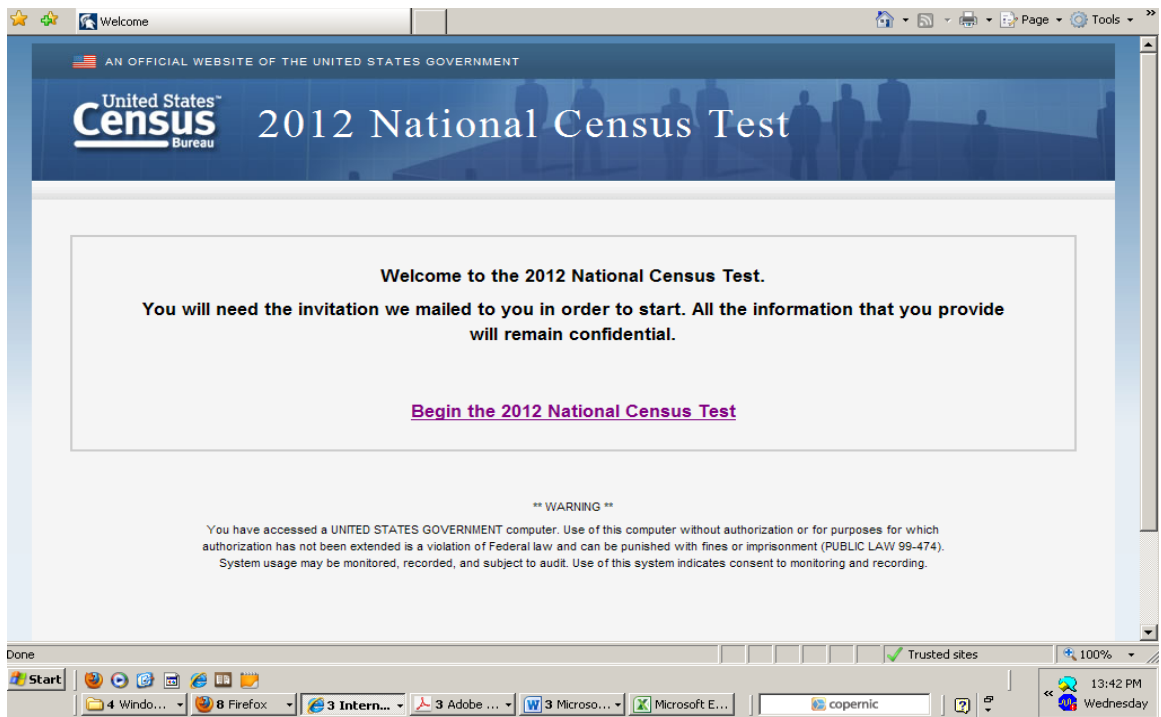


Figure A60: Hitting SUBMIT again took me back to the Welcome page

DIFFERENT VERSION OF COVERAGE PATH

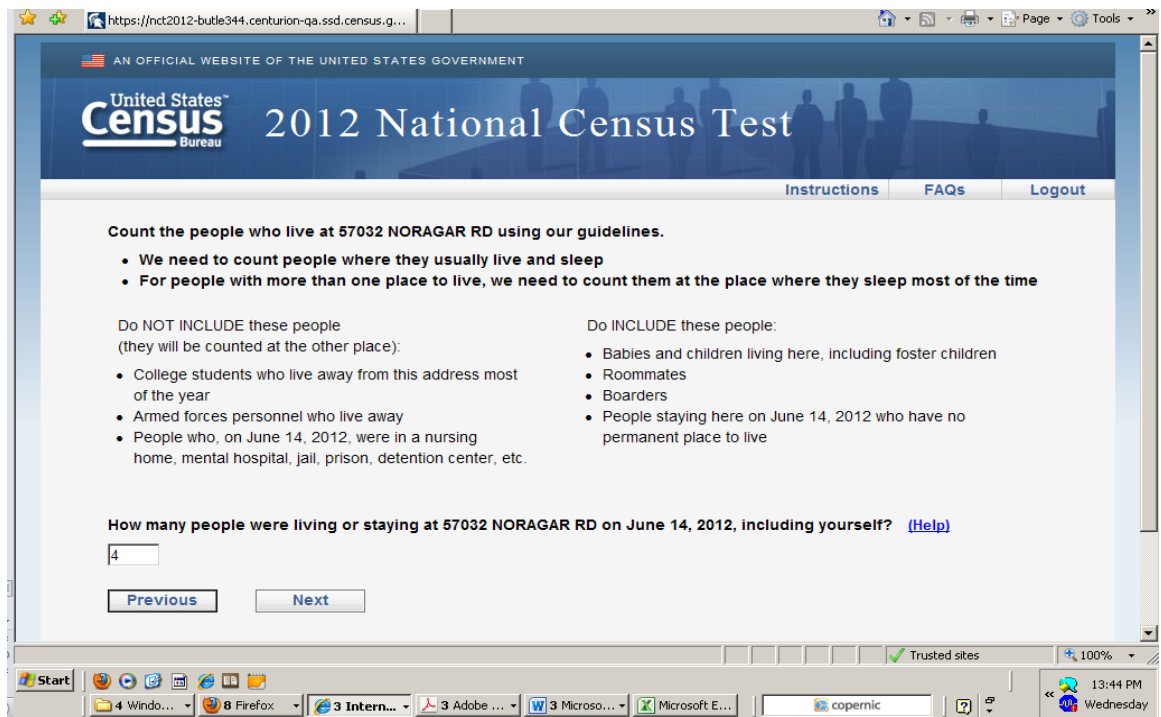


Figure A61: POPCOUNT- contains long links that crashed the survey the only time one was clicked during testing. The whole link is not visible when the help box pops up.

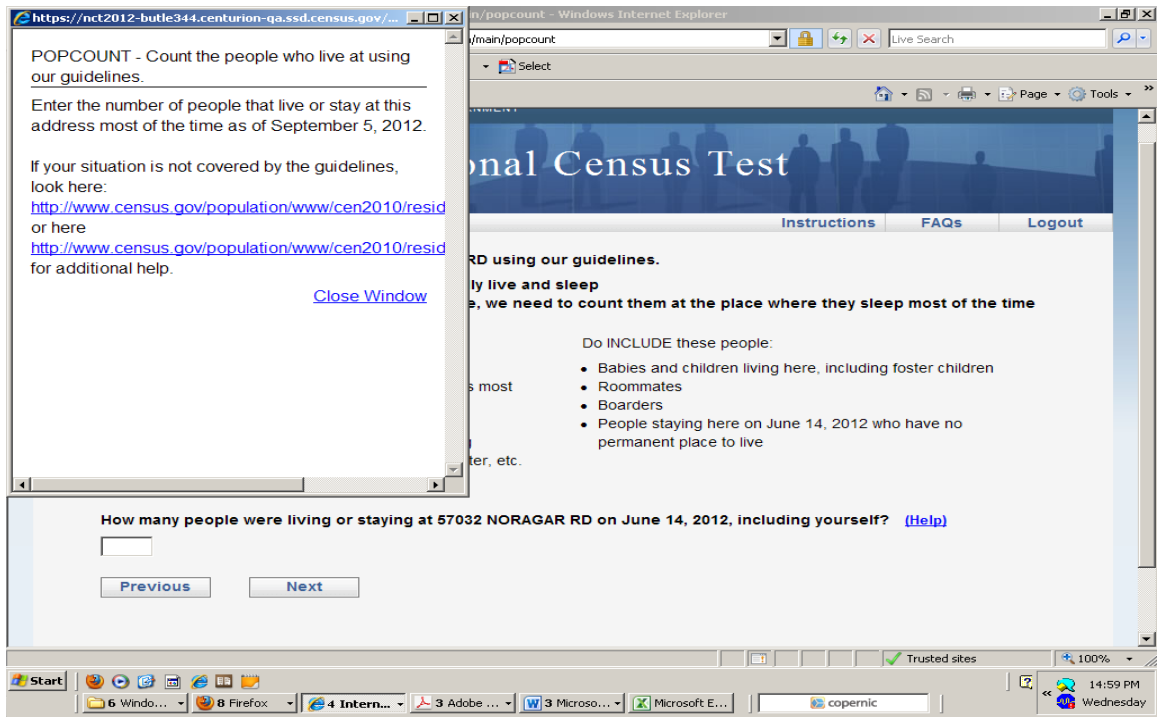


Figure A62: POPCOUNT HELP

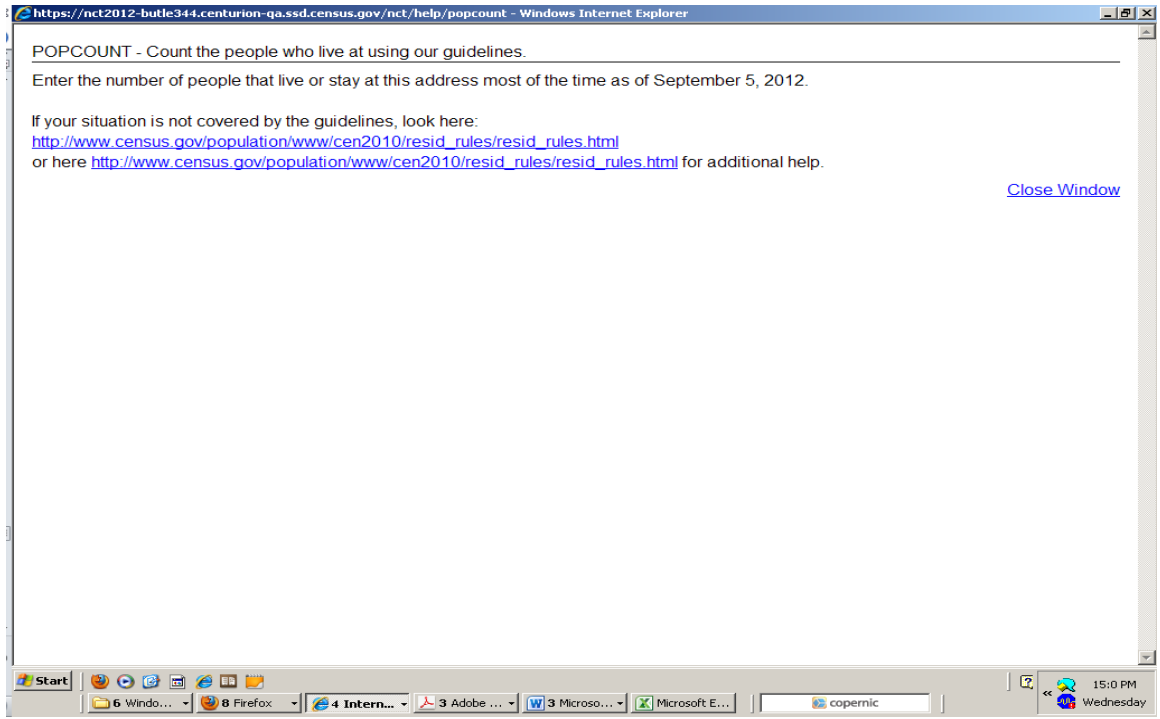


Figure A63: Entire content of POPCOUNT Help text

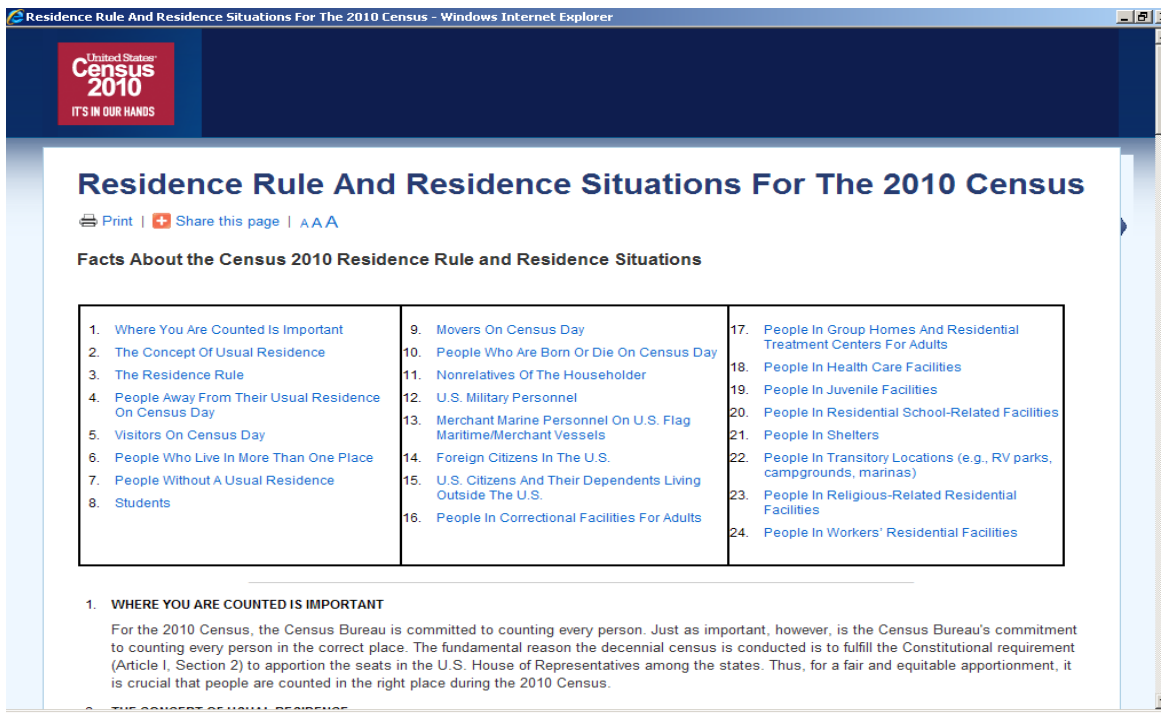


Figure A64: First Link to Residence Rules; If the content is printed, it is eight pages long.

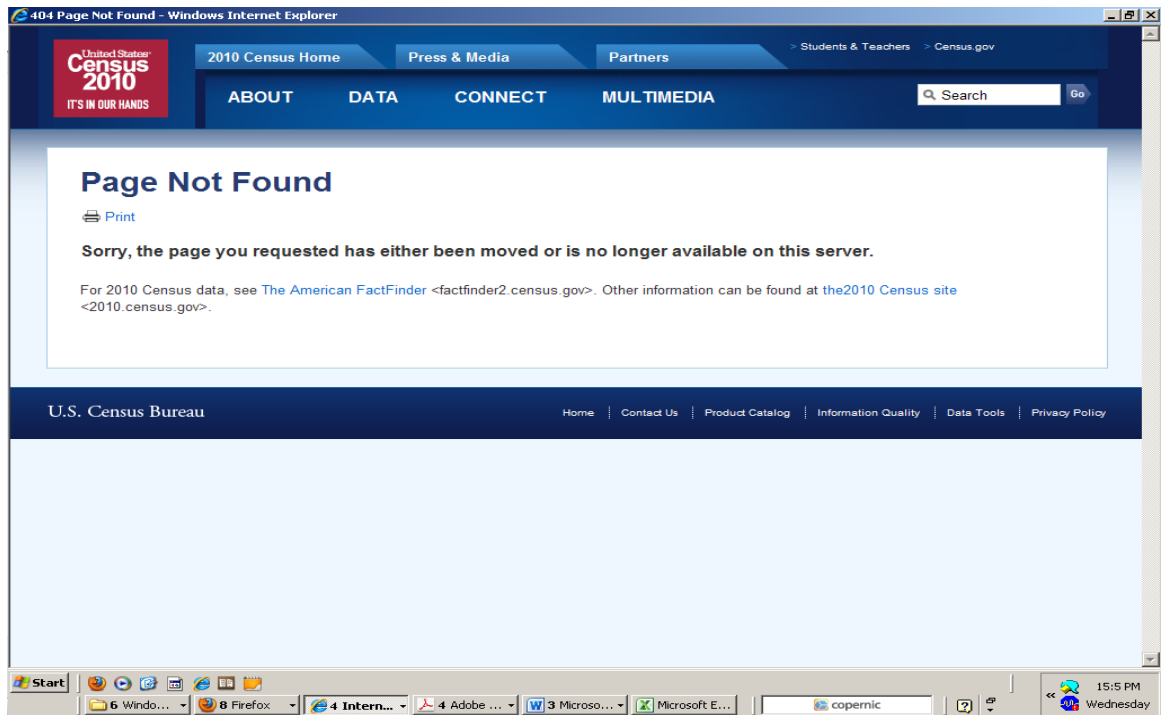


Figure A65: The second link (http://www.census.gov/population/www/cen2010/resid_rules/resid_rules.html) does not work. The broken link could have caused Internet Explorer to crash during usability testing. Last accessed 6/27/12 3:05 PM.

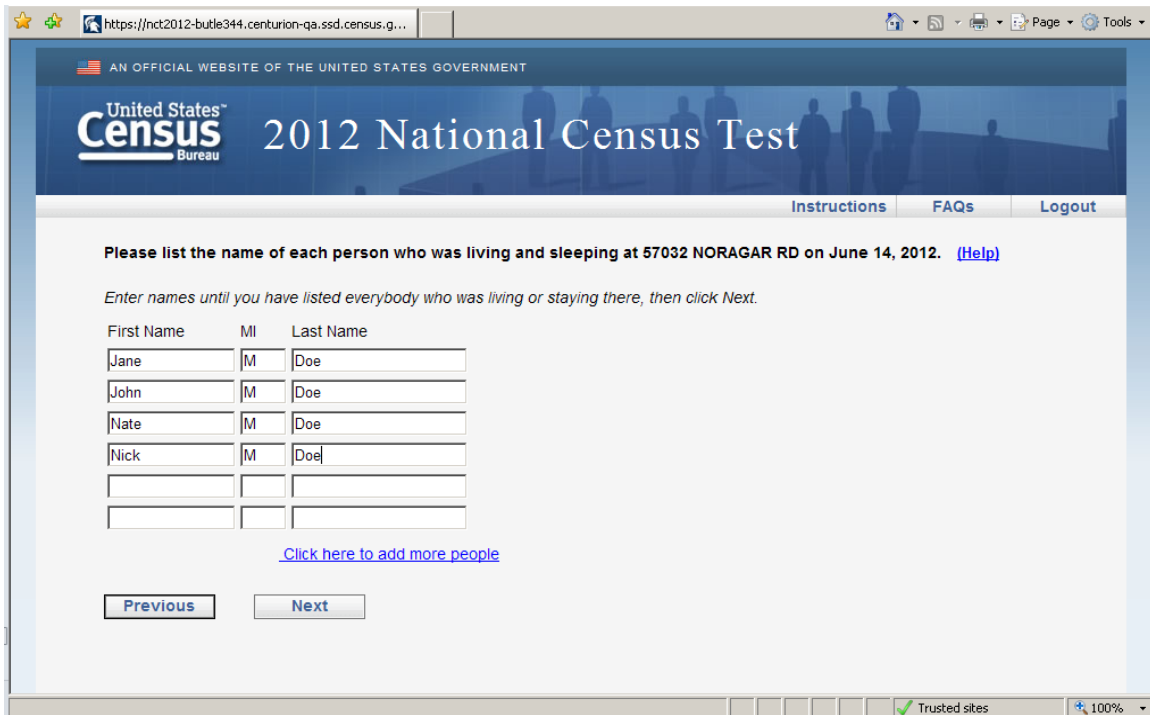


Figure A66: PEOPLE

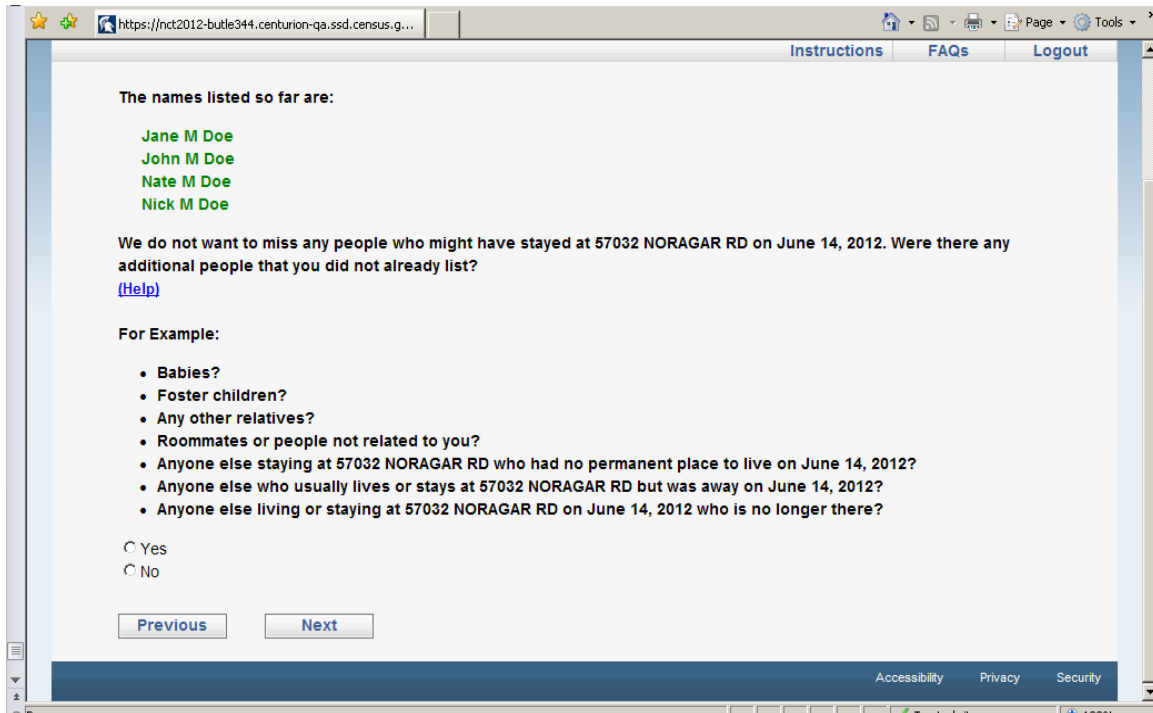


Figure A67: MISS

No -> HOME
Yes-> STAY

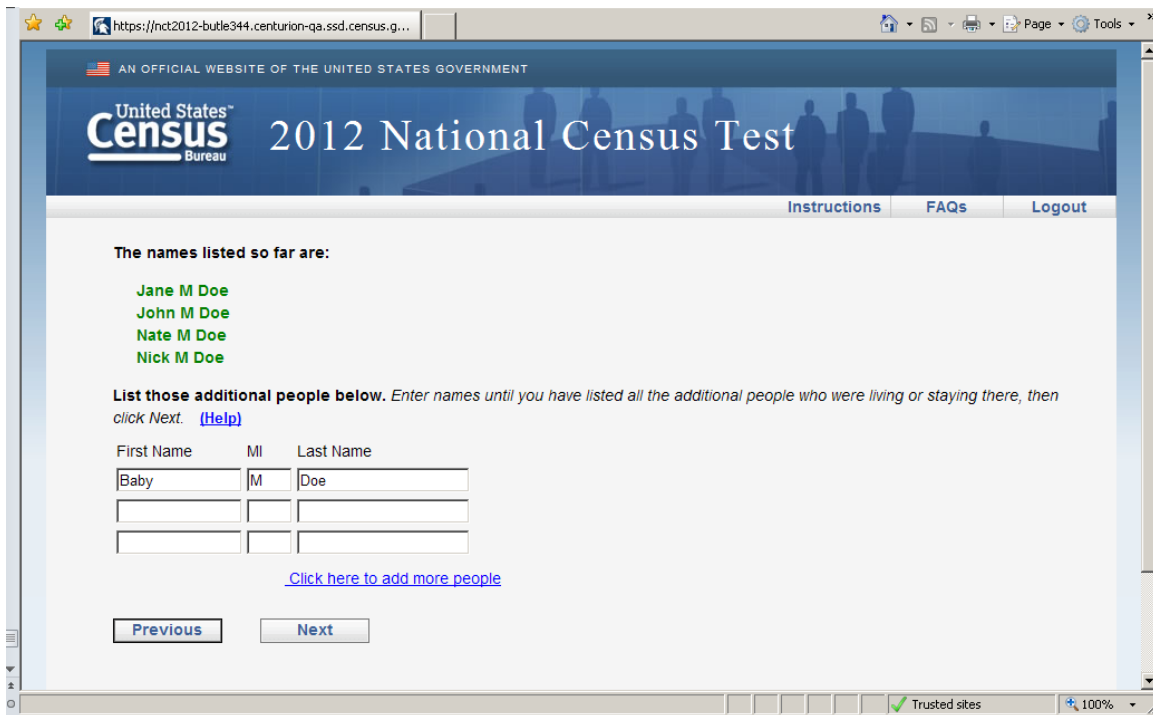


Figure A68: STAY

Home, etc. same path as above. Until ELSEWHERE

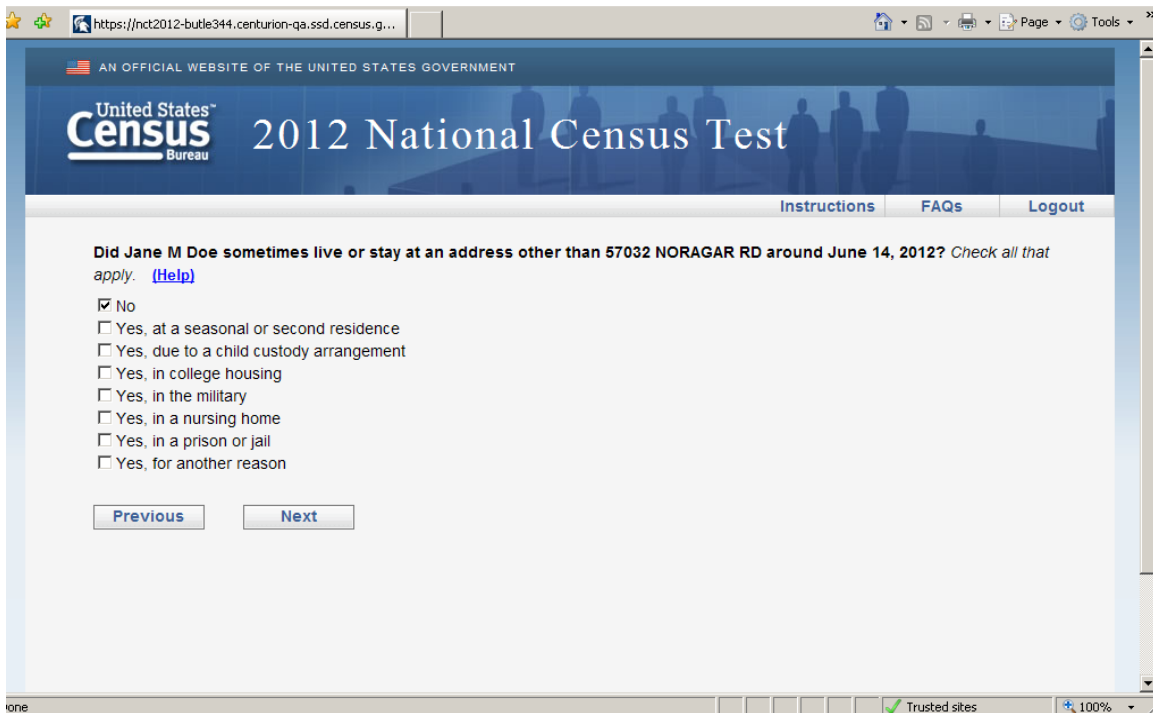


Figure A69: ELSEWHERE (Each person listed would get this screen)

Instructions FAQs Logout

Please provide the full address of the seasonal or second residence where Nate M Doe sometimes lived or stayed around June 14, 2012 . Fill in as much information as you know. [\(Help\)](#)

Number and Street: 4600 Silver Hill Road Apt/Unit #: 5K505

City: Washington

State: District of Columbia Zip: 20233

Country: United States

If there is no street address or if this is a facility, please type a description in the box below.

