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**2008 Coverage Follow-up (CFU) User Interface Usability:
Observations and Recommendations
from Interviewer Review of CFU Wire Frames**

Elizabeth D. Murphy

Statistical Research Division
U.S. Census Bureau
Washington, D.C.

Prepared for
The U.S. Census Bureau's
2008 CFU User Interface Design Team
Sarah Brady, Chair
Susan Ciochetto
Decennial Systems and Contracts Management Office (DSCM))
David Sheppard
Elizabeth Krejsa
Decennial Statistical Studies Division (DSSD)
Karen Piskurich
Decennial Management Division (DMD)
Sandy Ehni
Technologies Management Office (TMO)

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Abstract

On July 24 through July 25, 2006, six experienced telephone interviewers participated in a scenario-based review of mocked-up screens for the 2008 Web-based Coverage Follow-up (CFU) operation. This review took place at the Hagerstown Telephone Center (HTC) in Hagerstown, Maryland, and was facilitated by staff from the U. S. Census Bureau's usability laboratory. The purpose of the review was to collect initial user feedback on the look and feel of the 2008 CFU user interface as represented in the user-interface design document. Prior to the review sessions, members of the CFU UI design team sequenced the screen mock-ups ("wire frames") to take the interviewer through four scenarios. Each scenario contained situations of interest to the design team. Navigation through the wire frames was supported by point-and-click interaction only. As needed in some scenarios, the facilitator explained how a non-working function was supposed to work and played the role of the computer in executing sequences of wire frames. At the end of each scenario, the facilitator asked the participant to reflect on the scenario and to describe what worked well and not so well. The participant completed a user satisfaction questionnaire, and a debriefing completed the session. If any observers from Census Headquarters were present, they were encouraged to ask questions during the debriefing. This report provides a summary of findings on each of the design elements that were pre-identified as potentially problematic by the design team. Recommendations are given to improve usability when an issue seems relatively straightforward. The design team discussed all recommendations and submitted a set of changes to the contractor

Keywords: Coverage Follow-up, Web-based User Interface, Usability, Scenarios, Wire Frames, User Feedback, User Satisfaction, Design Recommendations

Executive Summary

On July 24 through July 25, 2006, six experienced telephone interviewers participated in a scenario-based review of mocked-up screens for the 2008 Web-based Coverage Follow-up (CFU) operation. This review took place at the Hagerstown Telephone Center (HTC) in Hagerstown, Maryland, and was facilitated by staff from the U. S. Census Bureau's Usability Laboratory. Staff from the Decennial Systems and Contracts Management Office (DSCMO) observed the sessions on both days. This visit by Headquarters staff was coordinated with HTC management.

Purpose. The purpose of the review was to collect initial user feedback on the look and feel of the 2008 CFU user interface as represented in the user-interface design document (Gunnison Consulting and Z-Tech Corporation, 2006). The feedback consisted of reviewer comments as well as observations made by the facilitator and the observers.

Method. Prior to the review sessions, members of the CFU UI design team sequenced the screen mock-ups to take the interviewer through four scenarios. Each scenario contained situations of interest to the design team. Navigation through the screen mock-ups was limited (i.e.,

participants could not tab or use numbers or letters to select response options). Text-entry fields did not have focus (i.e., the participant had to click in a text-entry field to bring it into focus).

During the review sessions, the interviewers met individually with the facilitator and observer. They were not formally trained on the prototype screens or the script but received a brief introduction to the session from the facilitator. A member of the design team served as the telephone respondent in each session. The interviewers read the questions to the respondent and interacted with the screen mockups to the extent possible.

As needed in some scenarios, the facilitator explained how a non-working function was supposed to work and played the role of the computer in executing sequences of screens. At the end of each scenario, the facilitator asked the participant to reflect on the scenario and to describe what worked well and not so well. The participant completed a user satisfaction questionnaire, and a debriefing completed the session. Observers were encouraged to ask questions during the debriefing.