The Castle

Previous Next

Accessibility Privacy Security

Trusted sites 100%

Figure A70: FULLSTAY (2)- If “Yes” is selected for any of the FULLSTAY questions, it is followed up by a request for the address.

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United States[™] Census Bureau 2012 National Census Test

Instructions FAQs Logout

Where does Nate M Doe live and sleep most of the time? [\(Help\)](#)

- 57032 NORAGAR RD
- The seasonal or second residence at 4600 Silver Hill Road
- Equal time at all places
- Some other place
- Don't know

Previous Next

Done Trusted sites 100%

Figure A71 : MOST (2)

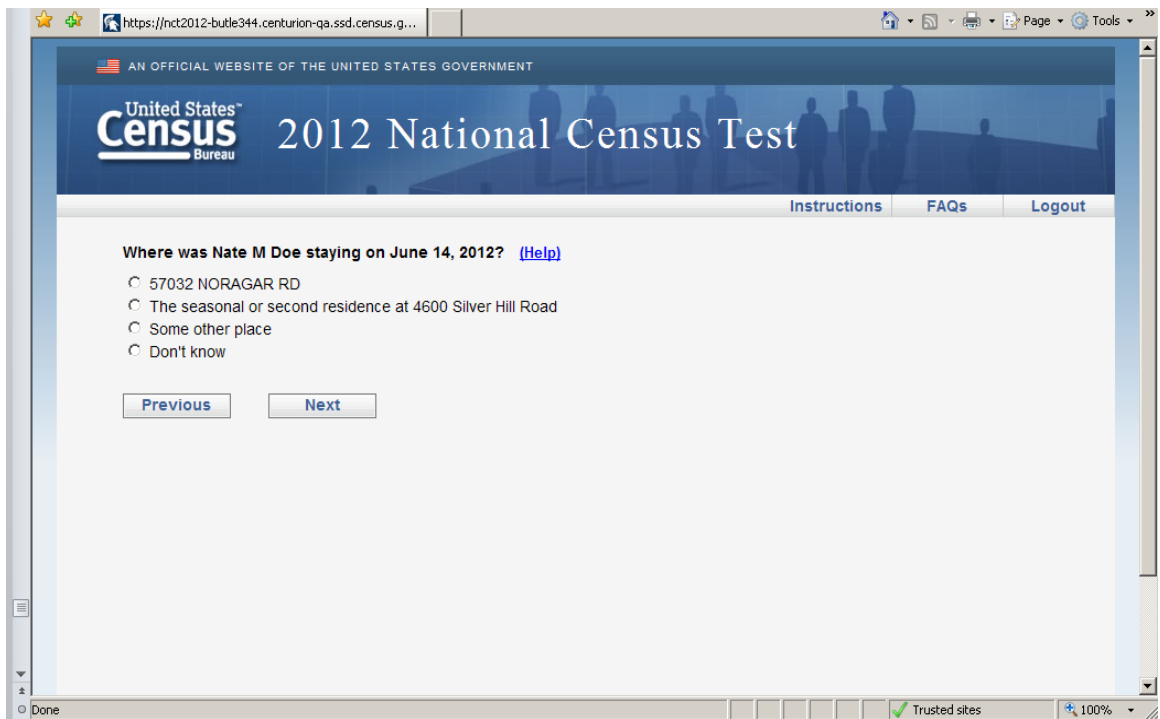


Figure A72: WHERE (Census Day) (2)

The rest of the survey is the same.
RACE 2 Screen

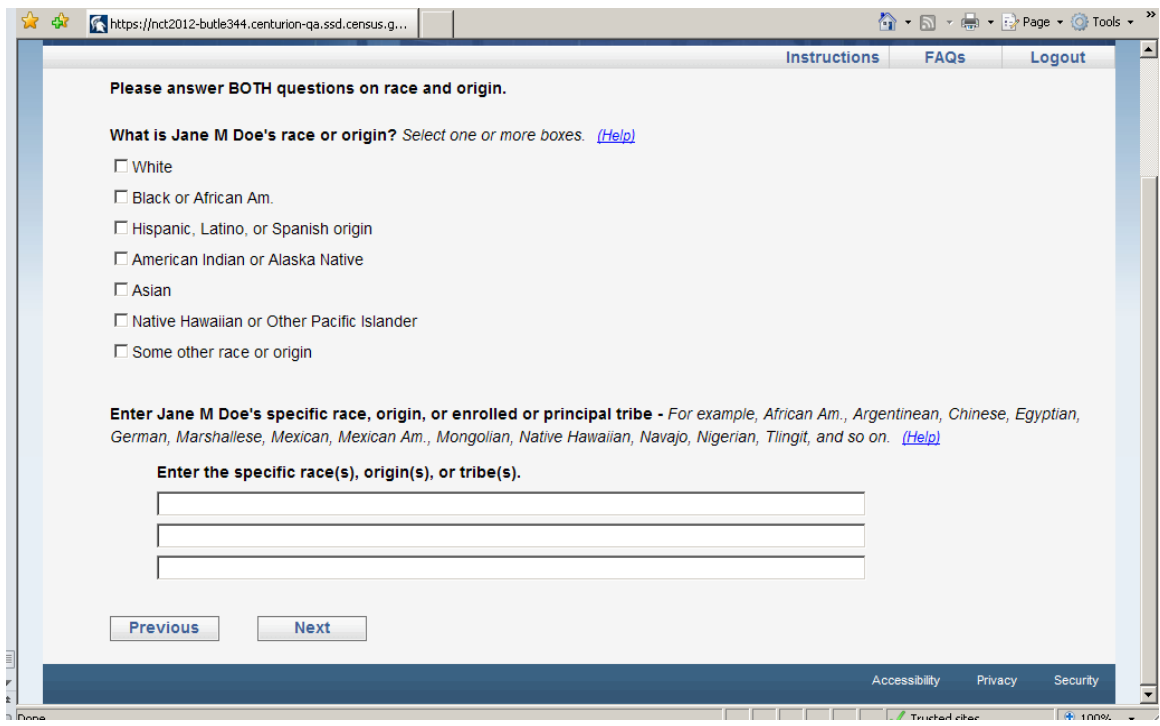


Figure A73: Race 2

I checked to see if you could enter more than one ancestry in this version and have the prefills work for more than just the first one because of the comment we got about not being able to enter more than one ancestry for Race 1.

Instructions FAQs Logout

Please answer BOTH questions on race and origin.

What is Jane M Doe's race or origin? *Select one or more boxes.* [\(Help\)](#)

White
 Black or African Am.
 Hispanic, Latino, or Spanish origin
 American Indian or Alaska Native
 Asian
 Native Hawaiian or Other Pacific Islander
 Some other race or origin

Enter Jane M Doe's specific race, origin, or enrolled or principal tribe - *For example, African Am., Argentinean, Chinese, Egyptian, German, Marshallese, Mexican, Mexican Am., Mongolian, Native Hawaiian, Navajo, Nigerian, Tlingit, and so on.* [\(Help\)](#)

Enter the specific race(s), origin(s), or tribe(s).

Pol

Polish
Polynesian

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Figure A74

Instructions FAQs Logout

Please answer BOTH questions on race and origin.

What is Jane M Doe's race or origin? *Select one or more boxes.* [\(Help\)](#)

White
 Black or African Am.
 Hispanic, Latino, or Spanish origin
 American Indian or Alaska Native
 Asian
 Native Hawaiian or Other Pacific Islander
 Some other race or origin

Enter Jane M Doe's specific race, origin, or enrolled or principal tribe - *For example, African Am., Argentinean, Chinese, Egyptian, German, Marshallese, Mexican, Mexican Am., Mongolian, Native Hawaiian, Navajo, Nigerian, Tlingit, and so on.* [\(Help\)](#)

Enter the specific race(s), origin(s), or tribe(s).

Polish
Irish
Irish

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Figure A75: Figure 40, 41- More than one prefill works if each is entered on its own line

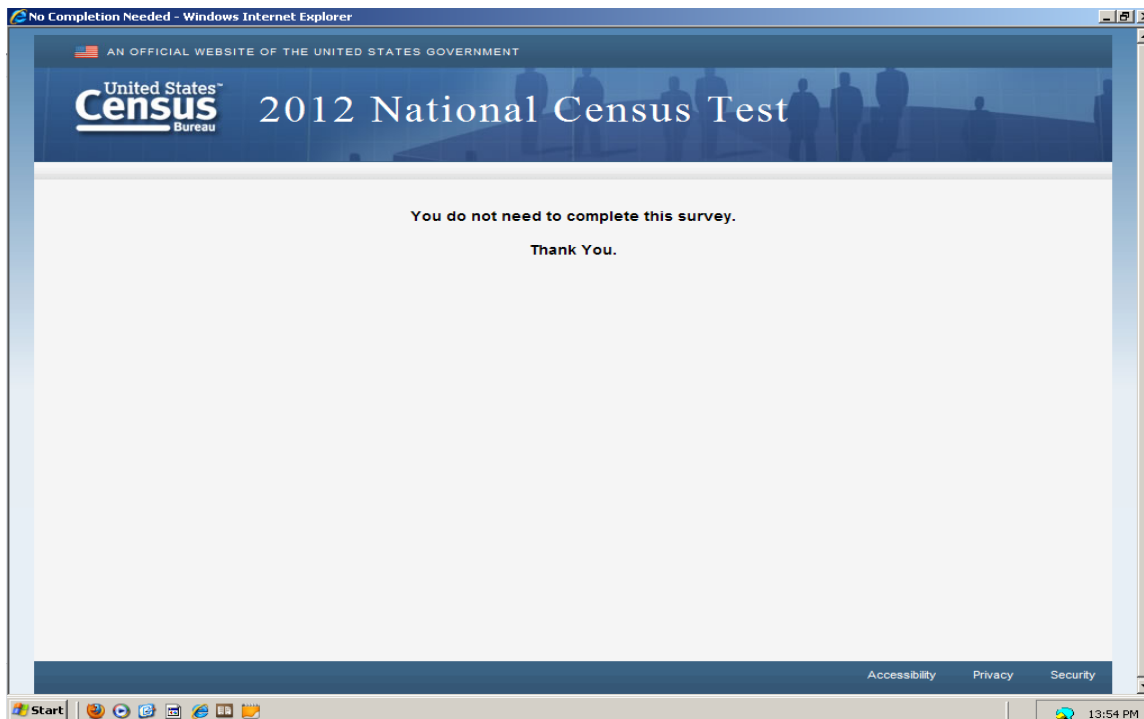


Figure A76: Occasionally, I would get this message when I selected "No" to a question.

Supplemental Information

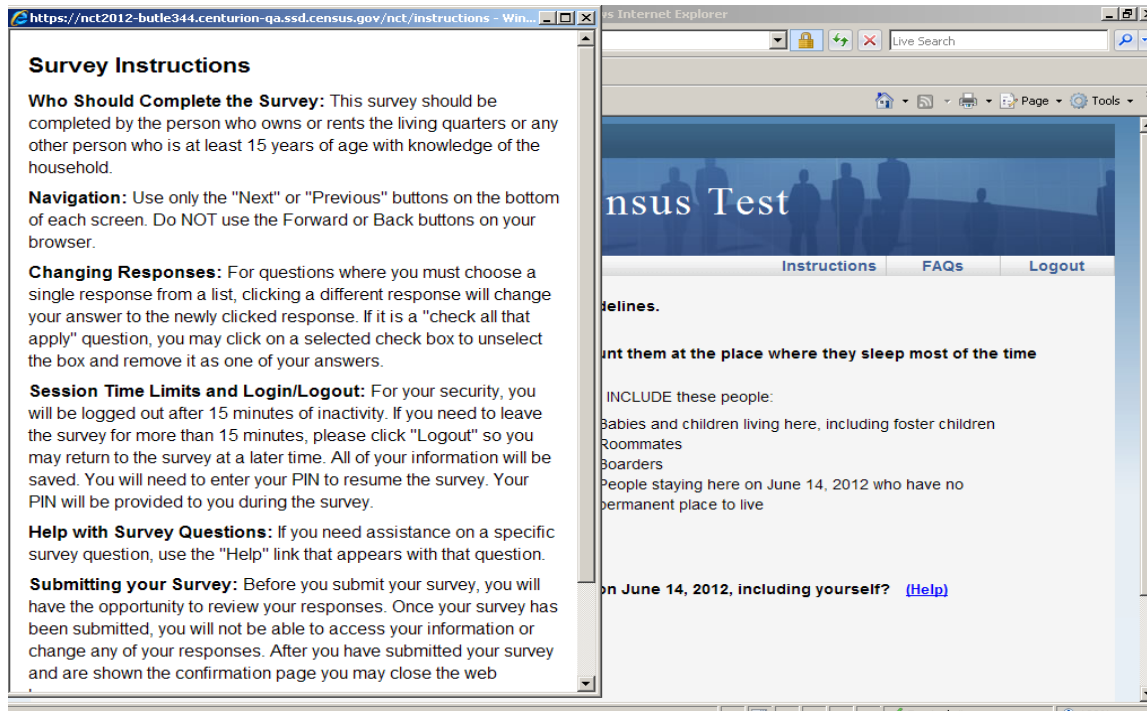


Figure A77: Instructions from Link (Window adjusted for legibility)

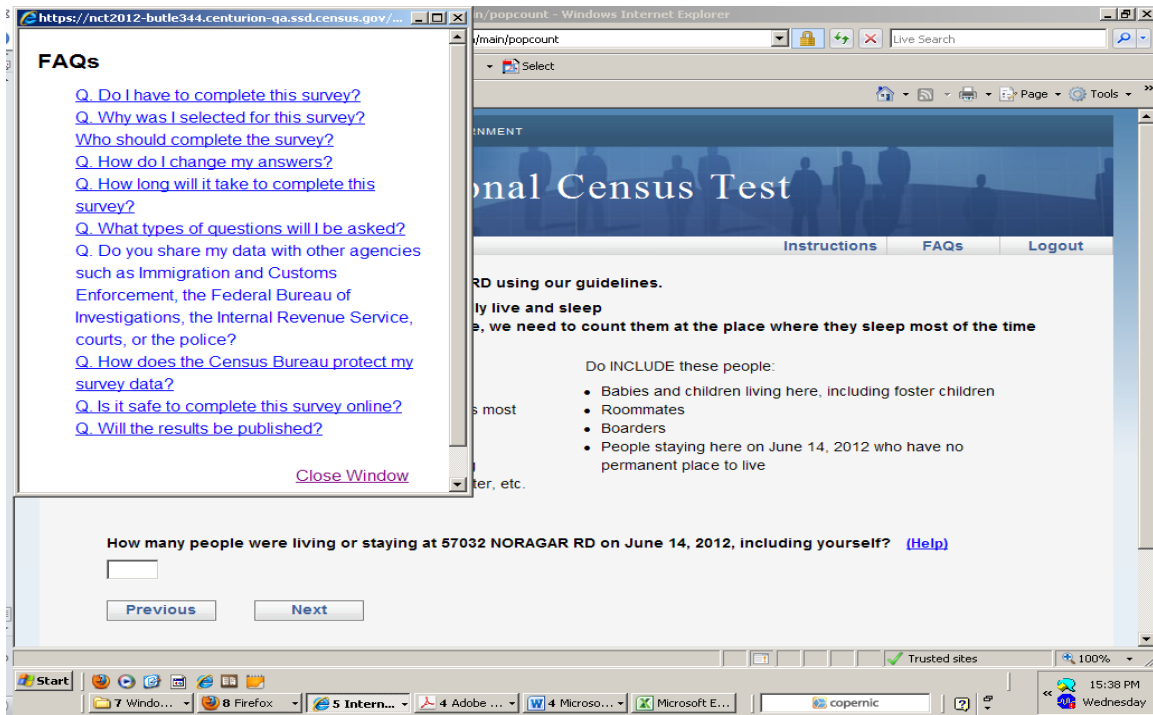


Figure A78: FAQs- Unexpanded

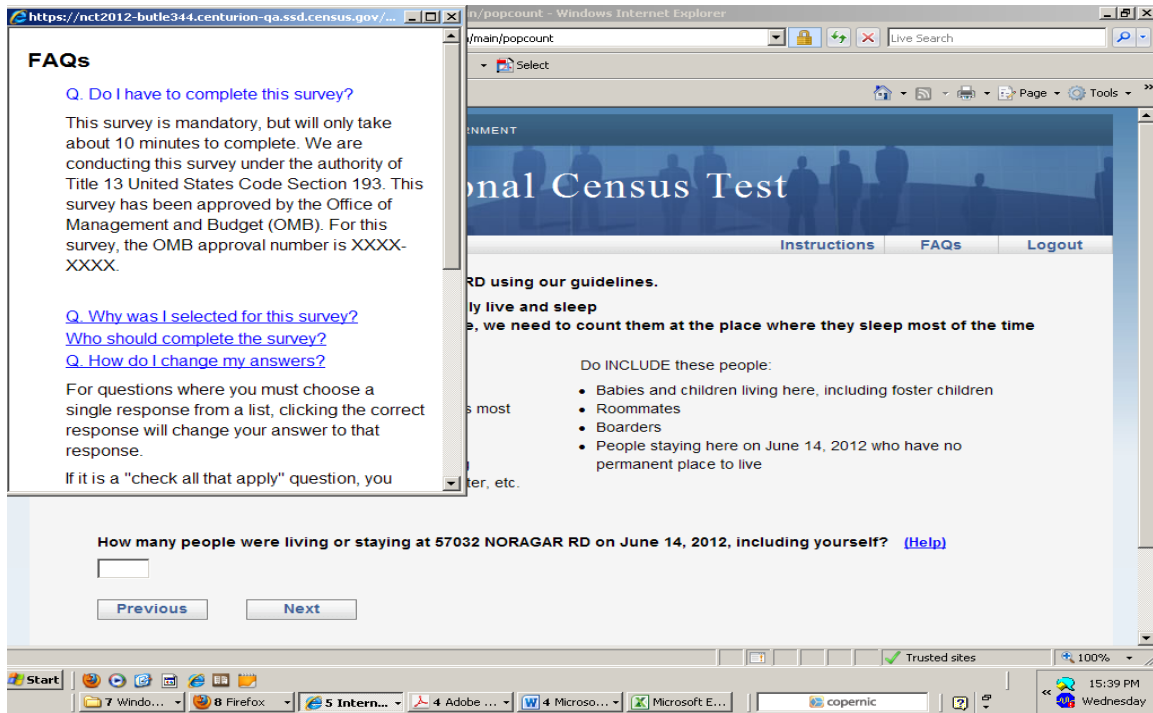


Figure A79: FAQs1: The answer should start with "YES" to "Do I have to complete this survey?"

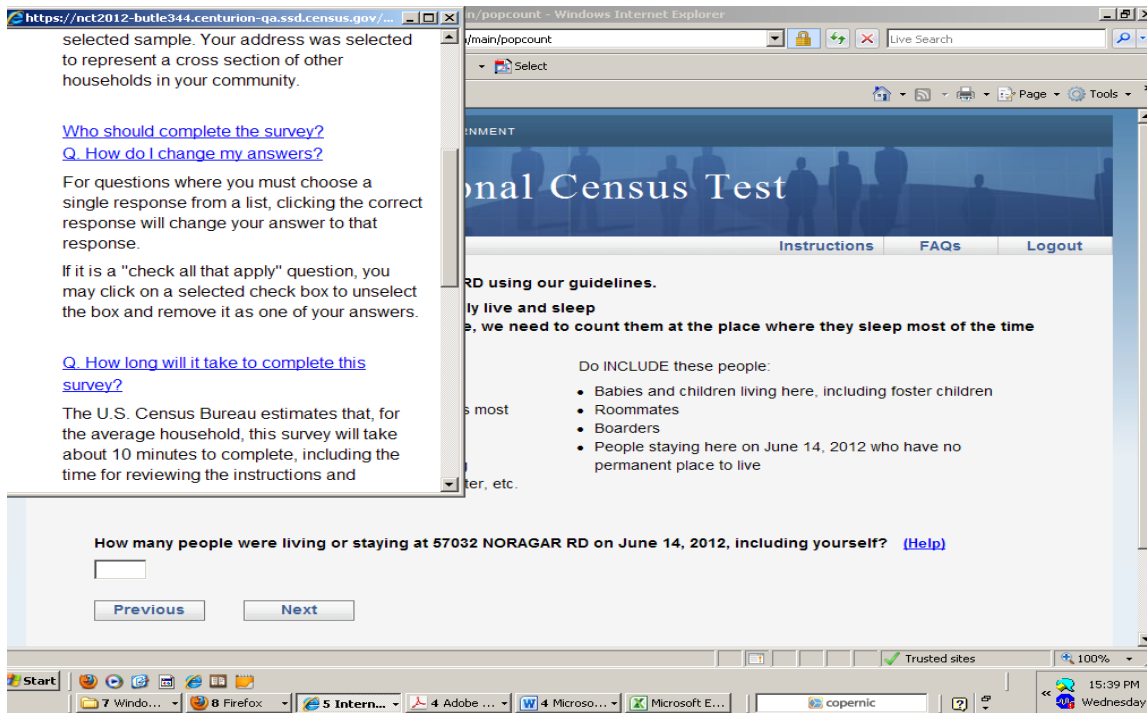


Figure A80: FAQs2- "How do I Change my answer" is really unnecessary.

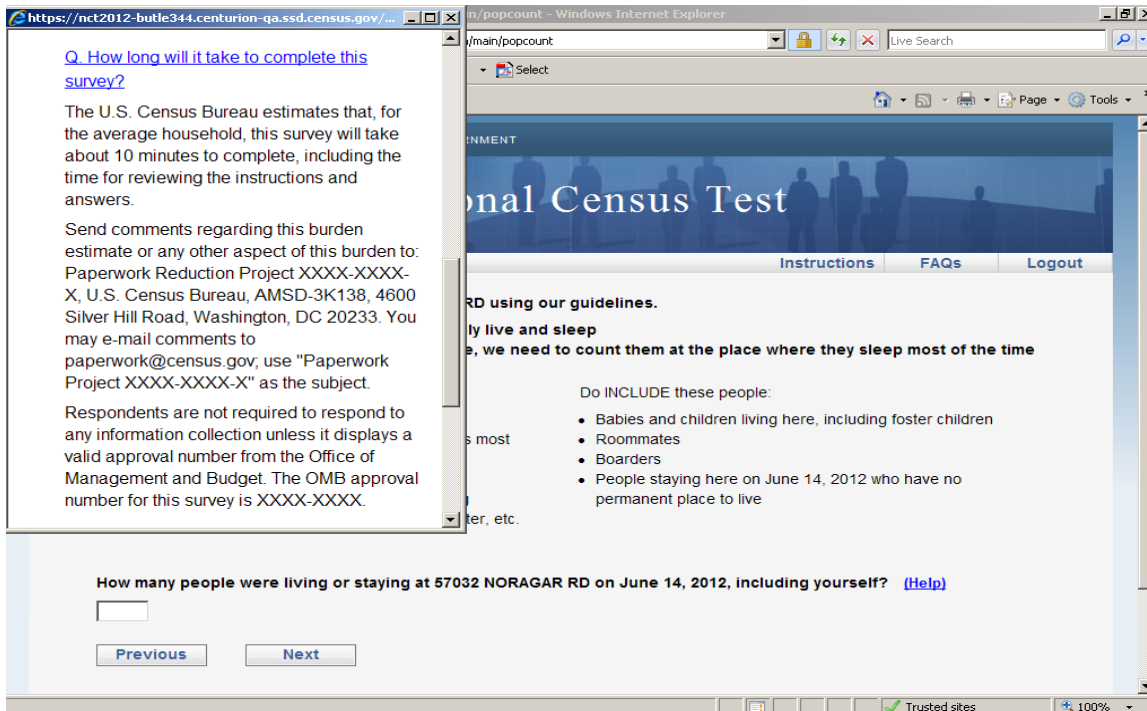


Figure A81: FAQs3

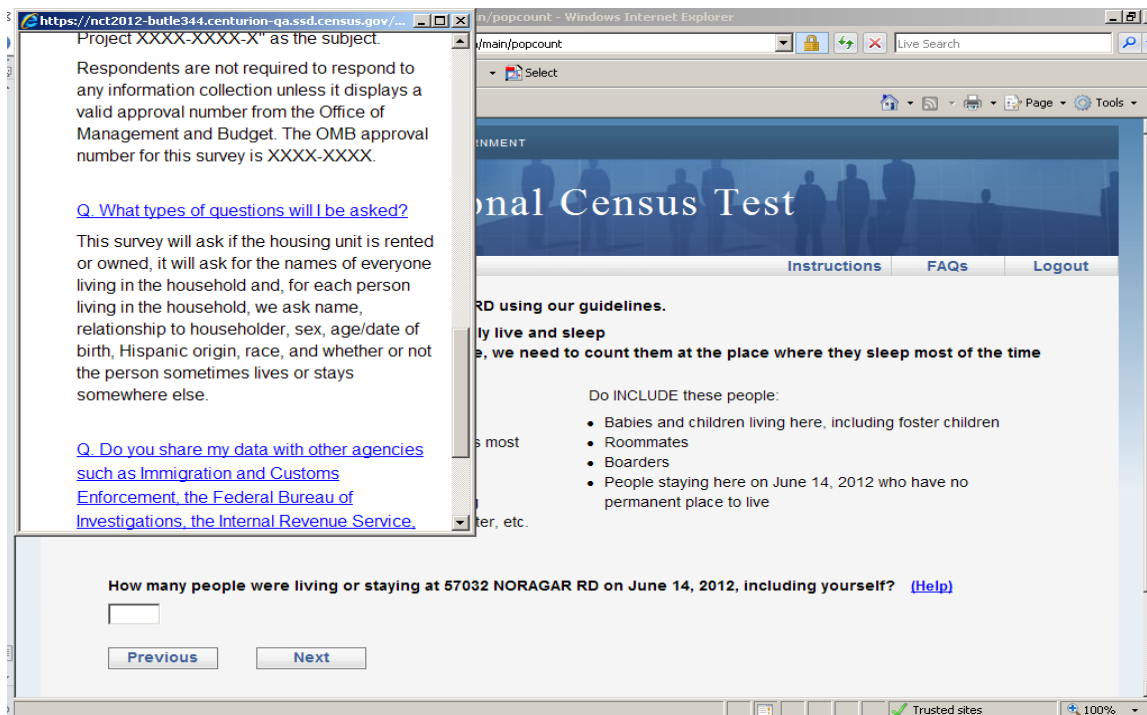


Figure A82: FAQs4

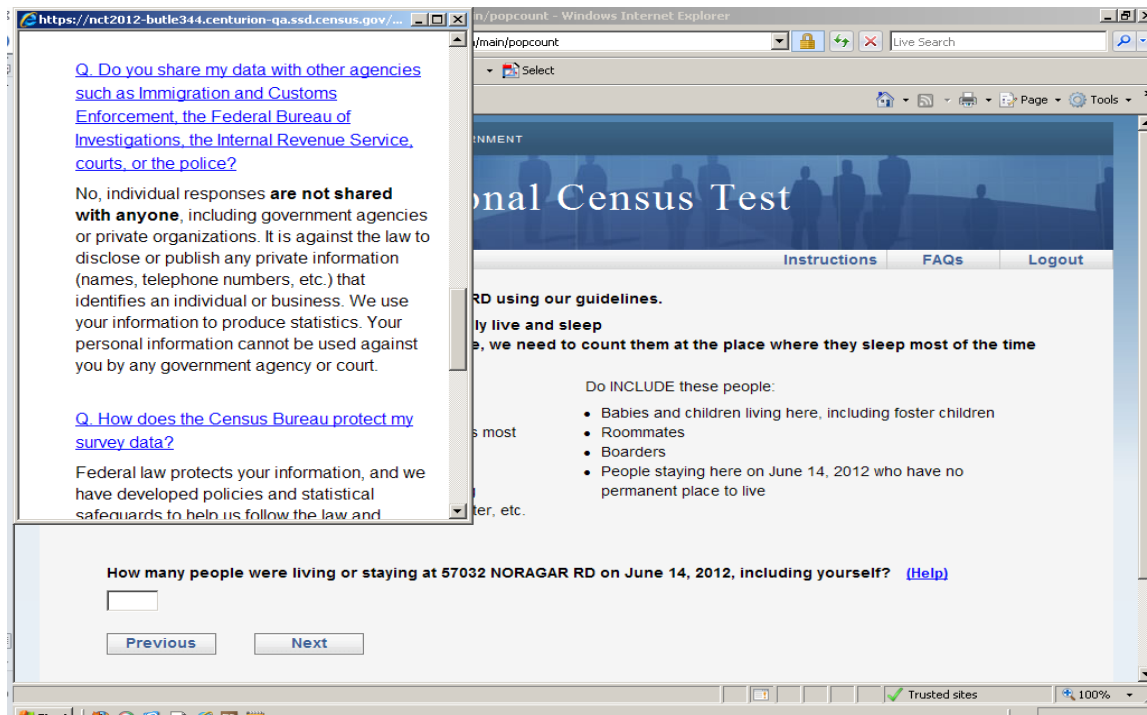


Figure A83: FAQs5

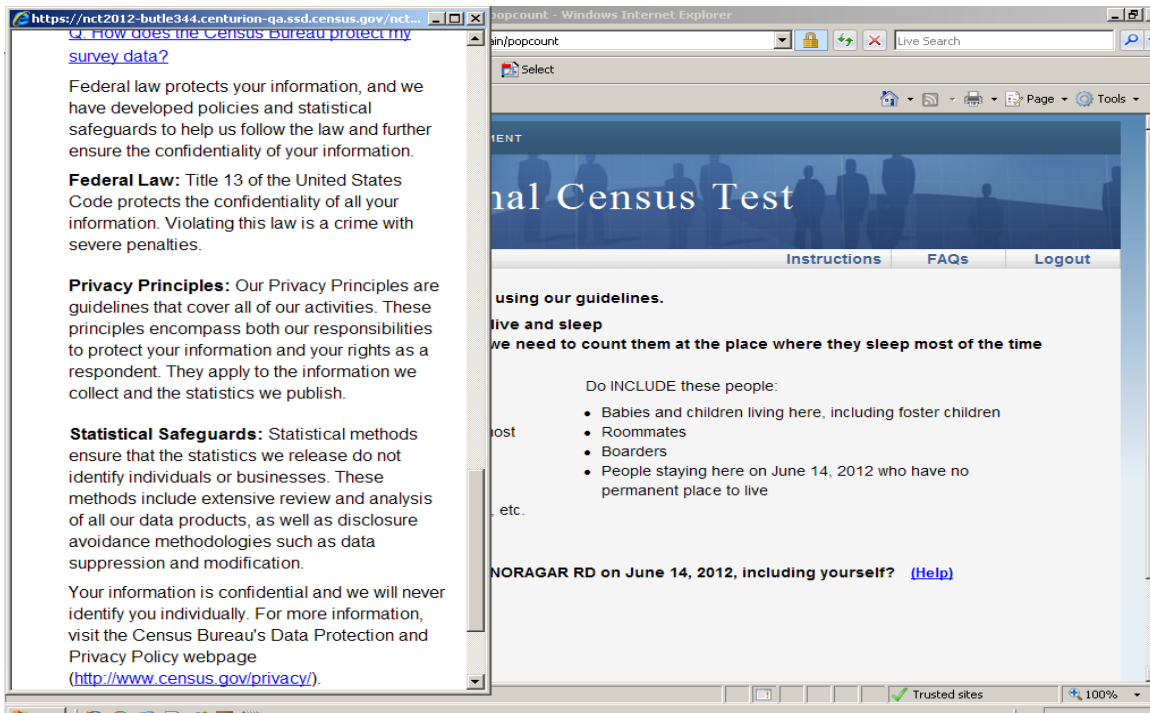


Figure A84: FAQs6

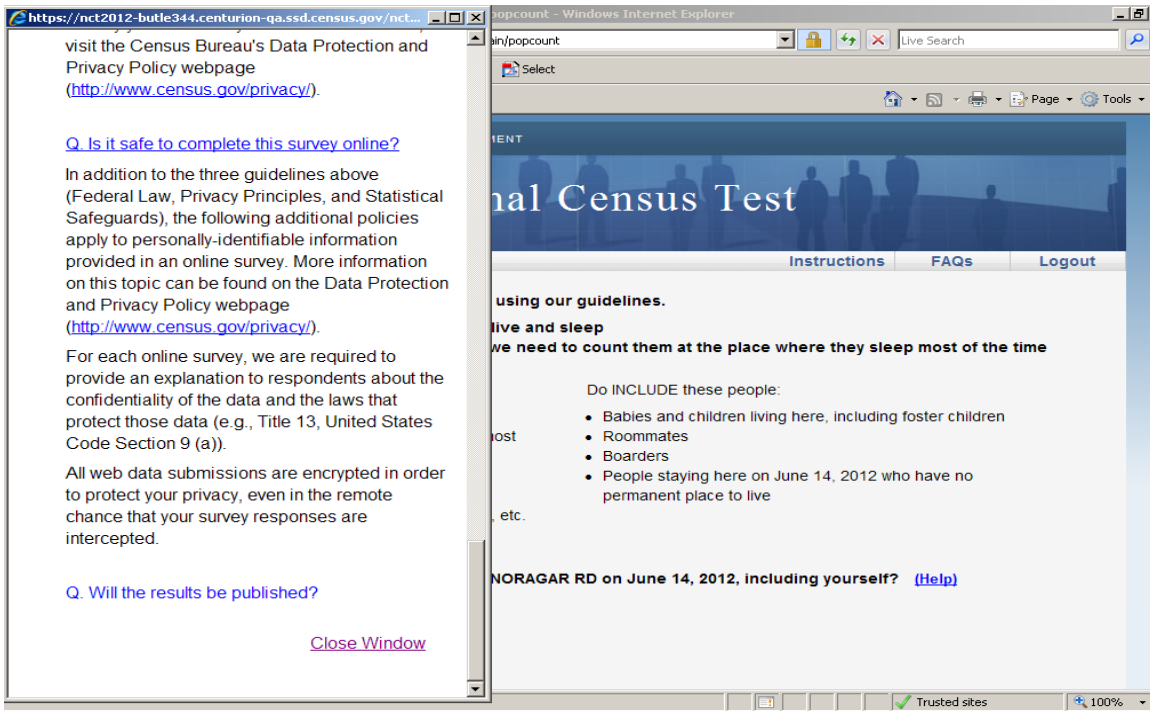


Figure A85: FAQs7



Figure A86: Page where privacy link in FAQs leads

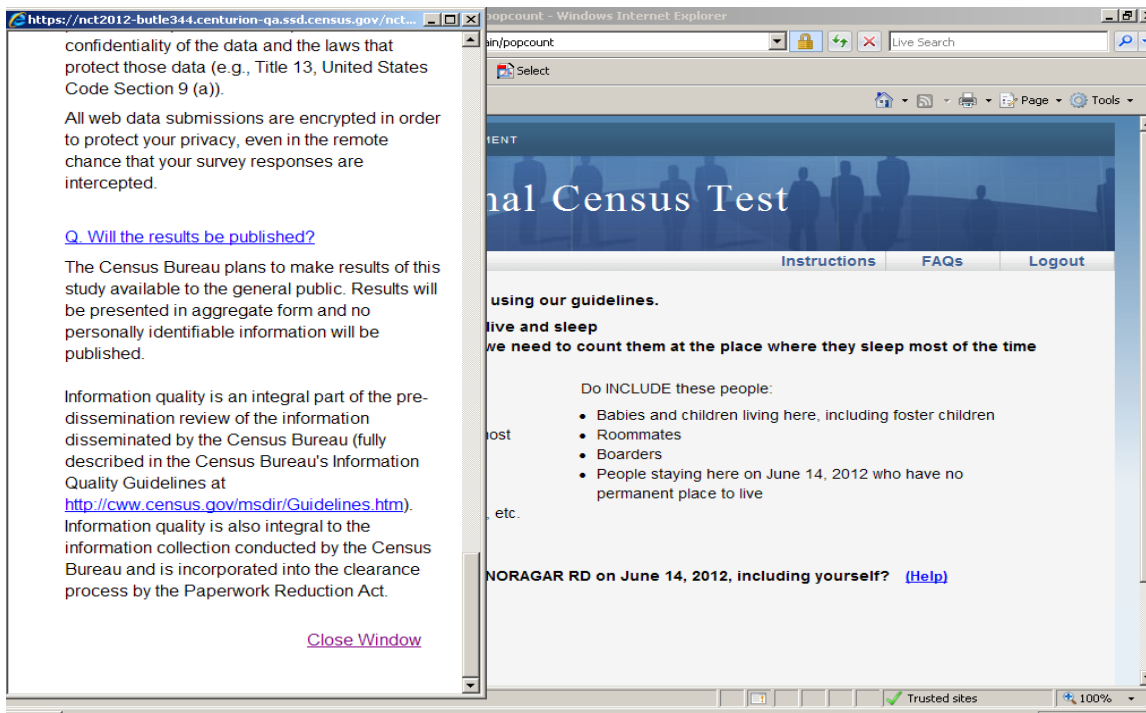


Figure A87: FAQs8

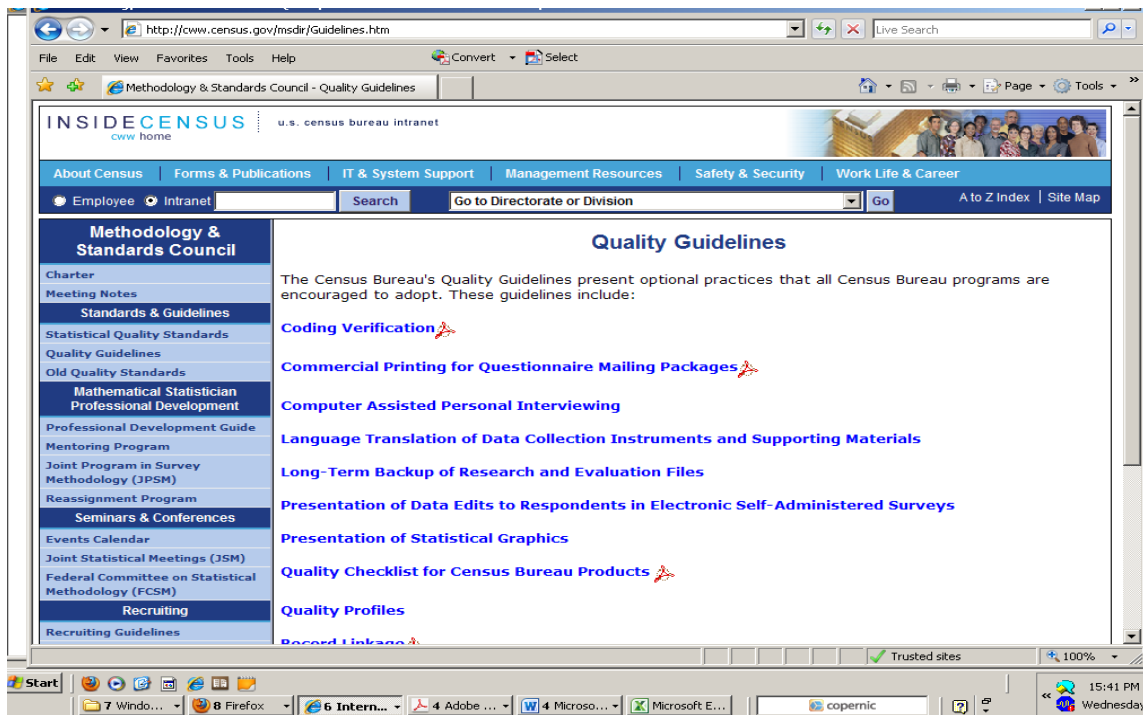


Figure A88: Link where Guidelines Link leads. It is internal, so this will not work for Rs outside of the Census Bureau HQ network

Appendix B1 : Protocol and Testing Materials

Protocol for the National Census Test Web Questionnaire

Thank you for your time today. My name is XX. I work here with the Human Factors and Usability Research group and I will be working with you today. We will be evaluating the design of the online National Census Test Questionnaire by having you complete it. Your experience with the survey is an essential part of our work. I did not create the survey, so please share both your positive and negative reactions to it. We are not evaluating you or your skills, but rather you are helping us see how well the survey works. The entire session should last about an hour. Your comments and feedback will be given to the developers of the survey and may be used to improve it.

First, I would like to ask you to read and sign this consent form. It explains the purpose of today's session and informs you of your rights as a participant. It also tells you that we would like to videotape the session, with your permission. Only those of us connected with the project will review the tape and any other data collected during the session; and it will be used solely for research purposes. We may also use clips from the tape to illustrate key points to the Web design team. In addition, there may be members from the project team observing this session in another room.

Hand the participant the consent form; give time to read and sign; sign own name and date if you have not already done so.

Start the tape.

While you are completing the survey, we will record the movements of your eyes with our eye-tracking monitor to get a record of where you are looking on the screen.

I would like you to tell me your impressions and thoughts about the screens as you look at them. In other words, I would like you to "think aloud" and talk to me about your impressions. If you expect to see some piece of information, tell me whether you saw it or not.

Pull up www.wtop.com in Firefox.

Before we get started, let's practice thinking aloud, since it's not something that you would normally do while working online. Pretend that you have a minute or two to kill at your desk at work. Talk me through your thought process as you try to find something interesting to read on this news site <or any other if this one is not one that you would normally look at>.

Ok, that's exactly what I would like you to do throughout the session. If at any time during the session you get quiet, I may remind you to talk to me. This is not to interrupt your thought process, but simply to remind you to keep talking to me. Please focus on verbalizing what you are thinking as you complete the survey.

Do you have any questions about the think aloud technique that we just practiced?

Now I am going to calibrate your eyes for the eye tracking.

Do Calibration

Now that we have your eyes calibrated, we are ready to begin. Please respond to the survey online as you would at home. You may answer the survey questions as they apply to you in your real life. Although the materials will give you an Internet address, or URL, to enter to access the survey, you will not need to enter that because our testing software will open the survey for you.

This is the card you would receive and use to access the survey online if you were taking this survey at home. If you were to receive the survey at your home, the mailing materials would have your real address. For the purposes of this study, please pretend that the fictitious address on the screen is yours and that you live there.

I am going to go around to the other room to do a sound check. While I am doing that, please take a moment to complete this questionnaire. [*Hand P questionnaire on Computer experience and demographics*]

I'm going to leave but we will still be able to communicate through a series of microphones and speakers. Do you have any questions before we begin?

Leave room. Once in control room do a sound check and Start the eye-tracking software: Tobii Studio. The mouse tracing software will start when Studio opens Internet Explorer.

Encourage P to think aloud while completing the survey. Ask probe questions about what they are thinking if they are having trouble with any part of the survey.

Make a note and probe if the P has any difficulty with or comments on a prefill or predictive text on the race question.

Make note of any signs of respondent confusion in any coverage question, and probe retrospectively.

Note any signs of respondent fatigue in any coverage question, and probe retrospectively.

Note any questions respondent interprets as redundant and note which questions those are, and why they sound redundant. If respondent does not spontaneously remark about perceived redundancy, ask them explicitly in the debriefing if any questions seemed redundant, which ones, and why that was.

Pay close attention to (and note) how the respondent experiences the instrument and the fills for any questions in which an alternative address is displayed as part of the question or response set. Probe retrospectively if any difficulties, hesitation are evident.

Make a note of any difficulty or comments on the Race screens. Probe in-depth during debriefing if there were major problems.

When P has completed the survey, tell him/her:

Thank you for completing the National Census Test Questionnaire. Please complete this satisfaction questionnaire. I will be back around to ask you a few more questions about your experience.

In the mean time, please complete this short satisfaction questionnaire about your experience.

NCT Internet Test Debriefing Questions

After the participant is finished with completing the survey, begin the debriefing questions.

Review their responses to satisfaction survey and probe about any drastic scores.

What was your overall impression of the survey?

What are some things that you liked about the survey?

What are some things that you disliked about the survey?

Is there anything about the survey that you did not understand?

How does this survey compare to the Web surveys that you have taken in the past in terms of visual appeal?

If you forgot your PIN, how easy or difficult would it be for you to remember your answer to the security question?

Very Easy	Somewhat Easy	Somewhat Difficult	Very Difficult						
1	2	3	4	5	6	7	8	9	10

Did you think the login process was more secure than other logins you have completed, like bank sites and email accounts, about the same level of security, or less secure?

On a scale of 1 to 10 with 1 being very easy and 10 being very difficult, how easy or difficult was it to log into the survey?

Very Easy	Somewhat Easy	Somewhat Difficult	Very Difficult						
1	2	3	4	5	6	7	8	9	10

Age/Date of Birth

Did you notice that the age was automatically calculated for you? If so, did you like, not have an opinion, or dislike this feature?

On a scale of 1 to 10 with 1 being very easy and 10 being very difficult, how easy or difficult was it to indicate your date of birth?

Very Easy	Somewhat Easy	Somewhat Difficult	Very Difficult						
1	2	3	4	5	6	7	8	9	10

When entering your date of birth, do you prefer a drop-down menu option like the one in this survey, or a text-entry option where you just type the date in, or do you have no preference? The text entry option usually looks like this:

What is Te E. Ve's date of birth? [\(Help\)](#)

MM DD YYYY
 / /

What would you do if the age displayed was incorrect? What you would change -- DOB or age -- and how would you do it? Would you expect a recalculation of age if you changed the date of birth?

Coverage Questions/People

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2012 National Census Test

United States Census Bureau
Measuring America

[Instructions](#) [FAQs](#) [Logout](#)

Please list the name of each person who was living and sleeping at on September 5, 2012. [\(Help\)](#)

Enter names until you have listed everybody who was living or staying there, then click Next.

First Name	MI	Last Name
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

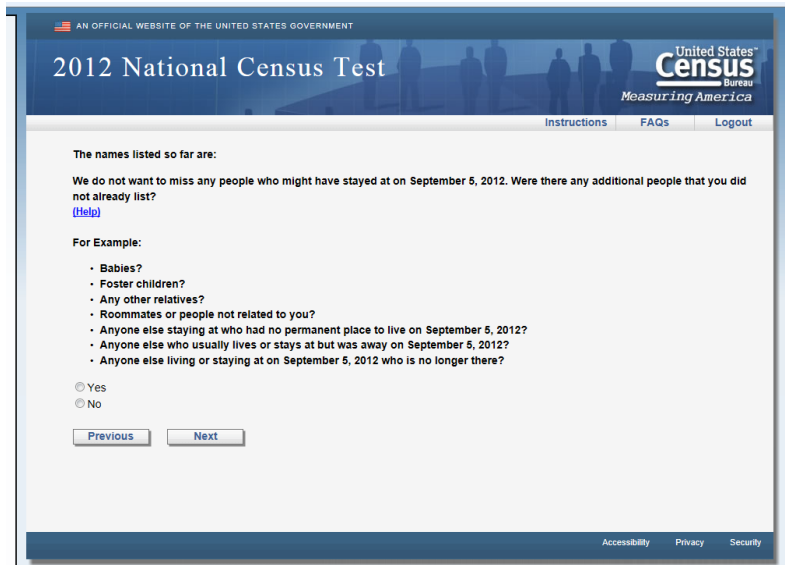
[Click here to add more people](#)

Accessibility Privacy Security

In your own words, what does "living and sleeping" mean to you in this question?

What time frame did you use to answer this question? [specific day vs. general time]

Was there anyone whose name you thought of including, but didn't? If yes, probe about that person's situation (i.e., living situation).



Did you read the list of examples above the response options?

Yes No

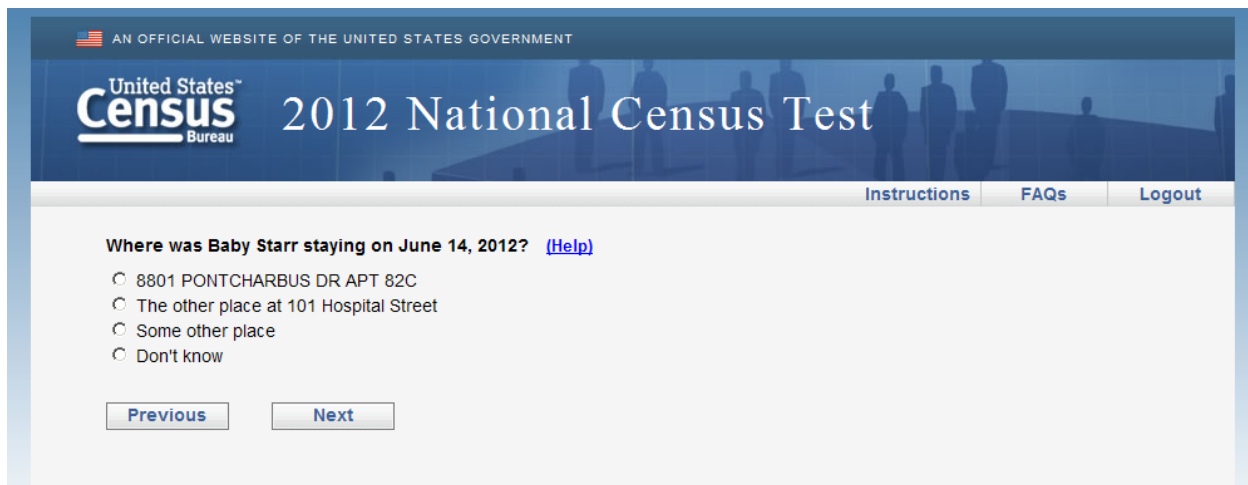
What did you think this question was asking about: We do not want to miss any people who might have been staying at 123 Main Street, Apt. G on June 14, 2012. Were there any additional people that you did not already list?

Situation #1

Brenda was eight months pregnant and delivered her baby prematurely. Brenda is allowed to leave the hospital, but the newborn has to stay in the hospital and gain a little weight before coming home. Brenda is at home at 8801 Pontcharbus Drive, filling out this survey.

How should she answer the following questions?

First Screen:



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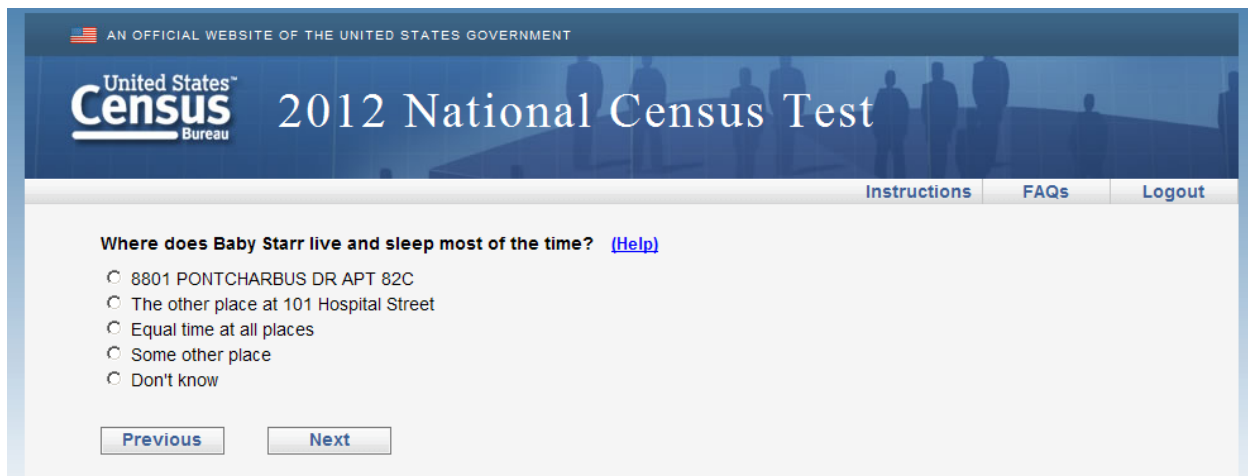
[Instructions](#) [FAQs](#) [Logout](#)

Where was Baby Starr staying on June 14, 2012? [\(Help\)](#)

- 8801 PONTCHARBUS DR APT 82C
- The other place at 101 Hospital Street
- Some other place
- Don't know

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Second screen:



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[Instructions](#) [FAQs](#) [Logout](#)

Where does Baby Starr live and sleep most of the time? [\(Help\)](#)

- 8801 PONTCHARBUS DR APT 82C
- The other place at 101 Hospital Street
- Equal time at all places
- Some other place
- Don't know

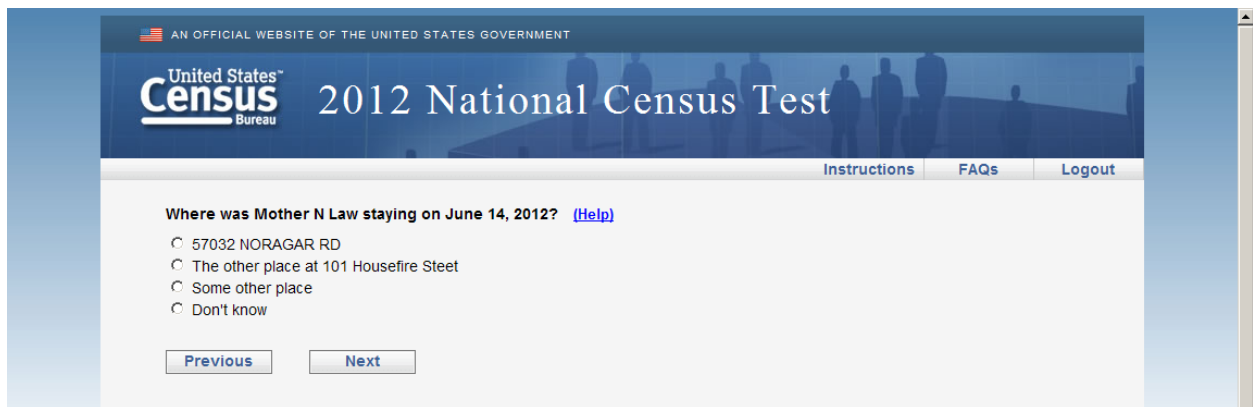
[Previous](#) [Next](#)

Situation #2

Barry's in-laws have been staying with him and his wife for the past three months, since their home burned down. The in-laws have awesome homeowners insurance and their home will be rebuilt within the next eight months. Until then, and much to Barry's dismay, his in-laws are going to be sleeping in the guest bedroom at 57032 Noragar Road.