Results. This report provides a summary of findings on each of the design elements identified as potentially problematic by the design team. The following are selected findings of the study:

- All participants had problems with the process for deleting duplicates.
- All participants were able to delete an unknown person from the roster with ease.
- About one third of participants had difficulty finding a name near the end of a long, scrolling roster.
- Instructions in pale blue need to be slightly darker for good visual contrast and legibility.
- All participants were able to add people to the household without difficulty.
- All participants said they preferred keyboard navigation to point-and-click navigation.
- All participants said they could adapt to the placement of the symbols for Don't Know and Refused.
- None of the participants reported having trouble with the pop-up messages.
- All participants gave generally positive evaluations of the "JUMP TO" functionality.
- Ratings for user satisfaction were generally positive, with a few, scattered low ratings.

Recommendations are given to improve usability when an issue seems relatively straightforward. The design team has discussed all recommendations and has submitted a set of changes to the contractor. These changes are provided in an appendix to this report.

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Observations and Recommendations from Interviewer Review of CFU Wire Frames

1.0 Introduction

On July 24 through July 25, 2006, six experienced telephone interviewers participated in a scenario-based review of mocked-up screens for the 2008 Web-based Coverage Follow-up (CFU) operation. We referred to the mocked-up screens as “wire frames,” a term that is essentially synonymous with “prototype.” The wire frames had content in the form of the proposed instrument (questionnaire) for the 2008 CFU, but they had not been implemented in software. Limited functionality was provided by Hypertext Markup Language (HTML) coding.

The review took place at the Hagerstown Telephone Center (HTC) in Hagerstown, Maryland, and was facilitated by Betty Murphy of the U. S. Census Bureau’s Statistical Research Division (SRD). Census Bureau staff from the Decennial Systems Contract Management Office (DSCMO) observed most of the sessions: Suzanne Fratino observed on July 24, and Susan Ciochetto observed on July 25. This visit by Headquarters staff was coordinated with Kimberly Clark (HTC Facility Manager) and Jean Franse (Assistant Branch Chief).

1.1 Background

Members of the Decennial Response Integration System (DRIS) Telephony User-Interface (UI) Design Team met regularly during the later months of 2005 and the early months of 2006 to develop a user-interface-design concept and screen designs for the 2008 CFU operation. Led by Susan Ciochetto (DSCMO), the user-interface design effort was supported by Z-Tech Corporation and the Gunnison Consulting Group, Inc., which provided a team of developers and document managers. The product of this effort was issued in April 2006 and became known as the UI design document (Gunnison and Z-Tech, 2006).

The UI design document was provided to the DRIS contractors (Lockheed-Martin Corporation and IBM) as representing the user interface to the DRIS telephony system, which they were tasked to build. Since usability testing would not occur until May of 2007, the CFU UI Design Team (led by Sarah Brady, DSCMO) decided to ask interviewers at the Hagerstown Telephone Center to review the screens developed by Z-Tech Corporation. The assumption was that the ultimate user interface developed by Lockheed-Martin/IBM team would essentially reproduce the look and feel documented by Gunnison and Z-Tech (2006). The motivation for the review was the possibility of finding some user-interface design issues that could be corrected before the contractor had implemented the screen designs in software.

Prior to the review, members of the CFU UI Design Team were asked to identify aspects of the user interface on which the review should focus. The following list contains the consolidated suggestions from team members:

- Beginning of section D (name edits, unknown persons, and people listed more than once)

- Screens with multiple “no” options
- Screens with a dynamic roster list with 'no longer lives here' and 'under 15' options
- Adding more than one person to the household for a particular question, such as missed babies.
- Basic screen layout and navigation, such as the colors, the tabs, the arrows at the bottom, the way we have help and FAQs at the top.
- The “Don’t Know” (D/K) and “Refused” (R) responses and how they function. Do the interviewers like the fact that the D or R does not show up inside the entry box?
- The DINTRO screen where we review roster. Get feedback on interview instructions. Use a roster where they have to scroll.
- How interviewers react to the screen, FGQADDRESS because there are quite a few questions on that screen. Just do a check to make sure it's not too much.
- Look at how interviewers react to the screen, RESPWHONAME with 25 people on roster. It's in two columns and you have to scroll.
- The edit box for clear all changes for DEDITNAME. The edit box for DUPLICATEDROP.
- Adding and identifying duplicates and deleting (see first bullet).
- The concept of JUMP TO and how it works.