How should he answer the following questions?

Screen 1:



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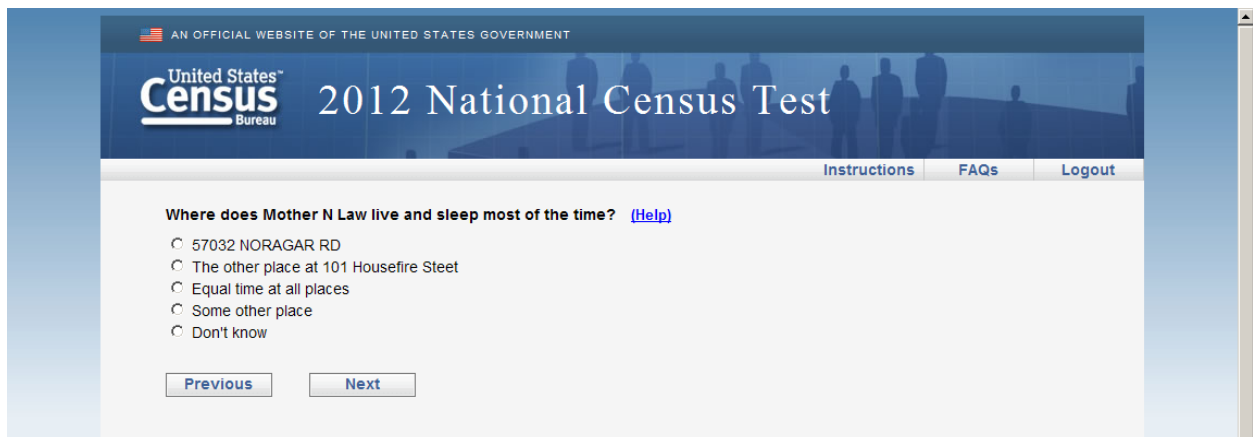
2012 National Census Test

[Instructions](#) [FAQs](#) [Logout](#)

Where was Mother N Law staying on June 14, 2012? [\(Help\)](#)

- 57032 NORAGAR RD
- The other place at 101 Housefire Steet
- Some other place
- Don't know

Screen 2:



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Where does Mother N Law live and sleep most of the time? [\(Help\)](#)

- 57032 NORAGAR RD
- The other place at 101 Housefire Steet
- Equal time at all places
- Some other place
- Don't know

Situation #3

Suzy is eight years old and lives with her mother. Suzy spends every summer with her father, who lives in another state. The day Suzy's mom fills out this survey, Suzy has been with her father for the last few weeks and will not return to her mother's home at 57032 Noragar Road for another few months.

How should she answer the following questions?

Screen 1:

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Does anyone sometimes live or stay somewhere else with a parent, grandparent, or other person? [\(Help\)](#)

Yes
 No

Screen 2:

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[Instructions](#) [FAQs](#) [Logout](#)

Where does Suzy Smith live and sleep most of the time? [\(Help\)](#)

57032 NORAGAR RD
 The place for child custody at 511 Dad's House
 Equal time at all places
 Some other place
 Don't know

Screen 3:

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[Instructions](#) [FAQs](#) [Logout](#)

Where was Suzy Smith staying on June 14, 2012? [\(Help\)](#)

- 57032 NORAGAR RD
- The place for child custody at 511 Dad's House
- Some other place
- Don't know

Situation #4

Maria is a college student who lives in a dormitory on campus during the week. On the weekends, Maria stays at her parents' house at 3 Iwanntakey Drive so her mom can do her laundry and Maria can catch up with her high school friends. Maria's mother is filling out the survey on the weekend, so she lists Maria as someone who lives in the household.

How should she answer the following questions?

Screen 1:

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Where does Maria Cuervo live and sleep most of the time? [\(Help\)](#)

- 3 IWANNTAKEY DR
- The college housing address at 432 University Way
- Equal time at all places
- Some other place
- Don't know

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Screen 2:

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[Instructions](#) [FAQs](#) [Logout](#)

Where was Maria Cuervo staying on June 14, 2012? [\(Help\)](#)

- 3 IWANNTAKEY DR
- The college housing address at 432 University Way
- Some other place
- Don't know

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Situation #5

Jessica is married to Tom, and they are both in the Army. Jessica has just been redeployed to Afghanistan for the third time. She's only been gone a few days and Tom is filling out this survey at their home on Iwanntakey Drive. Tom includes Jessica's name on the survey.

How should he answer the following questions?

Screen 1:

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Where does Jessica Rabbit live and sleep most of the time? [\(Help\)](#)

- 3 IWANNTAKEY DR
- The job (including military assignment) at 777 Barracks Row
- Equal time at all places
- Some other place
- Don't know

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Screen 2:

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Where was Jessica Rabbit staying on June 14, 2012? [\(Help\)](#)

- 3 IWANNTAKEY DR
- The job (including military assignment) at 777 Barracks Row
- Some other place
- Don't know

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Situation #6

Matt and his wife, Sharon, are hippies. They have an open-door policy at their house at 826 Park Place Road, Building 31, which means that anyone can crash there at any time. A guy named Rudy sometimes shows up and sleeps on their couch. Matt and his wife have no idea where Rudy sleeps when he's not couch-surfing at their house. When Matt is filling out this survey over his morning coffee, Rudy wakes up and asks if he can stay over one more night.

How should he answer the following questions?

Screen 1:

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Where does Rudy Sincasa live and sleep most of the time? [\(Help\)](#)

- 826 PARK PLACE RD BLDG31
- The other place
- Equal time at all places
- Some other place
- Don't know

[Previous](#) [Next](#)

Screen 2:

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[Instructions](#) [FAQs](#) [Logout](#)

Where was Rudy Sincasa staying on June 14, 2012? [\(Help\)](#)

- 826 PARK PLACE RD BLDG31
- The other place
- Some other place
- Don't know

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Situation #7

Cathy is retired and maintains two homes. One in Maryland (at 57032 Noragar Road) and one in North Carolina (at 999 Tarheel Lane). She hates the cold winters in Maryland, so she tries to stay in North Carolina during the winter. However, she loves the warm summer months, and so she stays in her Maryland home a little more often during the summer. Cathy happens to be staying at her home in Maryland when she is filling out the survey that lists the address of her Maryland home.

How should she answer the following questions?

Screen 1:

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[Instructions](#) [FAQs](#) [Logout](#)

Where does Cathy Doscasa live and sleep most of the time? [\(Help\)](#)

- 57032 NORAGAR RD
- The seasonal or second residence at 999 Tarheel Lane
- Equal time at all places
- Some other place
- Don't know

[Previous](#) [Next](#)

Screen 2:

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[Instructions](#) [FAQs](#) [Logout](#)

Where was Cathy Doscasa staying on June 14, 2012? [\(Help\)](#)

- 57032 NORAGAR RD
- The seasonal or second residence at 999 Tarheel Lane
- Some other place
- Don't know

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Race

What did you think of the format of the race question?

Did you have any trouble finding the response option(s) that you were looking for?

What would you do if you wanted to select more than one response option?

Did you notice that you had to scroll down to find the Next button? Is this design easy to follow and understand or did you have to think about it before you scrolled?

When you started to type in some of the response boxes, a list of possible answers appears and you can select one if it applies to you. Did you notice this happening during your session? If yes, did you like, have no opinion, or dislike this feature? Did you think you had to select one of the possible answers that came up?

At the end of the survey, it asked for your email address. Why do you think your email address was requested?

On a scale of 1 to 10 with 1 being very easy and 10 being very difficult, how comfortable were you with providing your email address to the Census Bureau?

Very Comfortable	Somewhat Comfortable	Somewhat Uncomfortable	Very Uncomfortable						
1	2	3	4	5	6	7	8	9	10

Other than what we have already talked about, did you have any other comments or suggestions about the Web survey?

Appendix B2 : Consent Form

Consent Form



Usability Study of the National Census Test

Each year, the Census Bureau conducts many different usability evaluations. For example, the Census Bureau routinely tests the wording, layout and behavior of products, such as Web sites, online surveys, and letters sent through the mail in order to obtain the best information possible from respondents.

You have volunteered to take part in a study to improve the usability of the National Census test. In order to have a complete record of your comments, your usability session will be recorded (audio and screen capture). Staff directly involved in the usable design research project will have access to the data. Your participation is voluntary and your answers will remain strictly confidential.

This usability study is being conducted under the authority of Title 13 USC. The OMB control number for this study is 0607-0725. This valid approval number legally certifies this information collection.

I have volunteered to participate in this Census Bureau usability study, and I give permission for my recordings to be used for the purposes stated above.

Participants Name: _____

Participants Signature: _____ Date: _____

Researcher's Name: _____

Researcher's Signature: _____ Date: _____

Appendix C1 : Background, Computer use, and Internet Experience

Background, Computer user, and Internet Experience

Questionnaire on Statistical Background, Computer Use, and Internet Experience

Your Answers Are Confidential

Participant No.

Demographics

1. Are you male or female? Male Female

2. What is your level of education?

some high school

high school degree

some college

2-year college degree

4-year college degree

grade school

some post graduate study (e.g., M.A., M.B.A., J.D., Ph.D., M.D. programs)

Computer Experience

1. Do you use a computer at home, at work, or both?
(Check all that apply.)

Home

Work

Somewhere else, such as school, library, etc.

No Computer Use

2. If you have a computer at home,

a. What kind of modem do you use at home?

Dial-up

Cable

DSL

Wireless (Wi-Fi)

Other

Don't know

b. Which browser do you typically use at home?

Firefox

Internet Explorer

Netscape

Other

Don't know

c. What operating system does your home computer run in?

MAC OS

Windows 95

Windows 2000

Windows XP

Windows Vista

Other

Don't know

Background, Computer user, and Internet Experience

3. On average, about how many hours do you spend on the Internet per day?

0 hours
 1-3 hours
 4-6 hours
 7 or more hours

4. If you have a tablet PC like an iPad, how many hours do you use it per day?

0 hours
 1-3 hours
 4-6 hours
 7 or more hours

a. If you have a tablet PC like an iPad, which device do you prefer to use at home for basic internet functions such as checking email?

Desktop or Laptop PC
 iPad or other tablet PC

5. Please rate your overall experience with the following :

	No experience			Very Experienced	
Computers	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet	1	2	3	4	5
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. What computer applications do you use?
(Check all that apply.)

E-mail
 Internet
 Word processing (MS-Word, WordPerfect, etc.)
 Spreadsheets (Excel, Louts, Quattro, etc.)
 Accounting or tax software
 Engineering, scientific, or statistical software
 Other applications, please specify

For the following questions, please select one number.

7. How comfortable are you in learning to navigate to new Web sites?

Not Comfortable Comfortable

1 2 3 4 5

8. Computer windows can be minimized, resized, and scrolled through.
 How comfortable are you in manipulating a window?

Not Comfortable Comfortable

1 2 3 4 5

9. How comfortable are you using, and navigating through the Internet?

Not Comfortable

Comfortable

1

2

3

4

5

10. How often do you work with any type of data through a computer?

Never

Very Often

1

2

3

4

5

11. How often do you use the Internet or Web sites to find information?

(e.g., printed reports, news articles, data tables, blogs, etc.)

Never

Very Often

1

2

3

4

5

12. How familiar are you with the US Census Bureau (surveys, data, etc.)?

Unfamiliar

Very familiar

1

2

3

4

5

<<Submit>>

Appendix C2 : Questionnaire for User Interaction Satisfaction (QUIS)

Survey Satisfaction Questionnaires

Questionnaire for User Interaction Satisfaction (QUIS)

Please select the numbers that most appropriately reflect your impressions about using the ACS Online Survey.

Participant No.

1. Overall reaction to the Web Survey:

Dissatisfied Satisfied

1 2 3 4 5 6 7 8 9 10 Not Applicable

2. Overall Appearance:

Dissatisfied Satisfied

1 2 3 4 5 6 7 8 9 10 Not Applicable

3. Use of terminology throughout the survey:

Dissatisfied Satisfied

1 2 3 4 5 6 7 8 9 10 Not Applicable

4. Instructions displayed on the screens:

Dissatisfied Satisfied

1 2 3 4 5 6 7 8 9 10 Not Applicable

5. Ease with which you could move:

Dissatisfied Satisfied

1 2 3 4 5 6 7 8 9 10 Not Applicable

6. Knowing where you were in the form:

Dissatisfied Satisfied

1 2 3 4 5 6 7 8 9 10 Not Applicable

7. Organization of question, instructions, and response categories in the survey:

Dissatisfied Satisfied

1 2 3 4 5 6 7 8 9 10 Not Applicable

8. Forward navigation

Dissatisfied Satisfied

1 2 3 4 5 6 7 8 9 10 Not Applicable

9. Overall experience of completing the survey:

Dissatisfied Satisfied

1 2 3 4 5 6 7 8 9 10 Not Applicable

10. Additional Comments:

<<Submit>>

Appendix D: Heatmaps of Eye-tracking Data

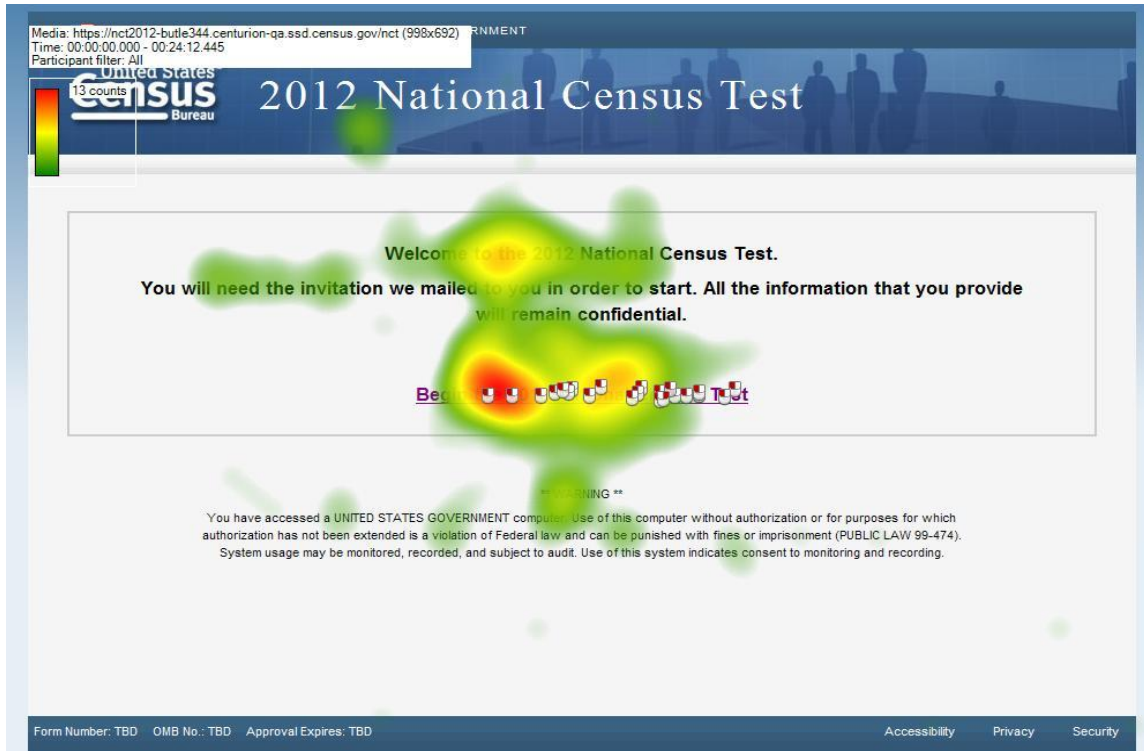


Figure D1: Welcome (n=20)

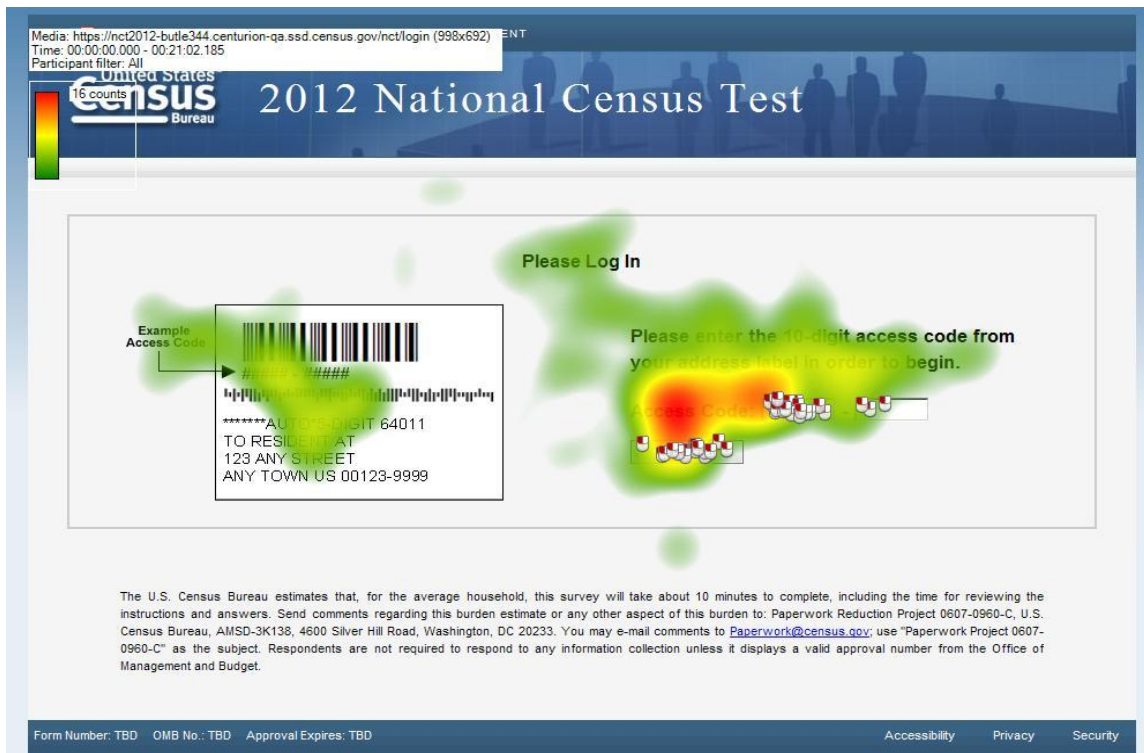


Figure D2: Login (n=20)

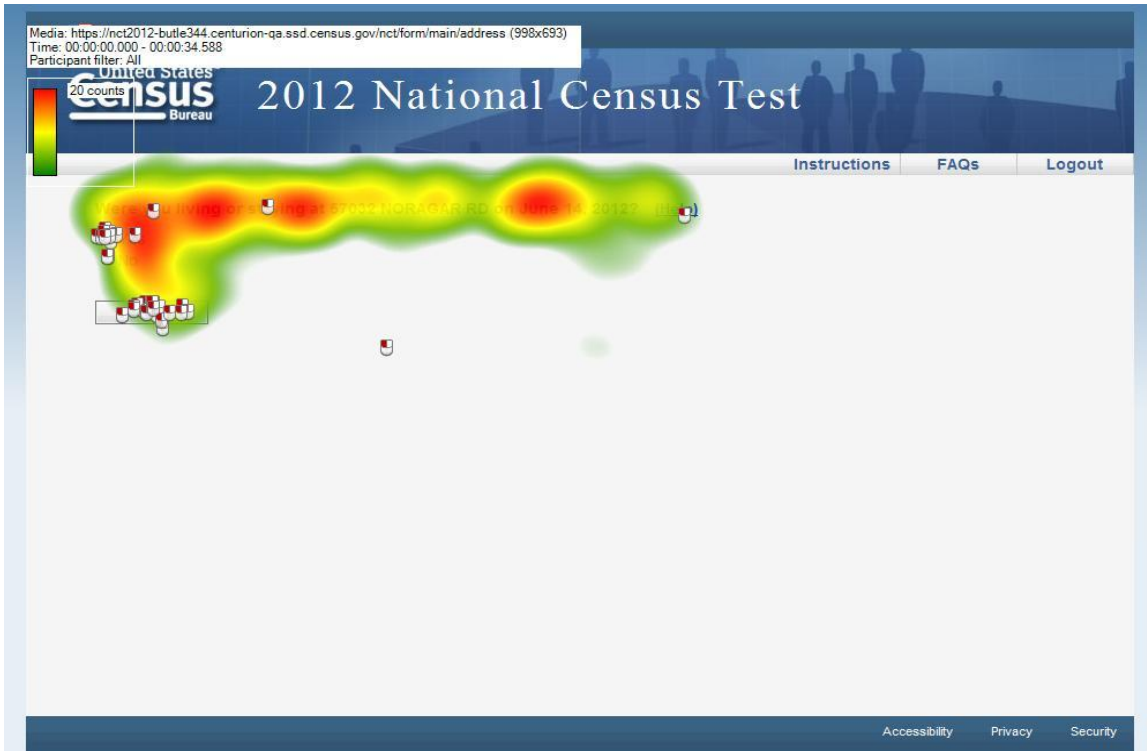


Figure D3: Address (n=20)

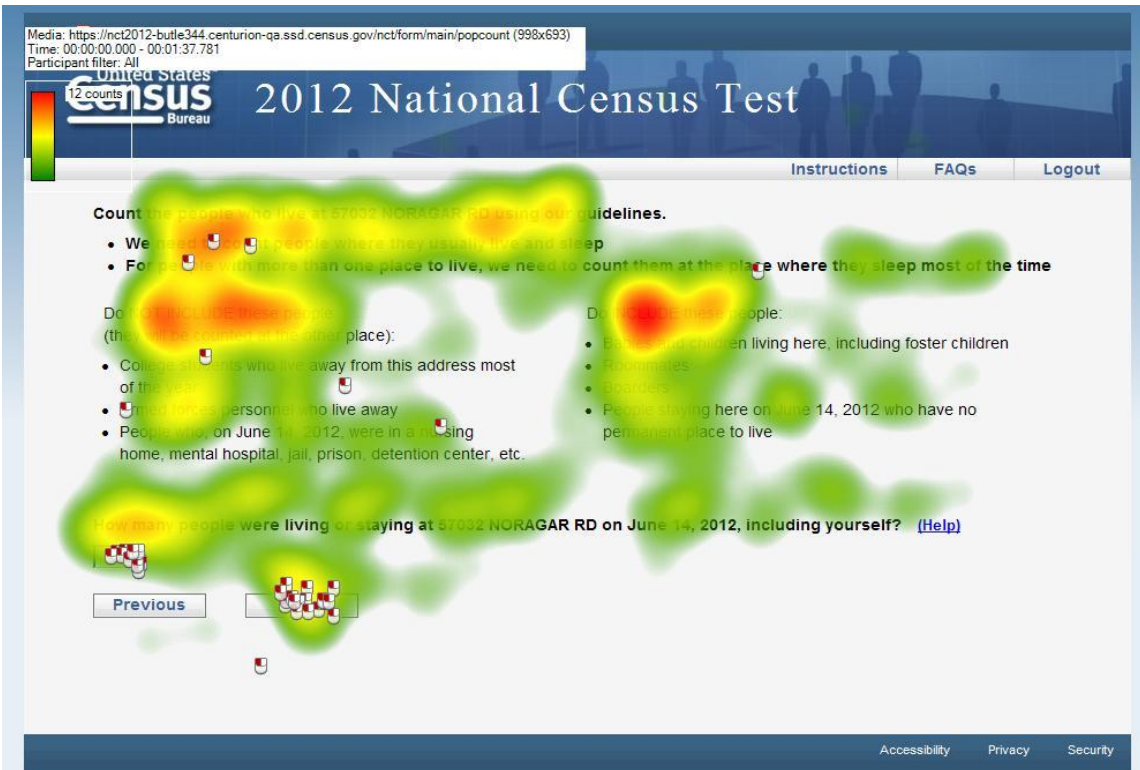


Figure D4: Popcount (n=10)