Planning for the Hagerstown visit focused on gathering interviewer feedback on these issues.

1.2 Purpose

The major purposes of the study were to observe interviewer interaction with the screen designs and to collect interviewer feedback on the design elements of concern to the team (as listed immediately above).

1.3 Scope

The review included the mocked-up screen designs (wire frames) needed to present the design elements to the participants within the context of realistic scenarios. Thus, the interviewers saw a subset of screens from the UI design document. The four scenarios¹ used in this study covered the areas of concern but did not traverse every possible path in the CFU instrument. The wire frames had limited functionality. Participants were offered only one mode of interacting with the user interface: pointing and clicking with the mouse.

1.4 Assumptions

We assumed that the wire frames would provide context and cues that would allow test participants to form opinions and judgments about the user interface. We assumed the participants would be trained and experienced in telephone call-center operations and familiar with Web-based user interfaces. Both assumptions were borne out.

¹ The scenarios are discussed in the section on method, and they appear in an appendix to this report.

2.0 Method

This was a low-fidelity, scenario-based study of selected aspects of the CFU user-interface design. It was informal and exploratory. The overall goal was to see how easily experienced interviewers could work their way through the scenarios, never having seen this instrument. Specific questions were implied by the list of concerns from the User Interface Design Team, as provided at the end of Section 1.1 in this report. For example, can interviewers perform tasks using a scrolling roster? Are they able to navigate through the instrument? Will a “JUMP TO” function be useful for interviewers? The list of concerns guided the construction of the scenarios, the review itself, and the reporting of results.

2.1 Participants and Respondents

Management of the Hagerstown facility provided six experienced telephone interviewers to participate in the CFU UI study. All participants were adult females, ranging in age from approximately their mid-30s to mid-60s. All participants spoke articulate English with little or no regional accent. Most of the participants were experienced in Web-based Computer Aided Telephone Interviewing (Web CATI).

The respondents were two members of the CFU UI Design team, Elizabeth Krejsa (DSSD) and Karen Piskurich (DMD). We needed respondents who were familiar with the instrument and the scenarios so that the review could proceed without unsolicited feedback from the respondents. Ms. Krejsa served as the respondent for five of the sessions, and Ms. Piskurich filled in as the respondent for one session.

2.2 Facilities and Equipment

The review sessions were held in a brightly lit room with one full wall of windows at the Hagerstown Telephone Center. The room measurements were approximately 12 by 16. The room was equipped with two standard PCs, each set up on a table at opposite ends of the room. We were directed to use the PC farthest away from the door, on the right side of the room. The table and the PC were at a 90-degree angle to the windows. Because the PC was equipped with a glare-free screen, the wire frames were fully legible despite the bright sunlight streaming in on the screen.

Since the phone cord did not stretch all the way to that table, we placed the phone on the window sill so that it was behind and to the left of the participant.

The respondent was in her office at the Census Bureau in Suitland, Maryland.

The facilitator mounted a stand-alone video-recorder on a tripod placed about two feet behind the participant’s right shoulder. The camera² was focused on the participant’s screen, and part of the keyboard was visible in the frame. Once plugged in, positioned and turned on, the camera was left to record during the rest of the session. The camera was set to record for 90 minutes so that the facilitator would not need to change the tape during a session. To capture the video and audio, we used premium Sony Digital Video Cassette (DVC) tapes³ in the Mini-DV Handycam.