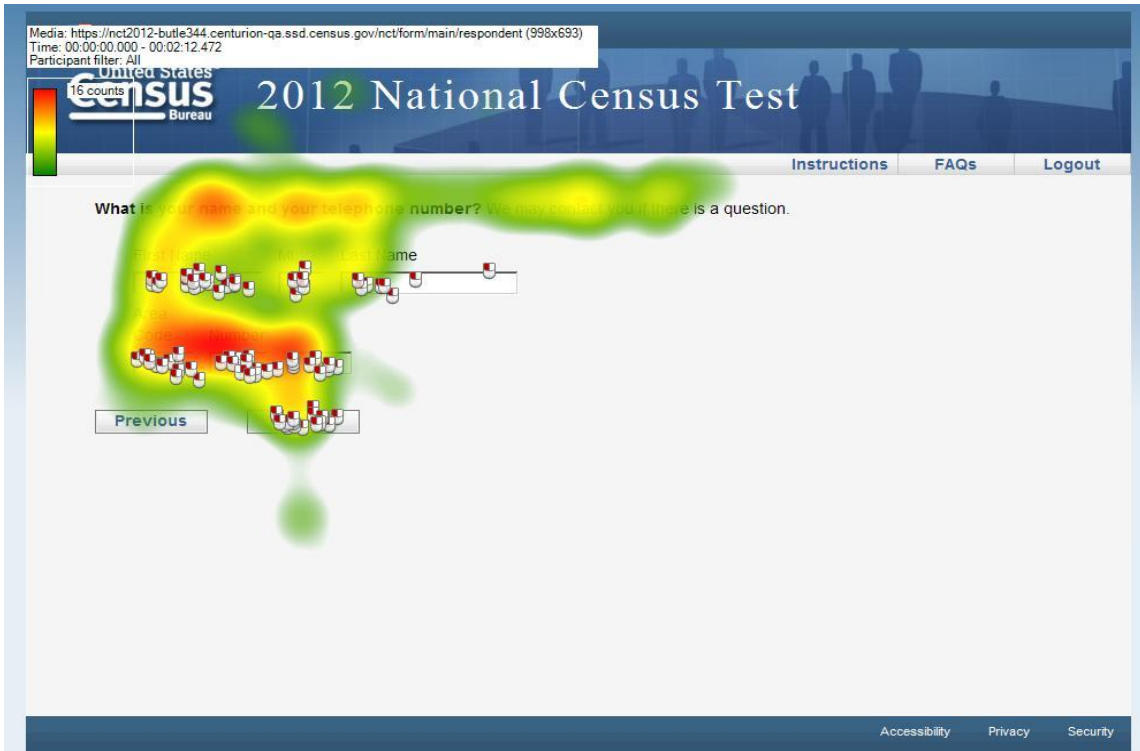


Figure D5: Respondent (n=20)

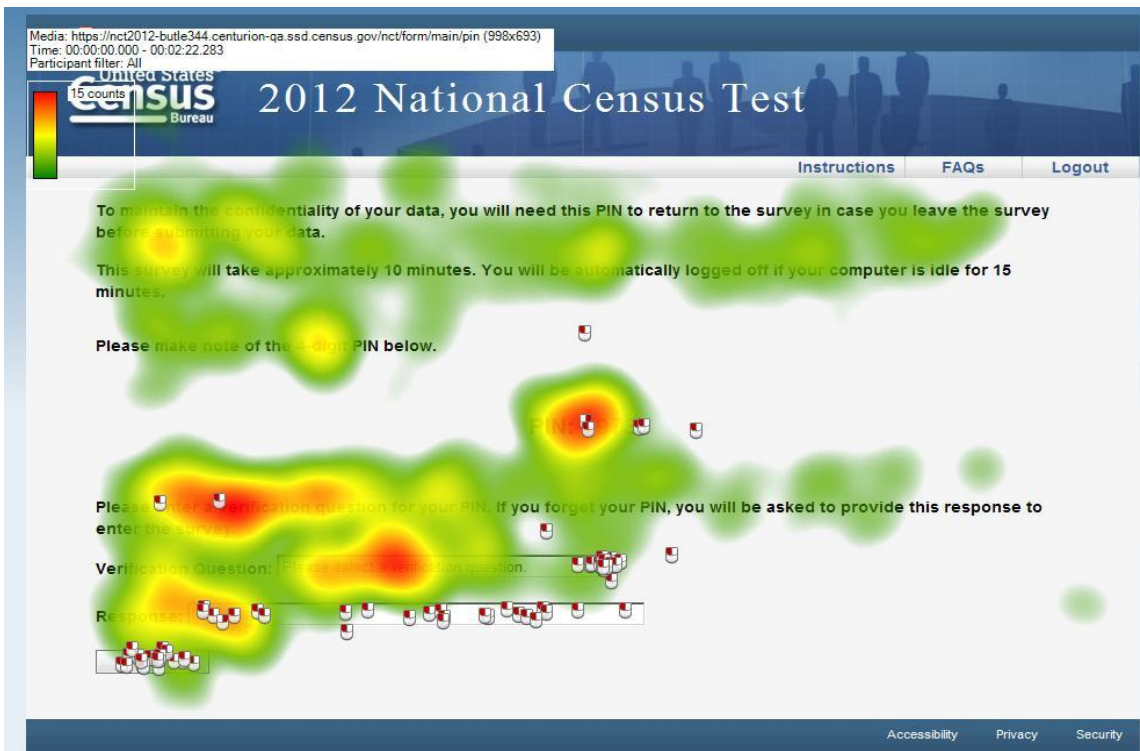


Figure D6: PIN (n=20)

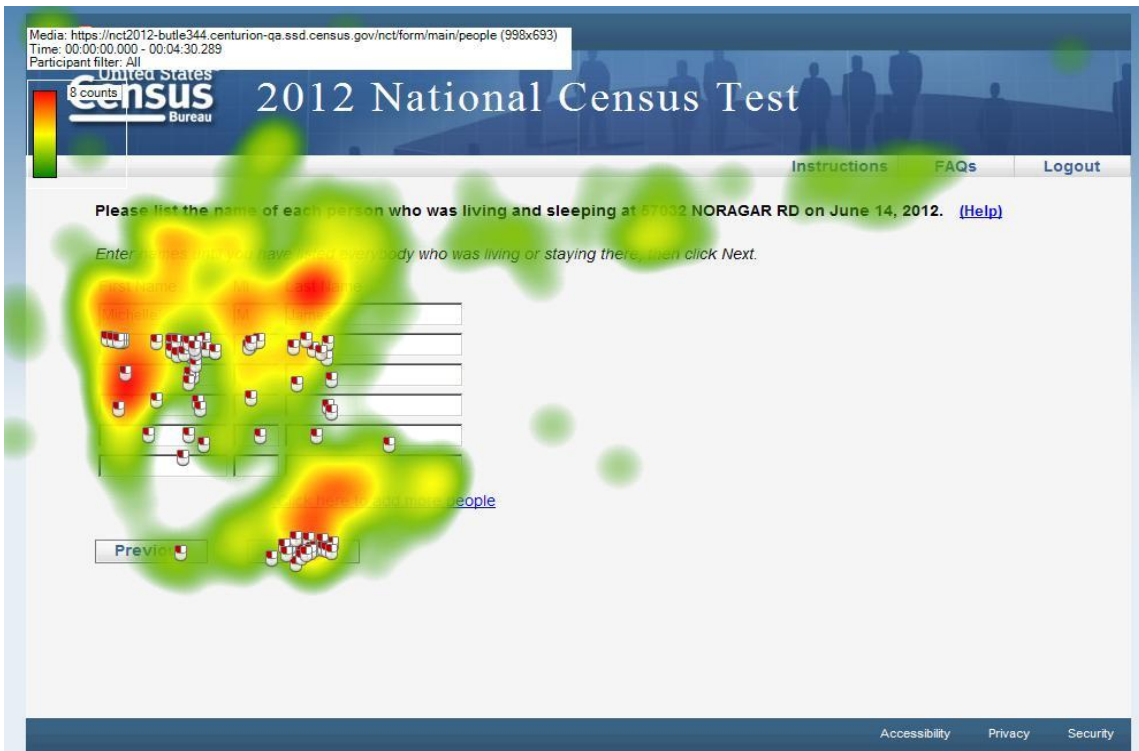


Figure D7: People (n=20)

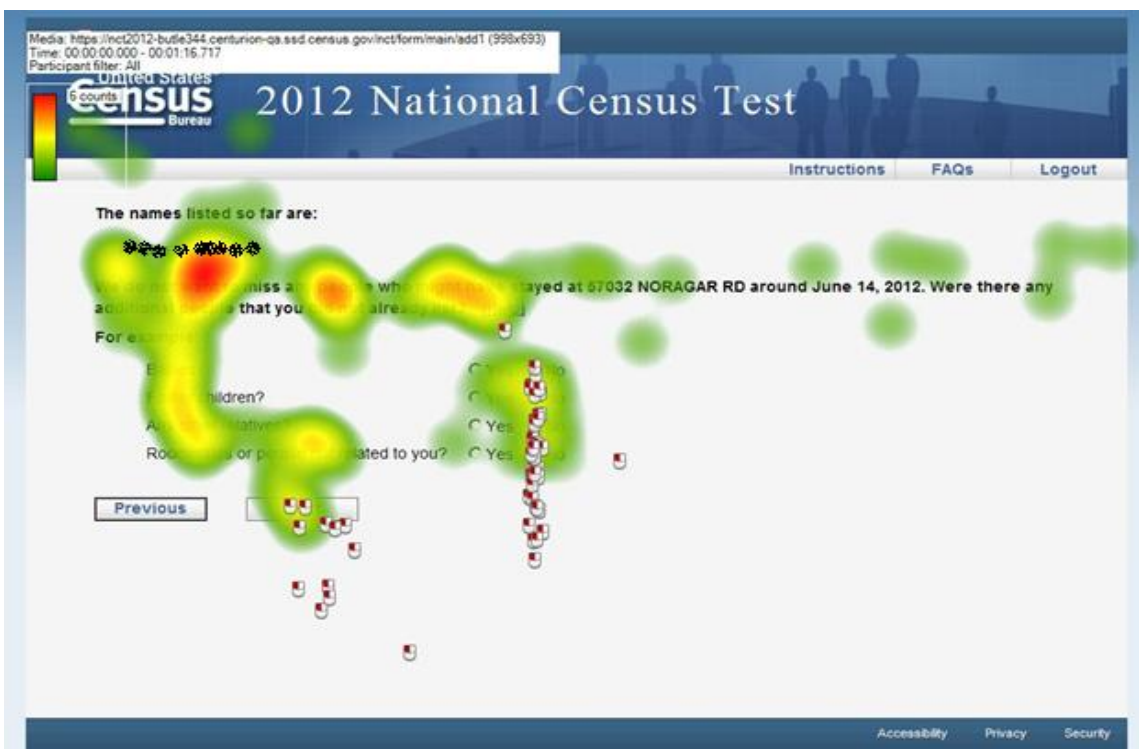


Figure D8: Add1 (n=10)

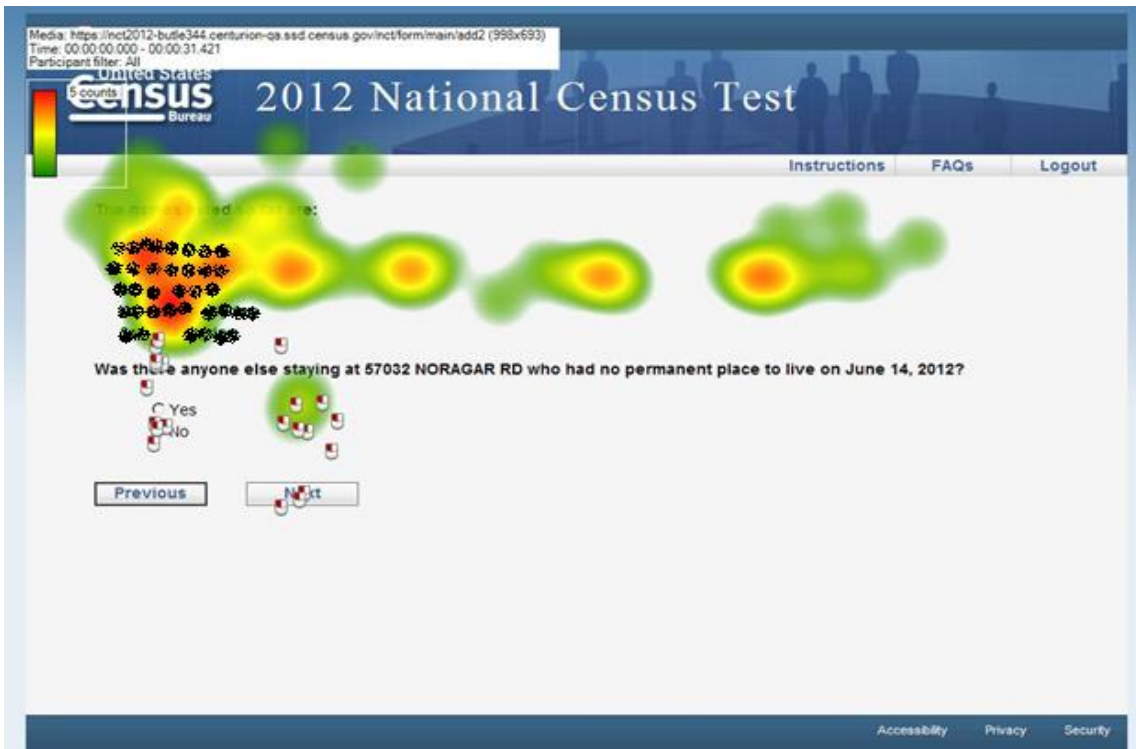


Figure D9: Add2 (n=10)

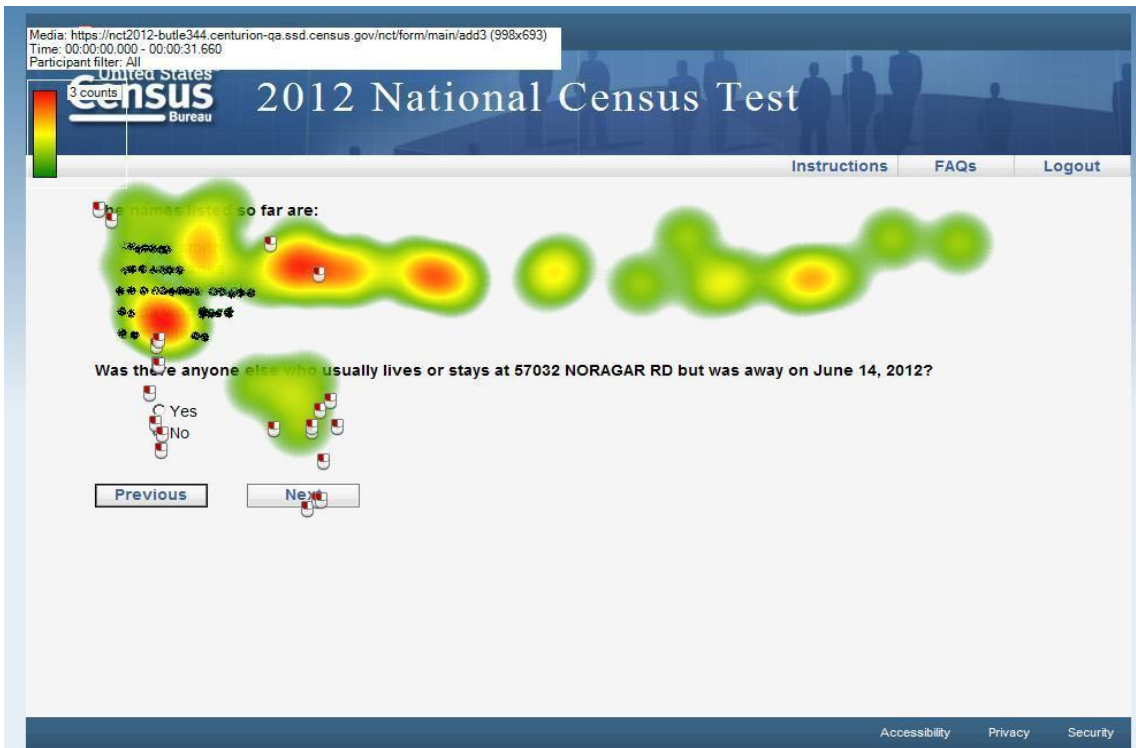


Figure D10: Add3 Page (n=10)

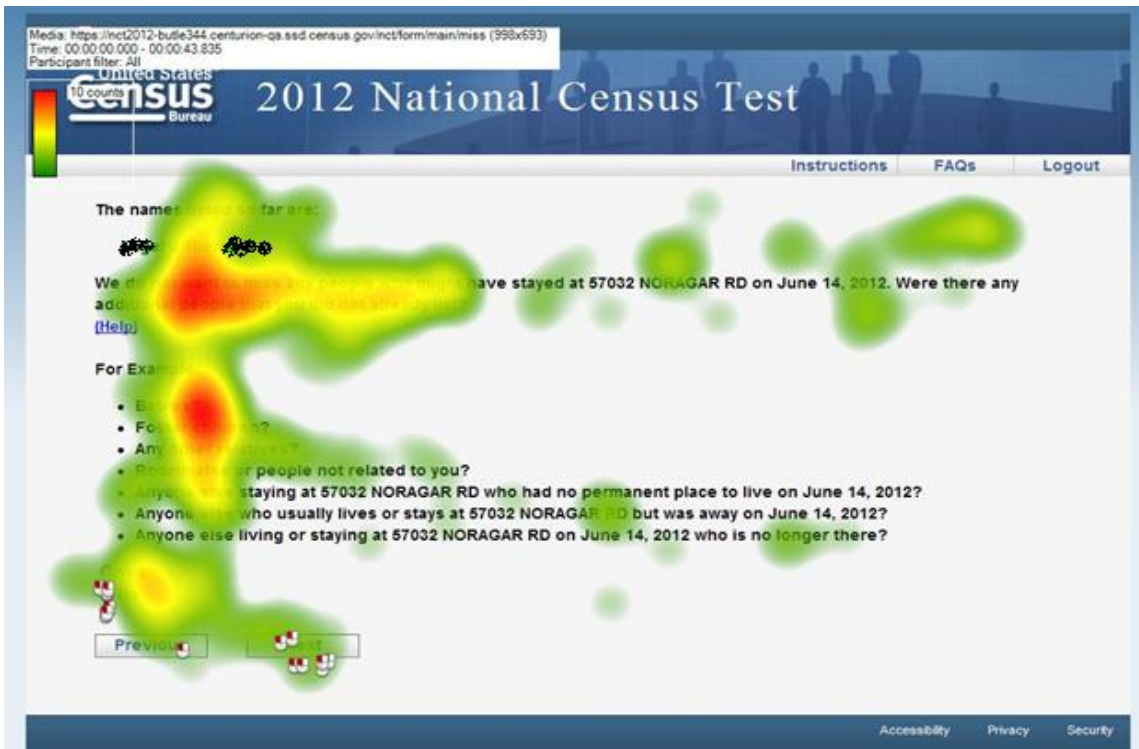


Figure D11: Miss (n=7)

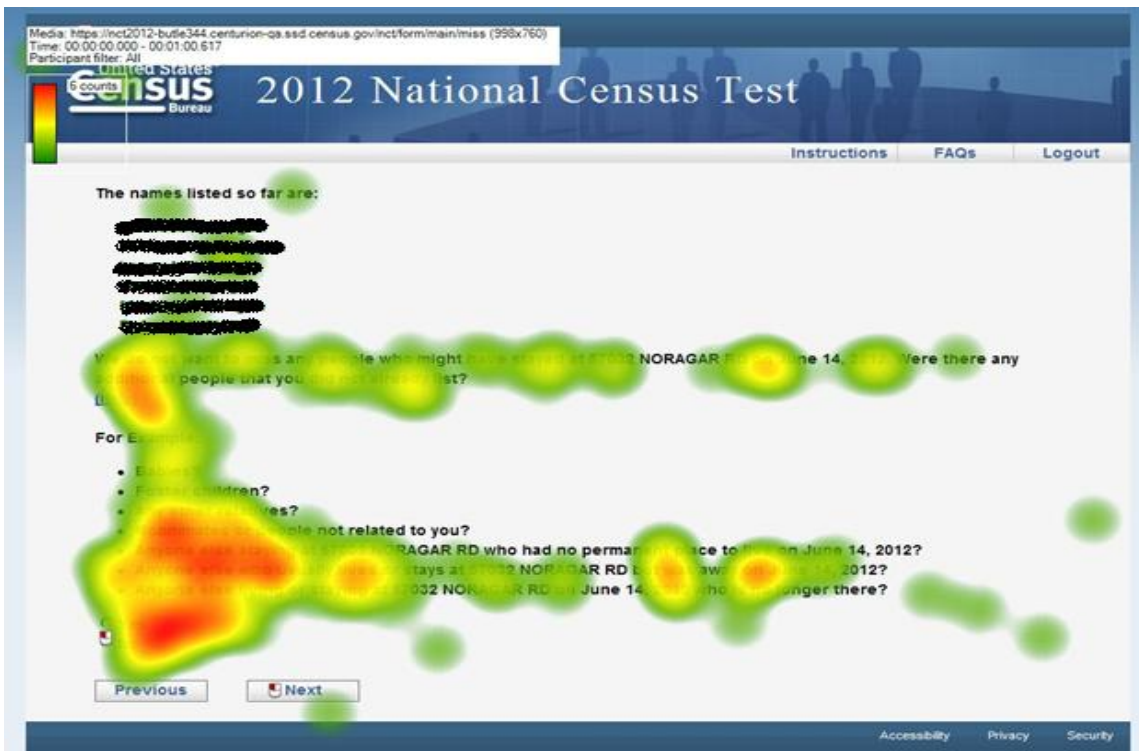


Figure D12: Miss (n=1)

The black shadow is used to hide the name of the participant due to the privacy reasons.

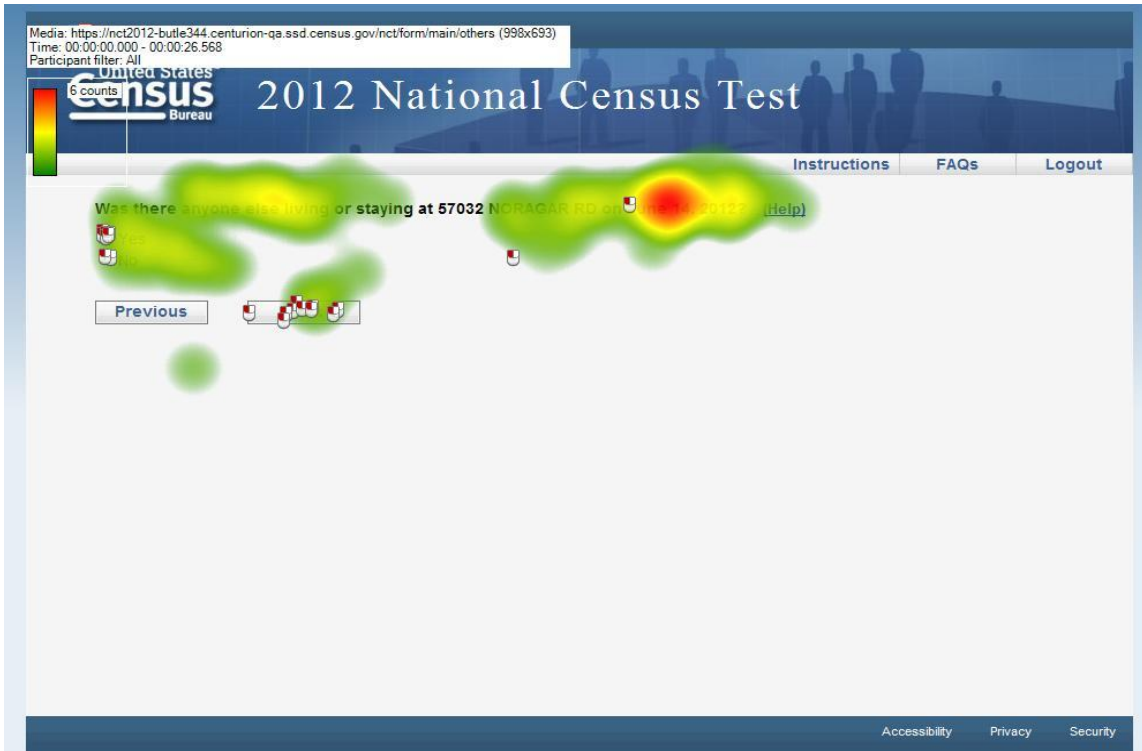


Figure D13: Other (n=10)

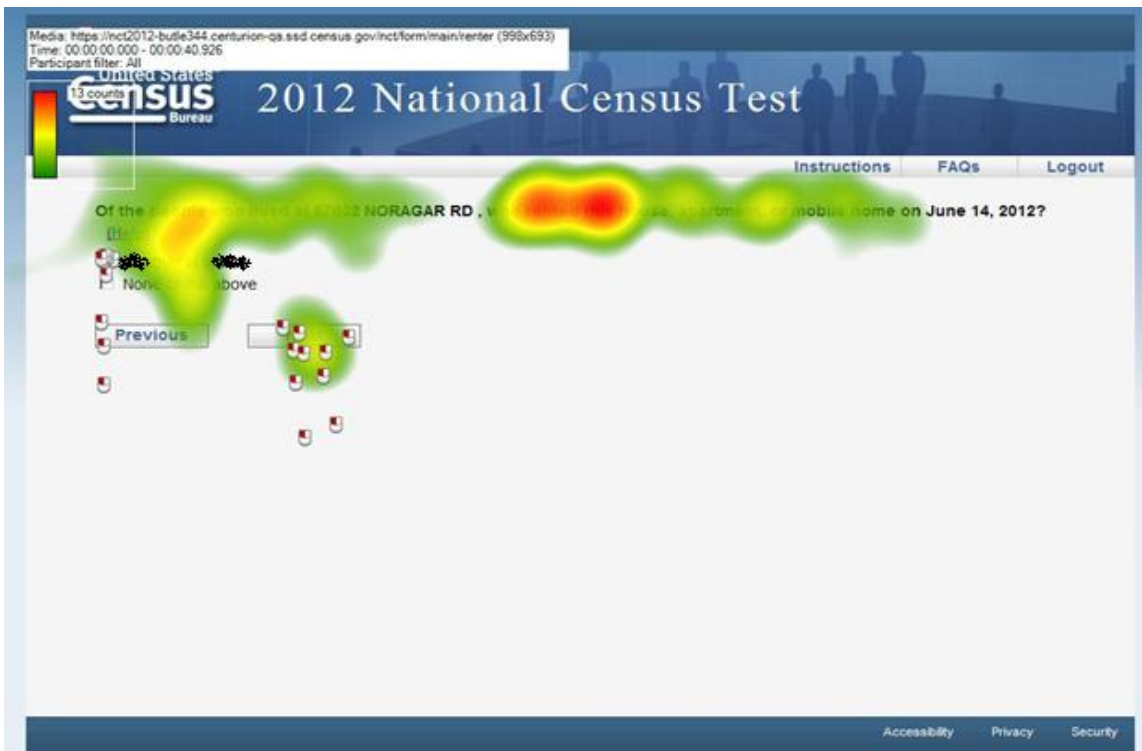


Figure D14: Renter Page (n=10)

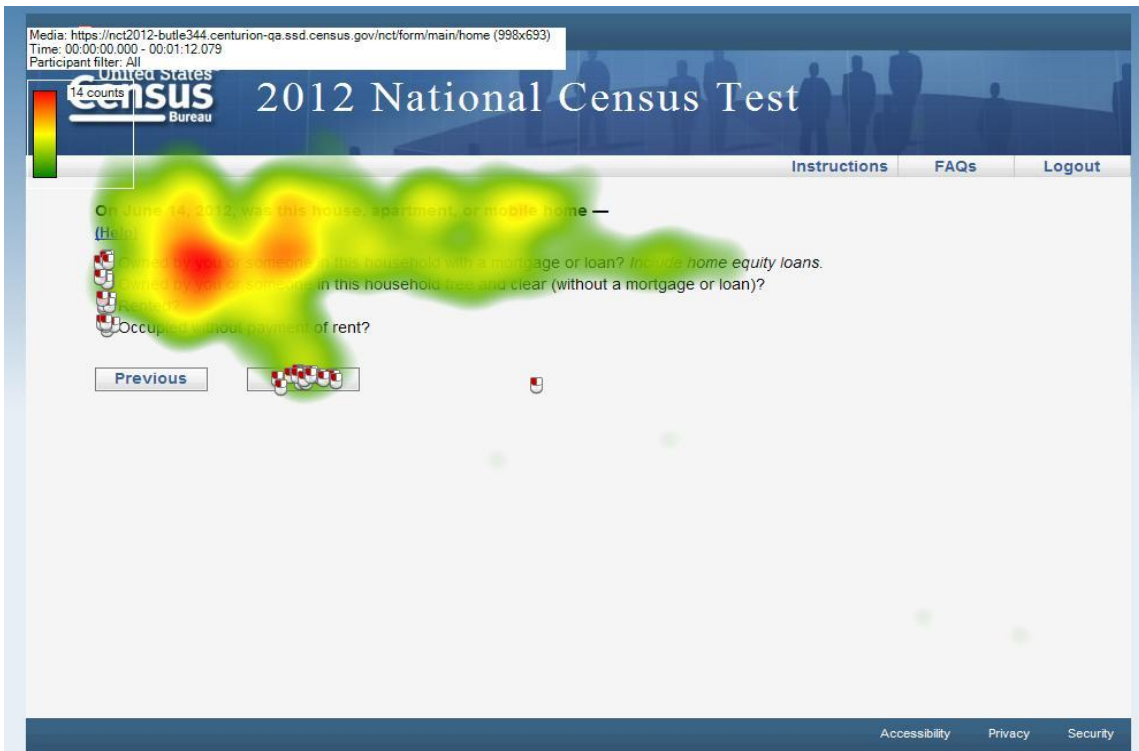


Figure D15: Home (n=20)

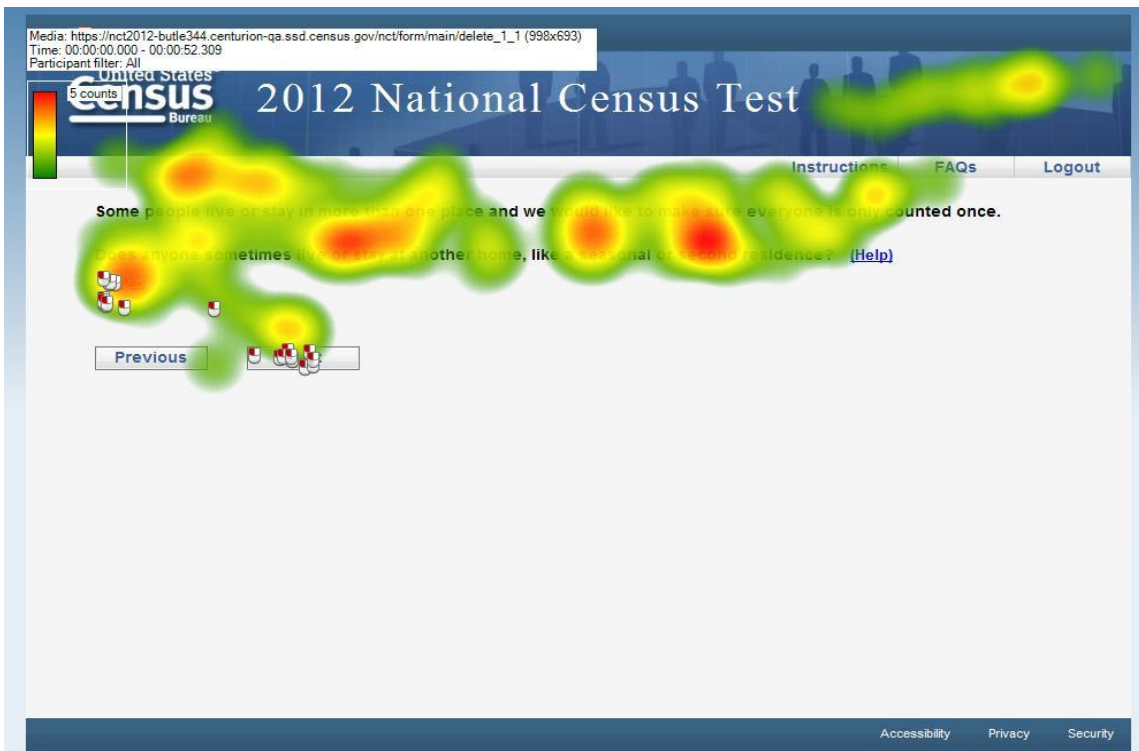


Figure D16: Delete1 (n=10)

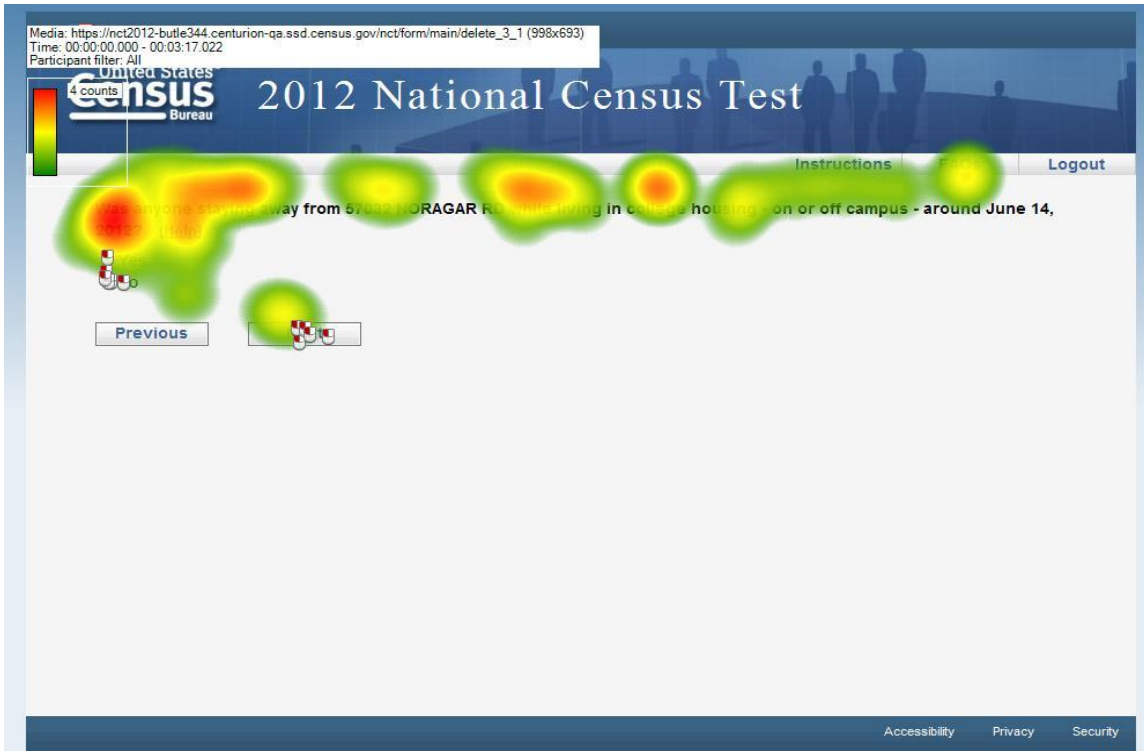


Figure D17: Delete3_1 (n=6)

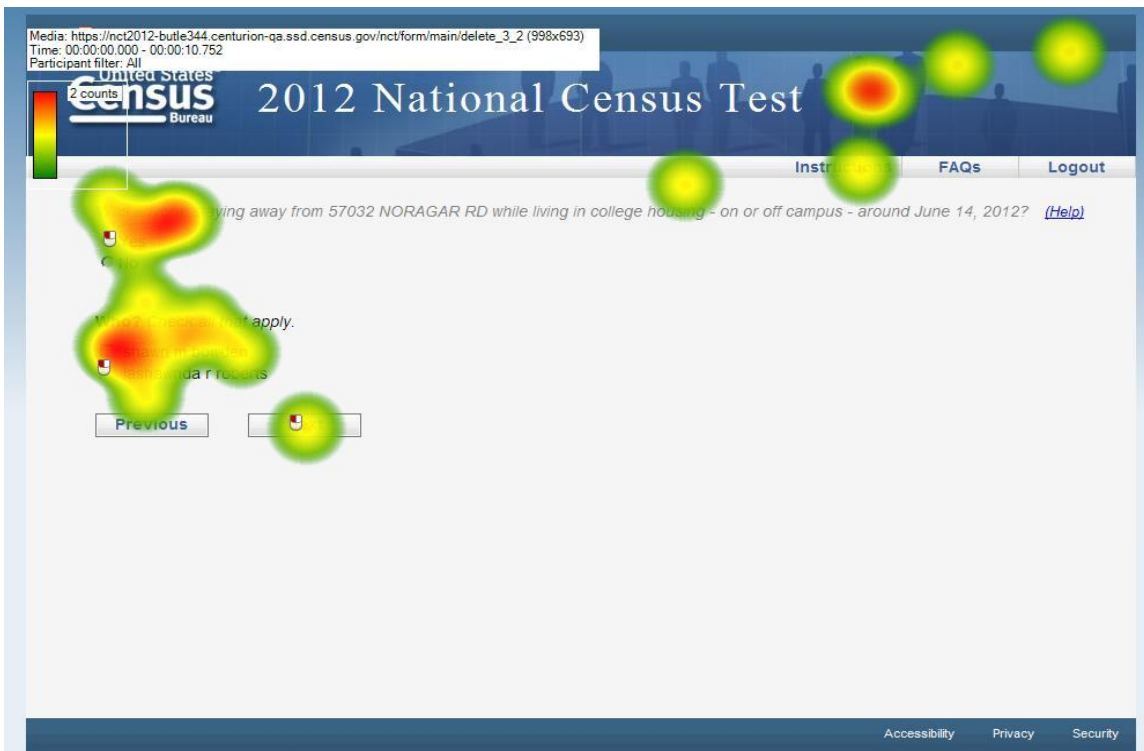


Figure D18: Delete3_2 (n=1)

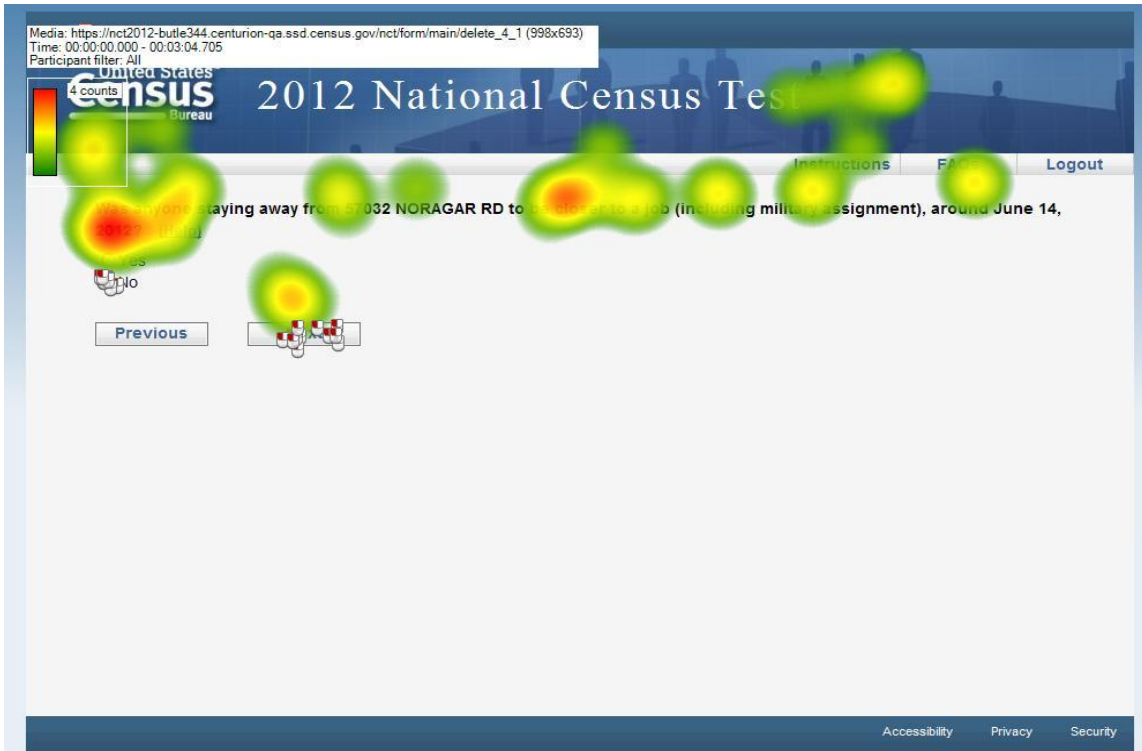


Figure D19: Delete4 page (n=10)

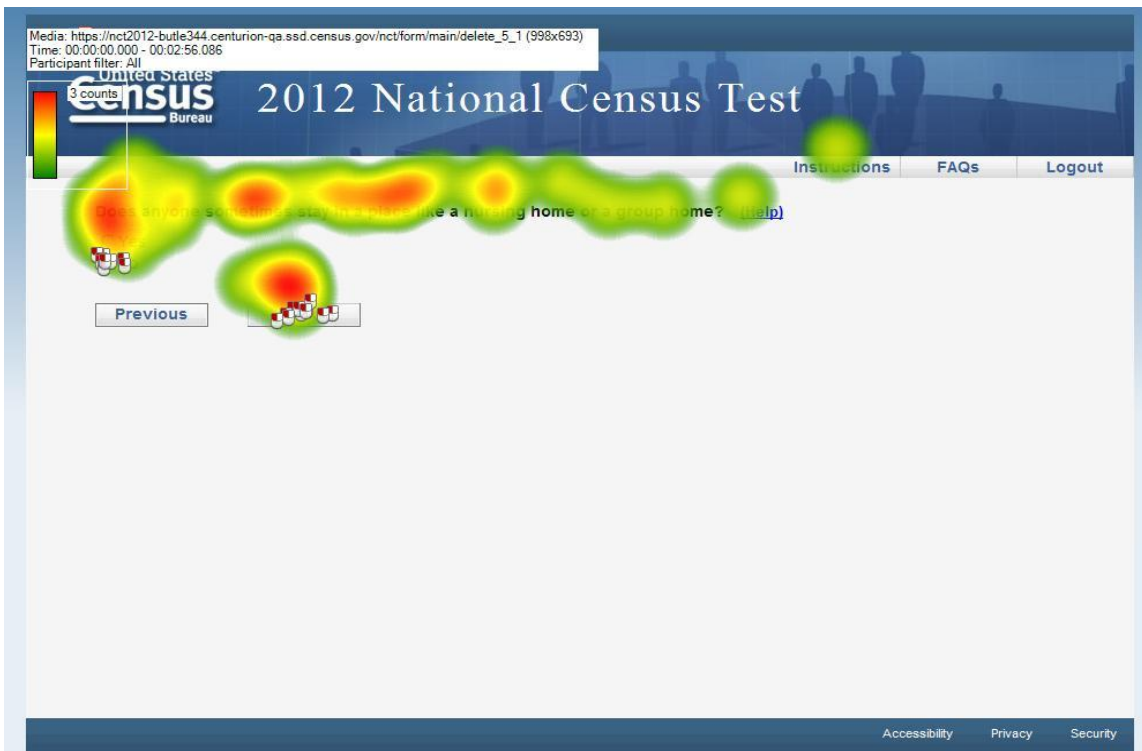


Figure D20: Delete5_1 (n=10)

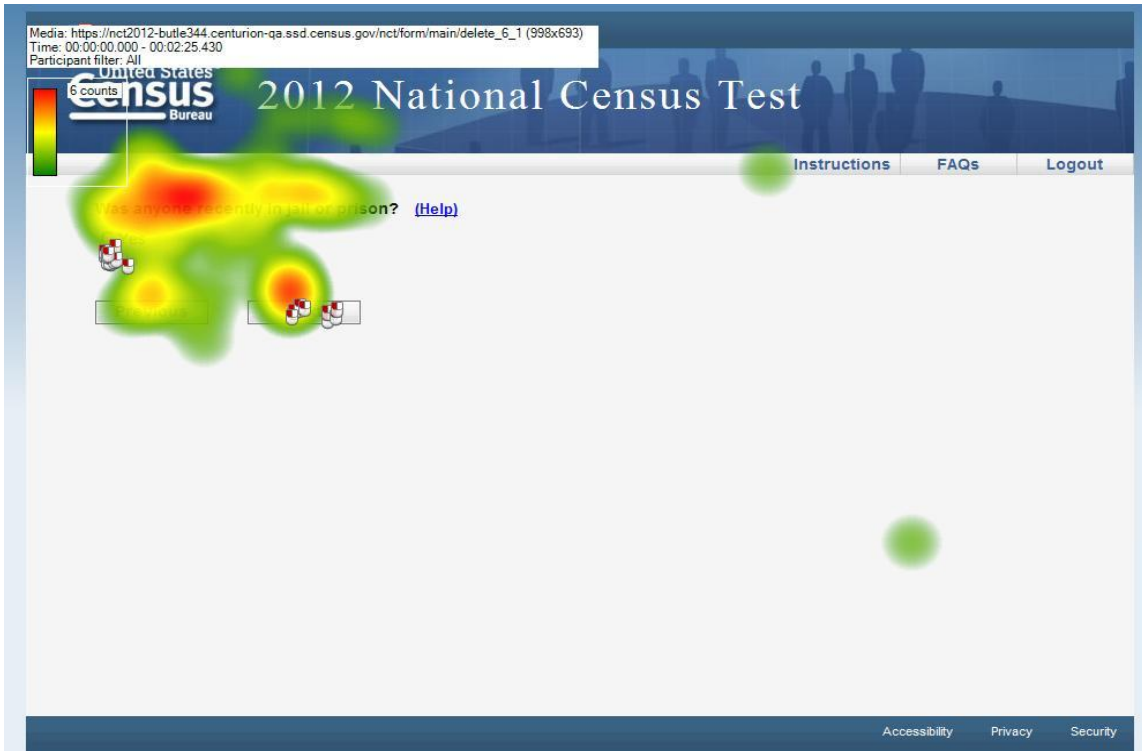


Figure D21: Delete6_1 (n=10)

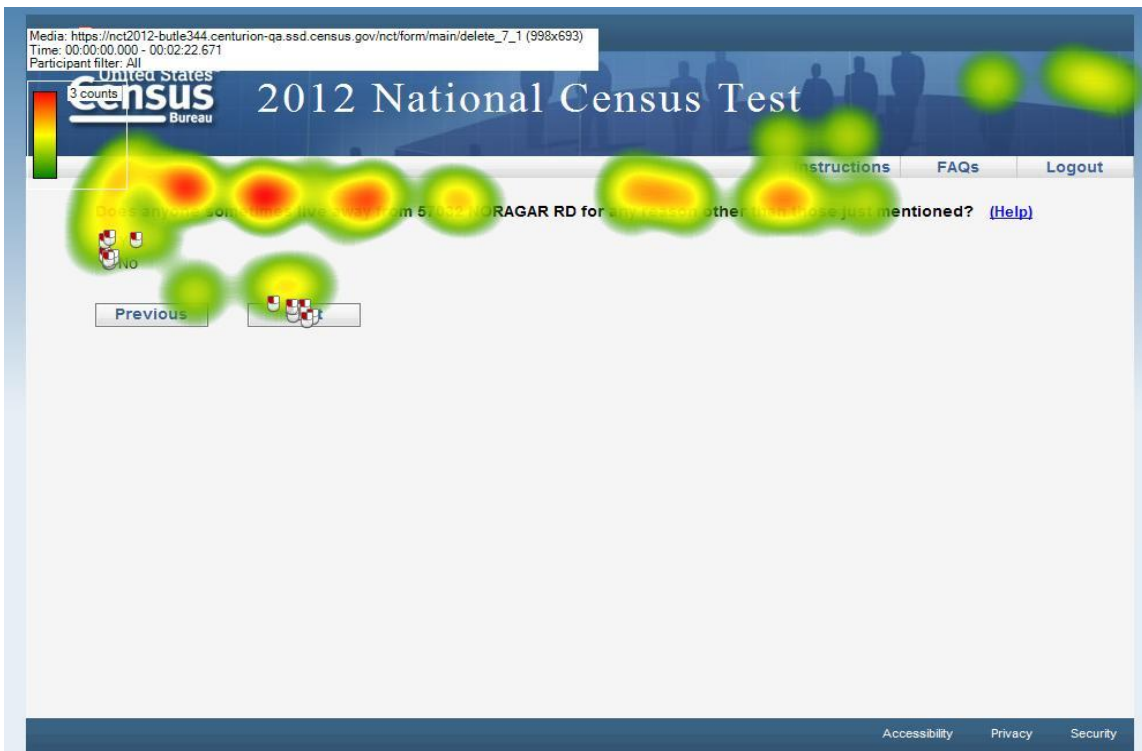


Figure D22: Delete7_1(n=10)

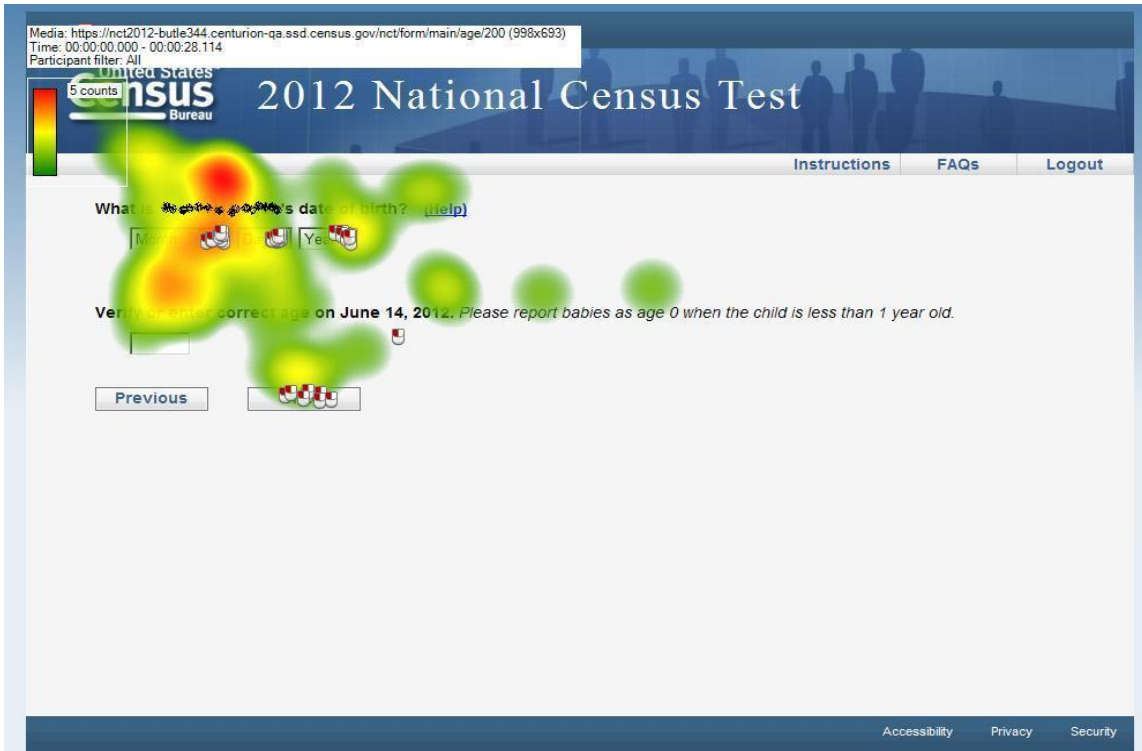


Figure D23: Age (n=1)

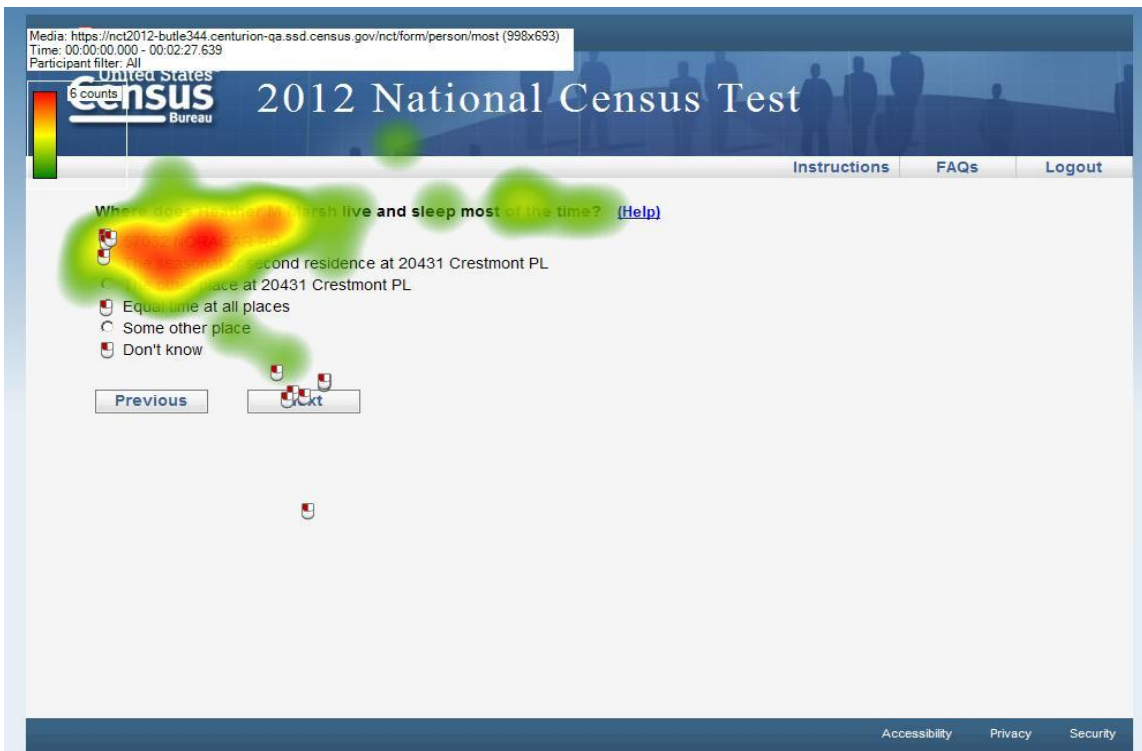


Figure D24: Most (n=6)