² digital video camera recorder, Model No. DCR-PC-120

³ DVM60PRL (x5)

2.2 Materials

The facilitator developed a general introduction to read to all the participants. She modified a standard consent from the Census Bureau's Usability Lab. A sub-group of the User-Interface Design Team developed the scenarios and enlisted other DSCMO staff to help with editing and sequencing the low-fidelity prototype screens. Members of the User-Interface Design Team reviewed a modified user satisfaction questionnaire and decided on the wording to use in the satisfaction items.

2.3.1 General Introduction and Consent Form

Before turning on the video-camera, the facilitator read some background material and explained several key points about the session. The background material and the key points were contained in the general introduction, which is provided here as Appendix A.

The introductory portion of the session included having the participant read and sign a form consenting to be videotaped. The consent form is provided as Appendix B. All participants agreed to be videotaped.

2.3.2 Scenarios and Screens

The scenarios were created by several members of the User-Interface Design Team with the goal of capturing the participant's interactions with and reactions to the design elements of interest to the team. The scenarios and their associated screens are provided here as Appendix C.

With the help of David Charbonneau (DSCMO), the prototype screens from the user-interface design document were edited as needed and sequenced in parallel with the flow of the scenarios. For consistency with the scenarios, some changes needed to be made in the content of the screens, in such things as the names of household members. It was not simply a matter of stringing together screens from the UI design document.

2.3.2 Questionnaire for User Interaction Satisfaction (QUIS)

The original version of the QUIS includes dozens of items related to user satisfaction with a user interface (Chin, Diehl, and Norman, 1988). In a usability test, we typically use 10 to 12 items that have been tailored to the particular user interface being evaluated. In this study, we used a modified version that included eight items worded for the CFU context (Appendix D). The items and their wording represented a consensus of the User Interface Design Team.

3.0 Results and Recommendations

Note that numbers in parentheses, such as (1), indicate which of the six participants experienced a situation or made a comment.

3.1 Beginning of Section D: Review of Roster

None of the participants had trouble with name edits (e.g., Cheeto for Cheetra). One participant wanted to edit the name right on the roster list without going to another screen. Figure 1 shows the screen where name edits were made.

In this section of the instrument, the main issue of concern was the design's support for identifying and deleting duplicates. The basic situation is shown in Figure 2, where the name Willy K Thundercat appears twice on the roster. All participants had some difficulty with correcting the record for someone listed more than once. In the CFU instrument, this procedure differs from the way telephone interviewers are used to doing it. They usually click first on the person to *delete*, not the person to *keep*. In Figure 2, the user is instructed to click on the person to keep, but some of the participants did not read this instruction.