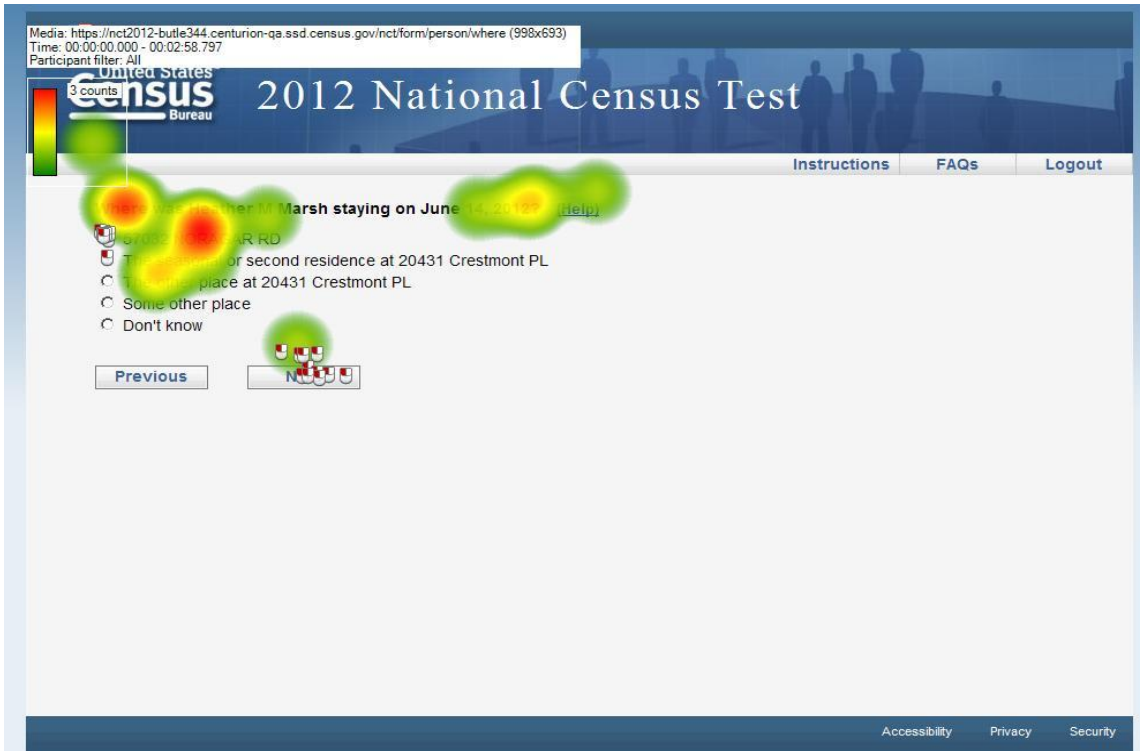


Figure D25: Where (n=6)

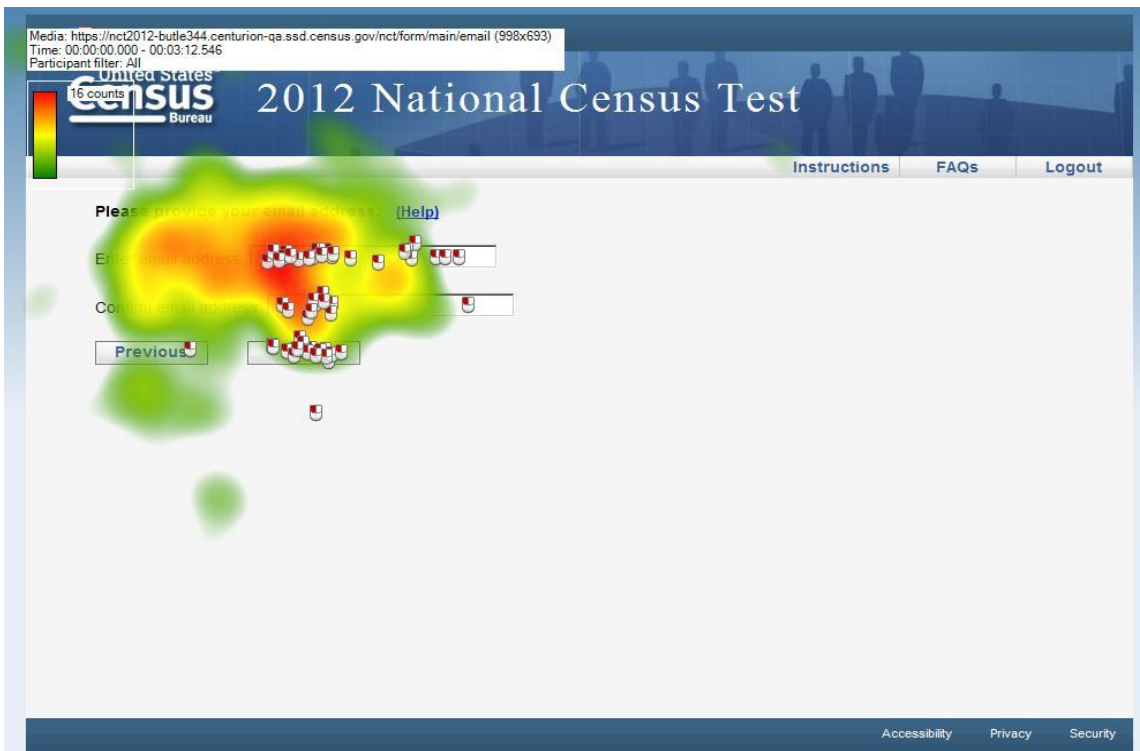


Figure D26: Email (n=20)

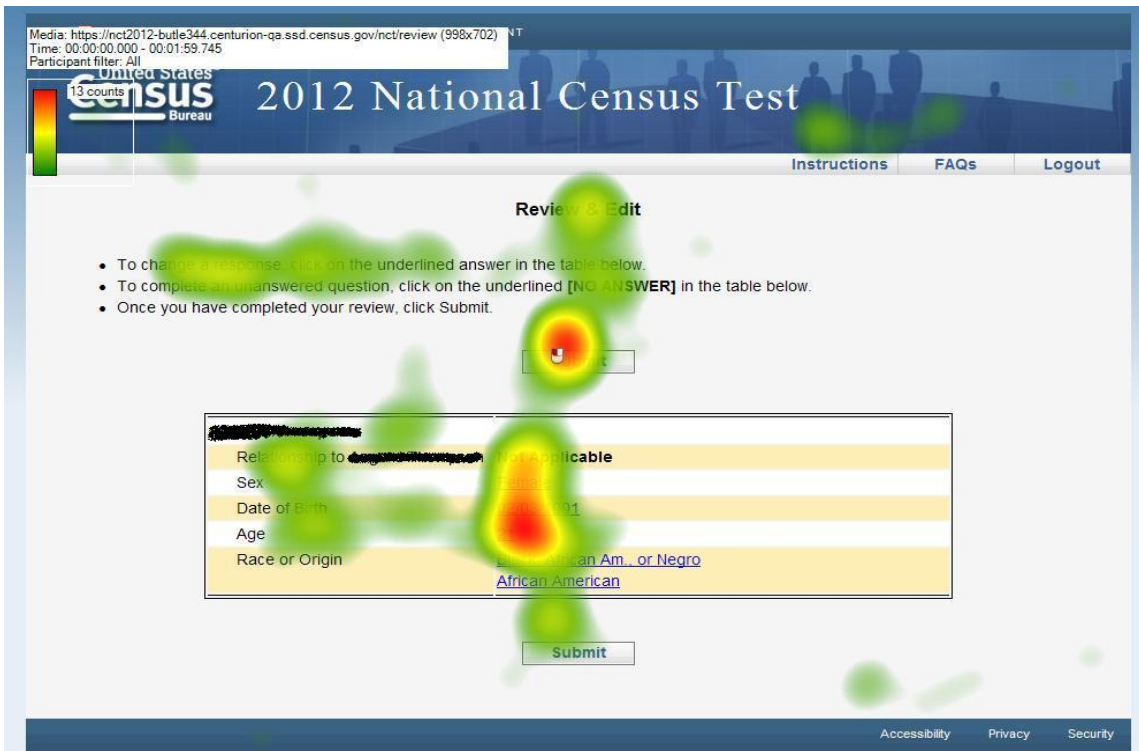


Figure D27: Review (n=1)

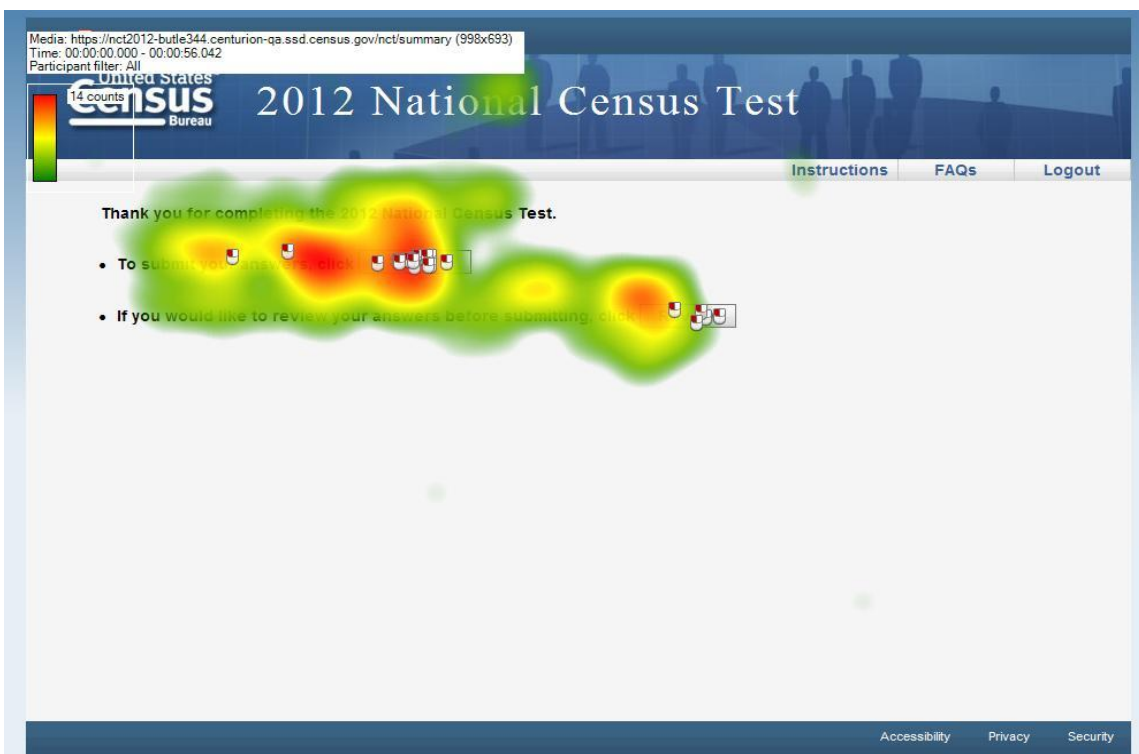


Figure D28: Summary (n=20)

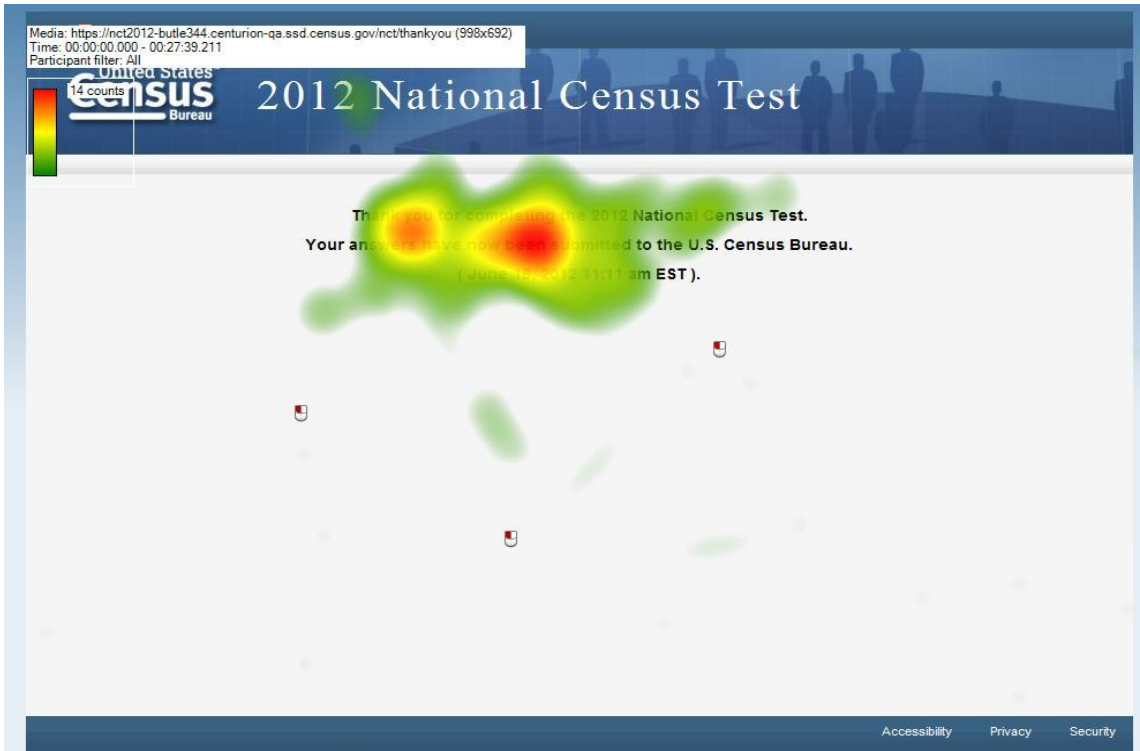


Figure D29: Thank you (n=20)

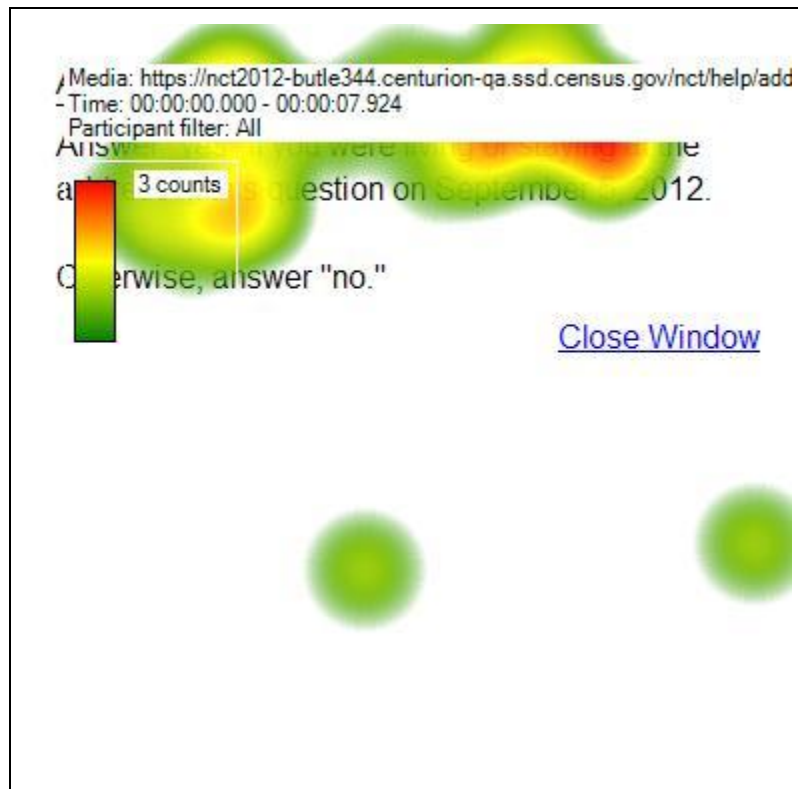


Figure D30: Help (Add person)

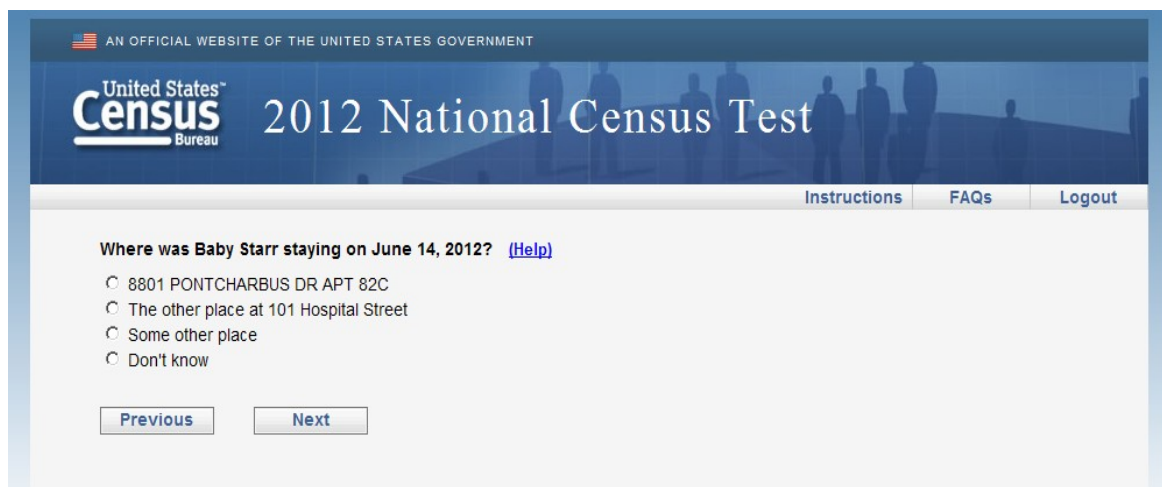
Appendix E: Scenario Results

At the end of the survey, the participants were asked to answer the scenario questions. Most of the participants were able to answer most of the scenario questions. Because of time constraints (e.g., participants' daily schedules), some participants did not complete all of the scenario questions within their usability sessions. Table E1 at the end of this appendix shows how the participants answered the scenario questions and the date when they took the survey. The results from the seven test scenarios are explained below. Census Day was June 14, 2012, so this date was in the future for some participants, on that day for a few, and in the past for the rest.

Scenario 1

Brenda was eight months pregnant and delivered her baby prematurely. Brenda is allowed to leave the hospital, but the newborn has to stay in the hospital and gain a little weight before coming home. Brenda is at home at “8801 PONTCHARBUS DRIVE,” filling out this survey.

Question 1: Where was Baby Starr staying on June 14, 2012?



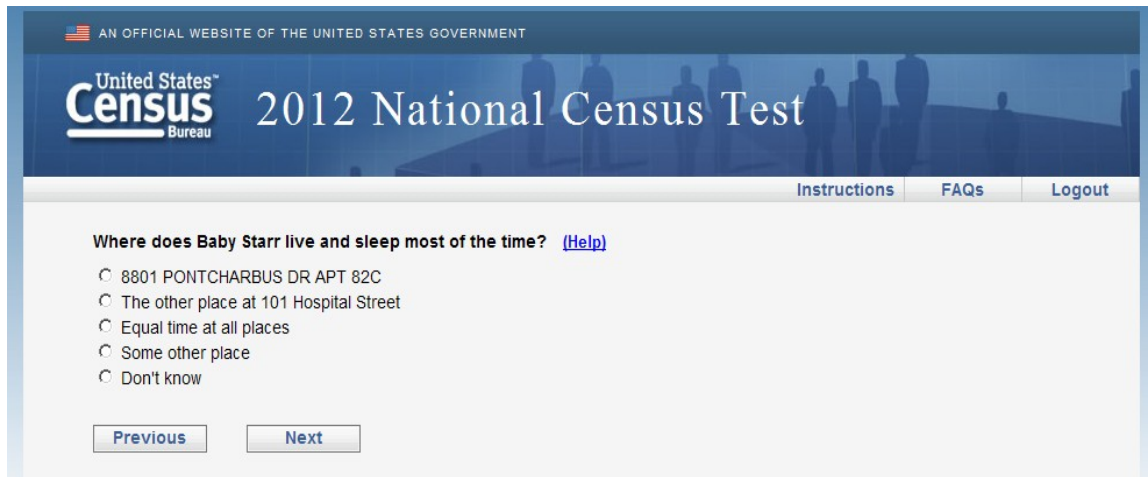
The screenshot shows the top of the 2012 National Census Test interface. At the top, it says "AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT" and "United States Census Bureau". The main heading is "2012 National Census Test". There are links for "Instructions", "FAQs", and "Logout". The question is "Where was Baby Starr staying on June 14, 2012?" with a "(Help)" link. The options are: "8801 PONTCHARBUS DR APT 82C", "The other place at 101 Hospital Street", "Some other place", and "Don't know". There are "Previous" and "Next" buttons at the bottom.

The participants were shown the above screen shot and asked to pick one of the answers from a list of four possible answers. Out of 19 participants, 13 answered by choosing “The other place at 101 Hospital Street.” Most of the participants said that since the baby has never been to home, they decided to choose the hospital address to answer this question. There were four participants who said that they would answer by selecting “8801 PONTCHARBUS DR” and their reasoning was that since the baby will be home sooner or later, the baby should be counted in the family residence. The remaining two participants chose “Some other place”. None of the participants chose “Don’t know.”

The baby would have been at the hospital on or before the sessions on June 14. For sessions after June 14, if participants asked, we told them that the baby was born before June 14.

The ideal answer for this question was Brenda’s House at 8801 PONTCHARBUS DR.

Question 2: Where does Baby Starr live and sleep most of the time?



The screenshot shows the interface for the 2012 National Census Test. At the top, it says "AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT" and "United States Census Bureau". The main heading is "2012 National Census Test". There are links for "Instructions", "FAQs", and "Logout". The question is "Where does Baby Starr live and sleep most of the time?" with a "(Help)" link. The options are: "8801 PONTCHARBUS DR APT 82C", "The other place at 101 Hospital Street", "Equal time at all places", "Some other place", and "Don't know". There are "Previous" and "Next" buttons at the bottom.

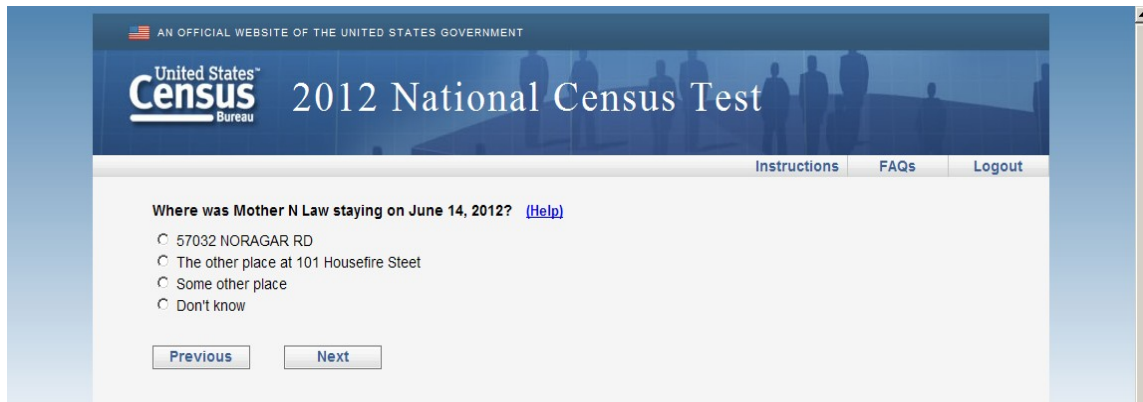
For this question, 11 out of 19 participants selected “8801 PONTCHARBUS DR.” Their logic was the baby will be back home eventually and will be sleeping in the residence address most of the time. The remaining eight participants chose to select “101 Hospital Street” and their reasoning was that the baby is currently in the hospital and living and sleeping there most of the time. None of the participants answered by choosing the remaining response categories: “Equal time at all places”, “Some other place” and “Don’t know.”

The optimal answer for this question was the hospital address.

Scenario 2

Barry's in-laws have been staying with him and his wife for the past three months, since their home burned down. The in-laws have awesome homeowners insurance and their home will be rebuilt within the next eight months. Until then, and much to Barry's dismay, his in-laws are going to be sleeping in the guest bedroom at “57032 NORGAR ROAD”.

Question 1: Where was Mother N Law staying on June 14, 2012?

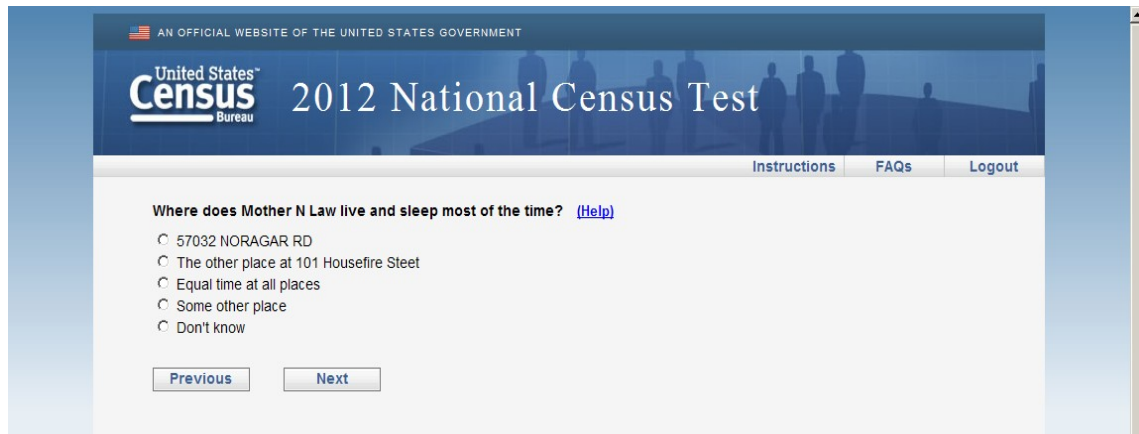


The screenshot shows the official website of the United States Census Bureau for the 2012 National Census Test. The header includes the United States Census Bureau logo and the text "2012 National Census Test". Below the header, there are navigation links for "Instructions", "FAQs", and "Logout". The main content area displays the question: "Where was Mother N Law staying on June 14, 2012?" with a "(Help)" link. Below the question, there are four radio button options: "57032 NORAGAR RD", "The other place at 101 Housefire Steet", "Some other place", and "Don't know". At the bottom of the question area, there are two buttons: "Previous" and "Next".

For this question, 18 out of 19 participants who answered the question selected “57032 NORGAR RD.” They said that since Barry’s in-laws have been staying with him for the past three months and going to be staying with him for at least another five to six months, this should be the appropriate answer. One participant selected “101 Housefire Street,” the in-laws’ old address. None of the participants picked any of the other remaining answers: “Some other place” and Don’t know.

The ideal answer for this question would have been Barry’s house at “57032 NORGAR RD.”

Question 2: Where Does Mother N Law live and sleep most of the time?



The screenshot shows the official website of the United States Census Bureau for the 2012 National Census Test. The header includes the United States Census Bureau logo and the text "2012 National Census Test". Navigation links for "Instructions", "FAQs", and "Logout" are visible. The question is: "Where does Mother N Law live and sleep most of the time?" with a "(Help)" link. The options are: "57032 NORAGAR RD", "The other place at 101 Housefire Steet", "Equal time at all places", "Some other place", and "Don't know". "Previous" and "Next" buttons are located at the bottom of the question area.

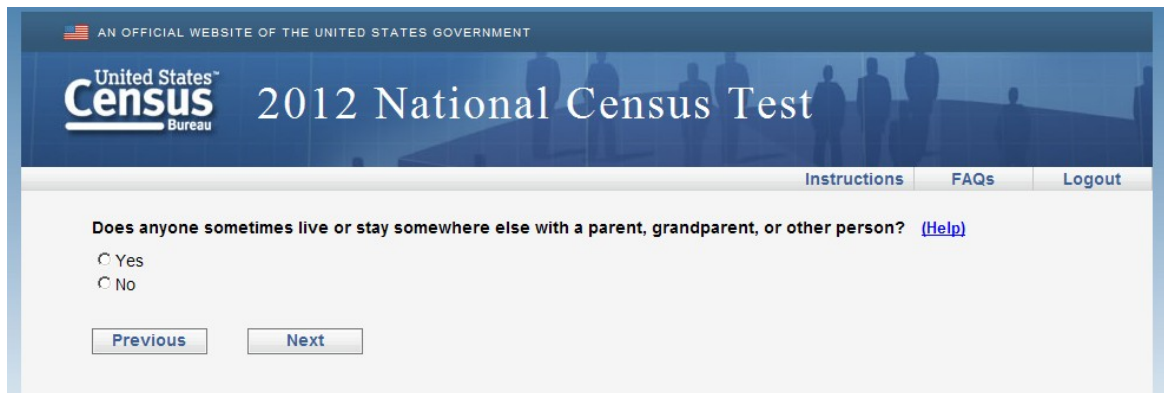
The 19 participants who answered the above question had various reasons for choosing their responses. Fourteen participants chose to answer “57032 NORAGAR RD” and their explanation was the Mother N Law is living and sleeping in Barry’s house most of the time. The remaining four participants said that the answer should be “101 Housefire Street” as they are used to live and sleep there most of the time and are going to move in their permanent residence eventually; Barry’s residence is just their temporary residence. One participant chose to answer “Don’t know.”

The optimal answer to the question was Barry’s house at “57032 NORAGAR RD.”

Scenario 3

Suzy is eight years old and lives with her mother. Suzy spends every summer with her father, who lives in another state. The day Suzy's mom fills out this survey, Suzy has been with her father for the last few weeks and will not return to her mother's home at "57032 NORGAR ROAD" for another few months.

Question 1: Does anyone sometimes live or stay somewhere else with a parent, grandparent, or other person?



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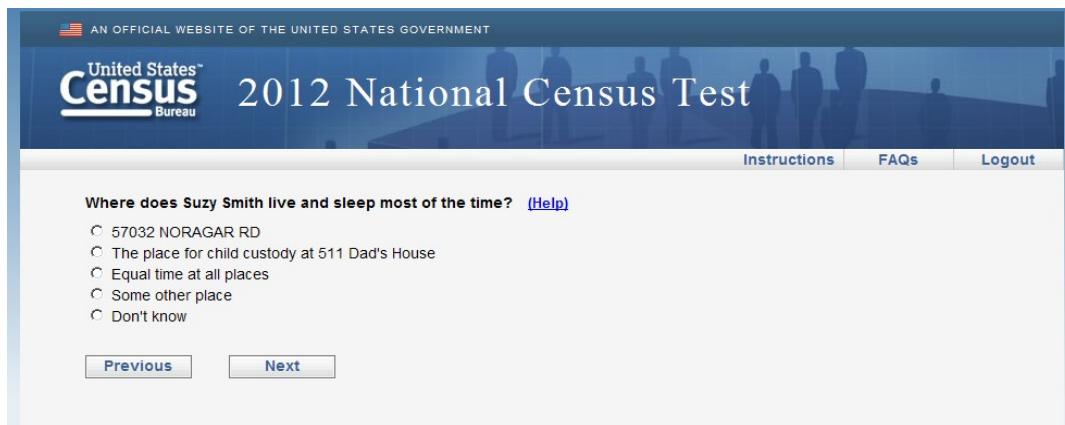
Does anyone sometimes live or stay somewhere else with a parent, grandparent, or other person? [\(Help\)](#)

Yes
 No

[Previous](#) [Next](#)

All 18 participants answered by saying "Yes," which was the ideal answer for this scenario and question.

Question 2: Where does Suzy Smith live and sleep most of the time?



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Where does Suzy Smith live and sleep most of the time? [\(Help\)](#)

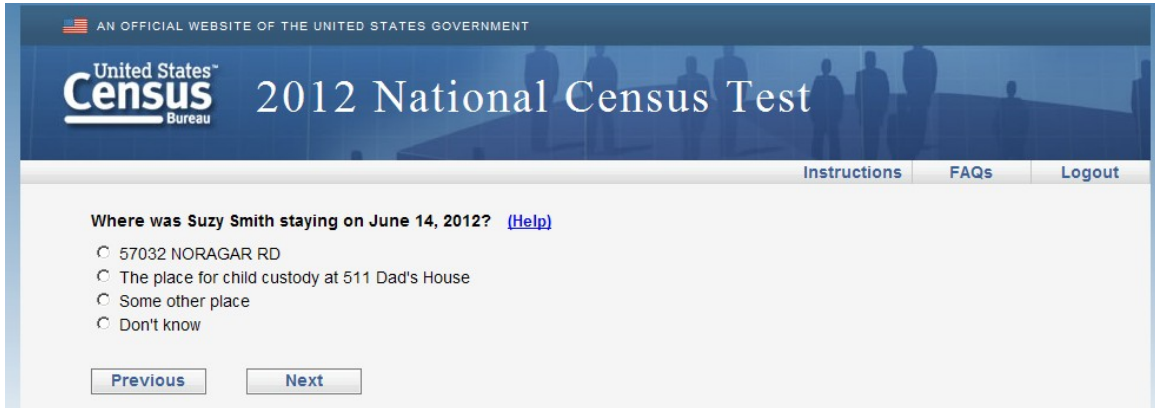
57032 NORAGAR RD
 The place for child custody at 511 Dad's House
 Equal time at all places
 Some other place
 Don't know

[Previous](#) [Next](#)

Out of the 18 participants who answered this question, 14 chose "57032 NORGAR RD," one selected "511 Dad's House," two chose "Equal time at all places," and one participant answered by saying "Don't know."

The ideal response would have been the Mom's (sample) address "57032 NORGAR RD."

Question 3: Where was Suzy Smith staying on June 14, 2012?



The screenshot shows the interface for the 2012 National Census Test. At the top, it says "AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT" and "United States Census Bureau". The main heading is "2012 National Census Test". There are navigation links for "Instructions", "FAQs", and "Logout". The question is "Where was Suzy Smith staying on June 14, 2012?" with a "(Help)" link. The options are: 57032 NORGAR RD, The place for child custody at 511 Dad's House, Some other place, and Don't know. At the bottom, there are "Previous" and "Next" buttons.

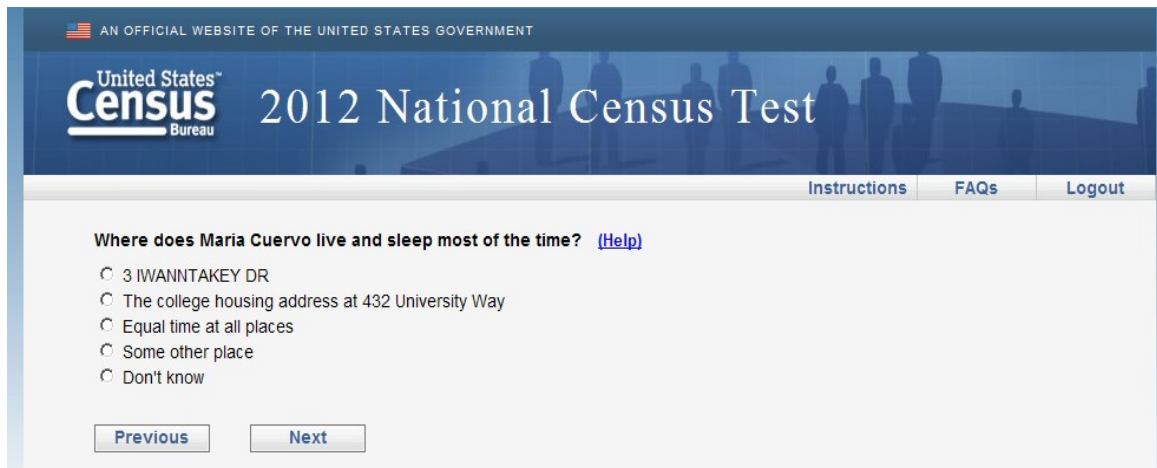
For this question, one participant answered "57032 NORGAR RD", 15 participants answered "511 Dad's House", and two participants answered "Some other place."

The optimal response for this scenario was the Dad's house at "511 Dad's House."

Scenario 4

Maria is a college student who lives in a dormitory on campus during the week. On the weekends, Maria stays at her parents' house at "3 IWANNTAKEY DR" so her mom can do her laundry and Maria can catch up with her high school friends. Maria's mother is filling out the survey on the weekend, so she lists Maria as someone who lives in the household.

Question 1: Where does Maria Cuervo live and sleep most of the time?



The screenshot shows the interface for the 2012 National Census Test. At the top, it says "AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT" and "United States Census Bureau". The main heading is "2012 National Census Test". There are links for "Instructions", "FAQs", and "Logout". The question is "Where does Maria Cuervo live and sleep most of the time?" with a "(Help)" link. The options are: "3 IWANNTAKEY DR", "The college housing address at 432 University Way", "Equal time at all places", "Some other place", and "Don't know". There are "Previous" and "Next" buttons at the bottom.

For this questions, 16 of the 17 participants who answered the question selected "The college housing at 432 University Way." Only one participant selected "3 IWANINTAKEY DR."

The ideal response for this question was the college housing address at "432 University Way" in accordance with Census residence rules.

Question 2: Where was Maria Cuervo staying on June 14, 2012?

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Where was Maria Cuervo staying on June 14, 2012? [\(Help\)](#)

- 3 IWANNTAKEY DR
- The college housing address at 432 University Way
- Some other place
- Don't know

Of the 17 participants who answered this question, six answered “3 IWANINTAKY DR” and 11 chose “The college housing address 432 University Way.”

The ideal response for this question was “The college housing address 432 University Way” because June 14, 2012 was a Thursday.

Scenario 5

Jessica is married to Tom, and they are both in the Army. Jessica has just been redeployed to Afghanistan for the third time. She's only been gone a few days and Tom is filling out this survey at their home on “3 IWANNTAKEY DRIVE.” Tom includes Jessica's name on the survey.

Question 1: Where does Jessica Rabbit live and sleep most of the time?

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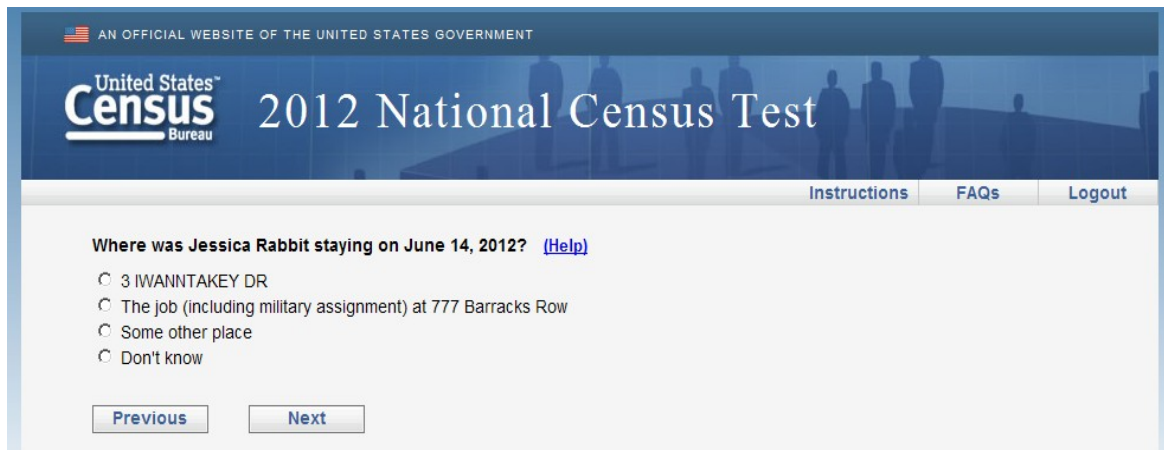
Where does Jessica Rabbit live and sleep most of the time? [\(Help\)](#)

- 3 IWANNTAKEY DR
- The job (including military assignment) at 777 Barracks Row
- Equal time at all places
- Some other place
- Don't know

All 20 participants responded to this question. Out of 20 participants, seven selected “3 IWANINTAKEY DR,” nine selected “The job at 777 Barracks Row,” and four answered by selecting “Don’t know.”

The ideal response for this question is the job address at 77 Barracks Row (or possibly Tom and Jessica’s house if the session occurred after June 14th. Out of 20 participants 6 participants took the survey on or before June 14th, remaining 14 participants took the survey on or after 15th June.

Question 2: Where was Jessica Rabbit staying on June 14, 2012?



The screenshot shows a web interface for the 2012 National Census Test. At the top, it says "AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT" and "United States Census Bureau". The main heading is "2012 National Census Test". There are links for "Instructions", "FAQs", and "Logout". The question is "Where was Jessica Rabbit staying on June 14, 2012?" with a "(Help)" link. The options are: 3 IWANNTAKEY DR, The job (including military assignment) at 777 Barracks Row, Some other place, and Don't know. There are "Previous" and "Next" buttons at the bottom.

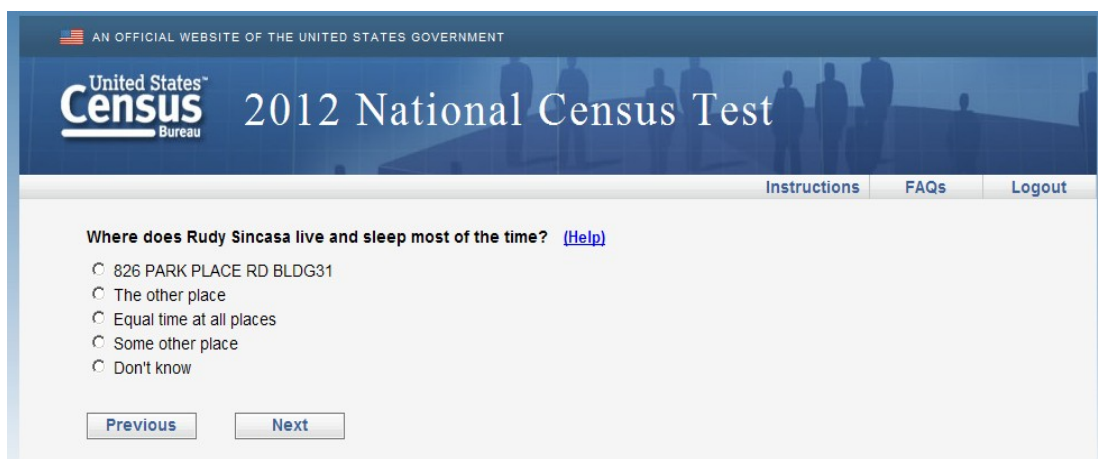
Out of 20 participants, seven selected “3 IWANINTAKEY DR,” and remaining 13 selected “The job at 777 Barracks Row.”

The optimal response for this question was the job address at 777 Barracks Row. For sessions after June 14, 2012, we reminded participants that Jessica has been away for a while, which would have mean she was away on June 14.

Scenario 6

Matt and his wife, Sharon, are hippies. They have an open-door policy at their house at 826 Park Place Road, Building 31, which means that anyone can crash there at any time. A guy named Rudy sometimes shows up and sleeps on their couch. Matt and his wife have no idea where Rudy sleeps when he's not couch-surfing at their house. When Matt is filling out this survey over his morning coffee, Rudy wakes up and asks if he can stay over one more night.

Question 1: Where does Rudy Sincasa live and sleep most of the time?

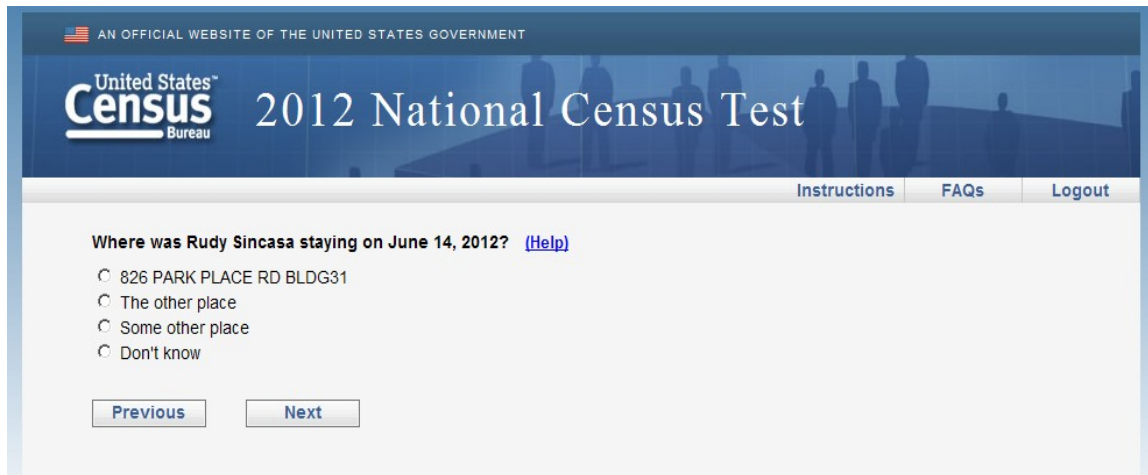


The screenshot shows a web interface for the 2012 National Census Test. At the top, it says "AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT" and "United States Census Bureau". The main heading is "2012 National Census Test". There are links for "Instructions", "FAQs", and "Logout". The question is "Where does Rudy Sincasa live and sleep most of the time?" with a "(Help)" link. The options are: "826 PARK PLACE RD BLDG31", "The other place", "Equal time at all places", "Some other place", and "Don't know". There are "Previous" and "Next" buttons at the bottom.

Of the 18 participants who answered this question, one selected “Equal time at all places,” five participants selected “Some other place,” and the remaining selected “Don’t know.”

There was no truly ideal response for this question, since there is not enough information to know where Rudy sleeps most of the time. Participants noted that they really had no way to tell where he was most of the time.

Question 2: Where was Rudy Sincasa staying on June 14, 2012?



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Where was Rudy Sincasa staying on June 14, 2012? [\(Help\)](#)

- 826 PARK PLACE RD BLDG31
- The other place
- Some other place
- Don't know

[Previous](#) [Next](#)

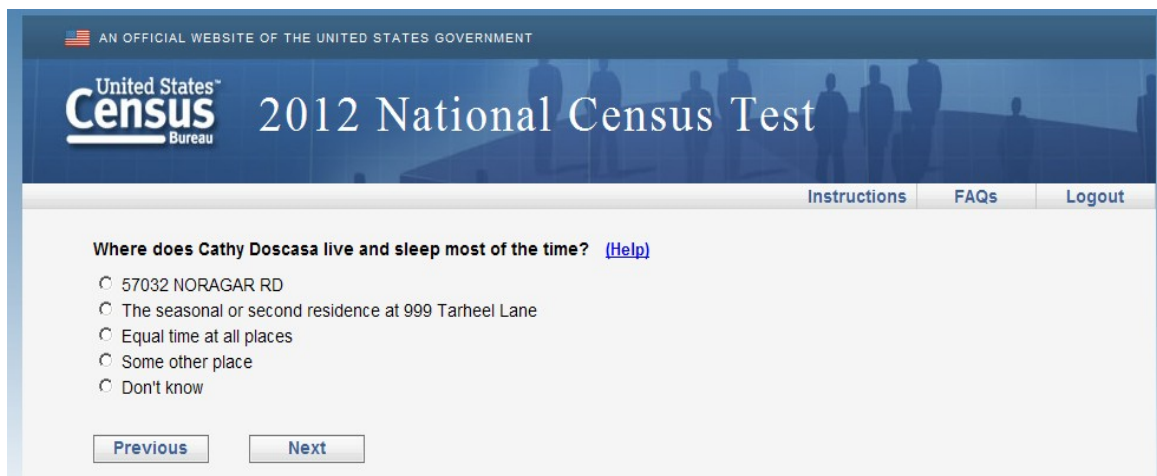
In above question, out of 18 participants, 10 participants selected “826 PARK PLACE,” two participants selected “Some other place” and remaining six participants selected “Don’t know.” In this case 14 participants answered the survey after June 14th.

The optimal response was the address at “826 PARK PLACE.” If the session took place after June 14, it was less clear whether Rudy was at this house or not. If the participant inquired, we said that he had been at the address a while.

Scenario 7 (Situation 1)

Cathy is retired and maintains two homes. One in Maryland (at 57032 Noragar Road) and one in North Carolina (at 999 Tarheel Lane). She hates the cold winters in Maryland, so she tries to stay in North Carolina during the winter. However, she loves the warm summer months, and so she stays in her Maryland home a little more often during the summer. Cathy happens to be staying at her home in Maryland when she is filling out the survey that lists the address of her Maryland home.

Question 1: Where does Cathy Docasa live and sleep most of the time?

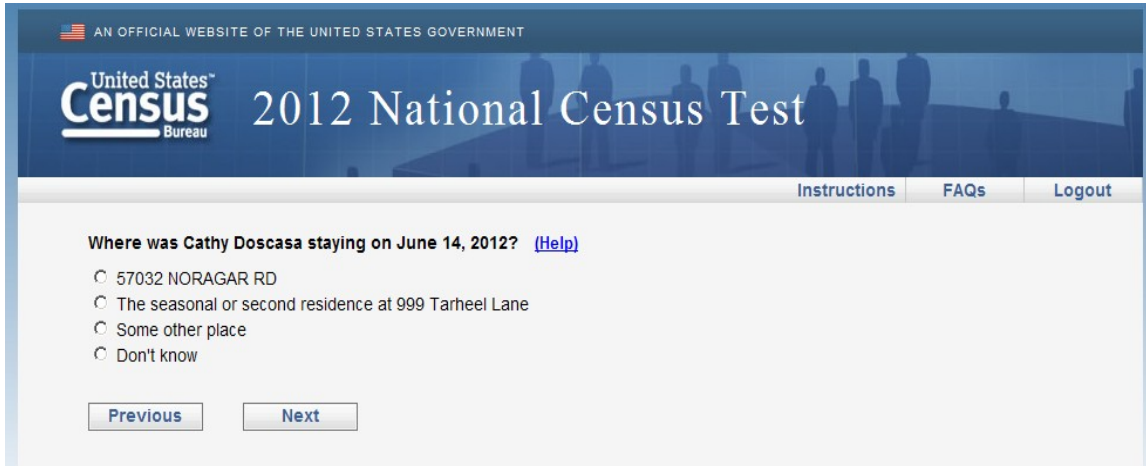


The screenshot shows the interface for the 2012 National Census Test. At the top, it says "AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT" and "United States Census Bureau 2012 National Census Test". There are links for "Instructions", "FAQs", and "Logout". The question is "Where does Cathy Docasa live and sleep most of the time?" with a "(Help)" link. The options are: "57032 NORAGAR RD", "The seasonal or second residence at 999 Tarheel Lane", "Equal time at all places", "Some other place", and "Don't know". There are "Previous" and "Next" buttons at the bottom.

In above question, out of 4 participants, 2 participants selected “57032 NORAGAR RD”, 1 participant selected “Seasonal residence 999 Tarheel Lane” and one participant selected “Equal time at all places.”

The ideal answer to this question was the Maryland address as she spends most of the time in her Maryland home.

Question 2: Where was Cathy Docasa staying on June 14, 2012?



The screenshot shows the top of the 2012 National Census Test website. At the top, it says "AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT". Below that is the "United States Census Bureau" logo and the title "2012 National Census Test". There are navigation links for "Instructions", "FAQs", and "Logout". The main content area displays the question: "Where was Cathy Docasa staying on June 14, 2012?" with a "(Help)" link. Below the question are four radio button options: "57032 NORAGAR RD", "The seasonal or second residence at 999 Tarheel Lane", "Some other place", and "Don't know". At the bottom of the question area are two buttons: "Previous" and "Next".

Out of 4 participants, 4 participants selected “57032 NORAGAR RD” and none of the participants choose other answer. The PP # 1-4 participated on survey starting from June 8 – June 13. The participants assumed that in month of June they are staying in Maryland home.

Before the change, the ideal answer was the Maryland address at NORAGAR RD.

Scenario 7 (Situation 2)

Cathy is retired and maintains two homes. One in Maryland (at 57032 Noragar Road) and one in North Carolina (at 999 Tarheel Lane). She stay in North Carolina for about 4 months during the summer. However, she stays in her Maryland home the rest of the year. Cathy is staying at her home in North Carolina when she is filling out the survey that lists the address of her North Carolina home.

This scenario was changed on June 14, 2012 so that Cathy happens to be staying at her home in North Carolina when she receives the survey.

Question 1: Where does Cathy Docasa live and sleep most of the time?

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United States Census Bureau 2012 National Census Test

Instructions FAQs Logout

Where does Cathy Docasa live and sleep most of the time? [\(Help\)](#)

- 57032 NORAGAR RD
- The seasonal or second residence at 999 Tarheel Lane
- Equal time at all places
- Some other place
- Don't know

Previous Next

In above question, out of 14 participants, 12 participants selected “57032 NORAGAR RD” and 2 participants selected “Seasonal residence 999 Tarheel Lane”. The participants PP# 5-20 took the survey from June 14-20.

The ideal answer to this question was the Maryland address. Many participants mentioned that the fact that the North Carolina address was called “the seasonal or second address” made the choice for the Maryland address obvious as the primary address.

Question 2: Where was Cathy Docasa staying on June 14, 2012?

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United States Census Bureau 2012 National Census Test

Instructions FAQs Logout

Where was Cathy Docasa staying on June 14, 2012? [\(Help\)](#)

- 57032 NORAGAR RD
- The seasonal or second residence at 999 Tarheel Lane
- Some other place
- Don't know

Previous Next

Out of 14 participants, 2 participants selected “57032 NORAGAR RD” and the remaining 12 selected “The seasonal residence 999 Tarheel Lane.” All the participants took the survey on or after June 14th.

Before the change, the ideal answer was the Maryland address at NORAGAR RD. After the scenario was changed, the optimal answer became the North Carolina address.