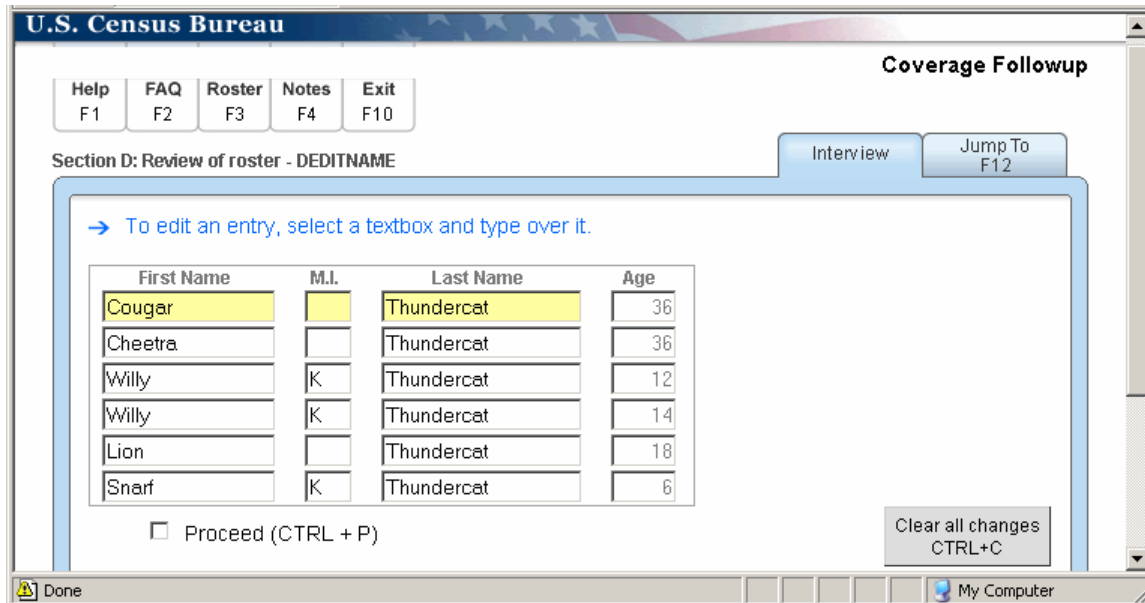


Figure 1. Editname screen: Cheeto now Cheetra.

Figure 3 shows the second part of this procedure, the step in which the duplicate is deleted. One participant said, “The process is garbled” (6). Most participants said they could become skilled in doing it this way, even though they are in a mindset to delete someone as the first step. They agreed that training would clarify the technique and that they would become practiced in it.

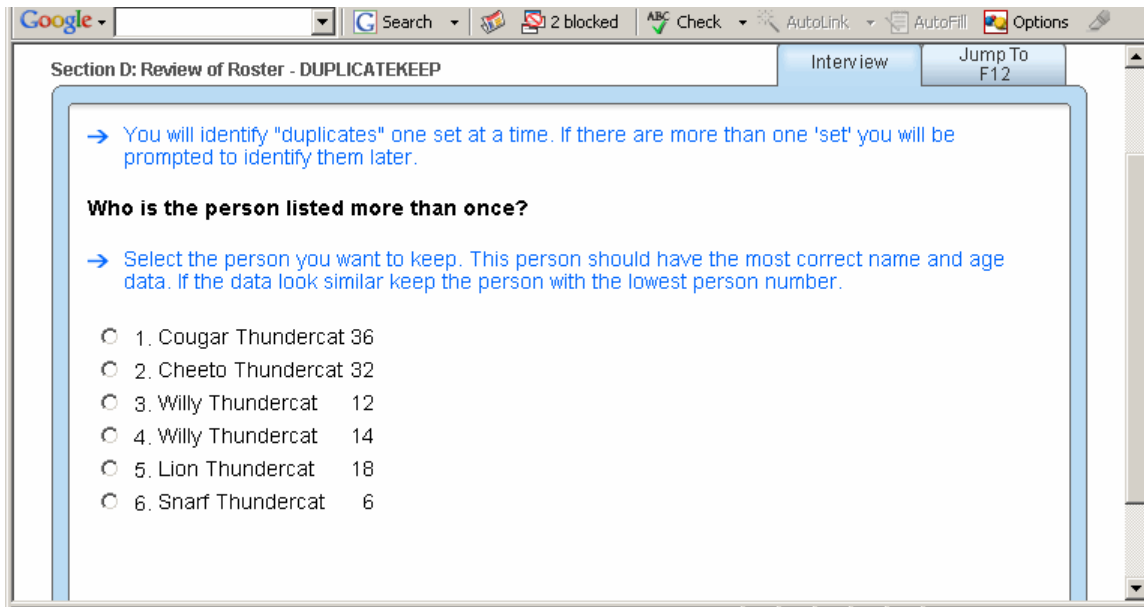


Figure 2. First step in deleting duplicates: Select the person to keep.



Figure 3. Second step in deleting duplicates: Select the name(s) to delete.

The third participant suggested bolding the word, “keep” in the instructions for selecting the name to retain in the procedure for deleting duplicates (Figure 2). She commented that something was needed to remind interviewers to do the opposite of what they are used to doing. This suggestion was discussed by the team. The recommended change was to display “keep” in all capitals as KEEP.

All the participants were able to delete an unknown person (e.g., Snarf in Figure 3).

3.2 Screens with Multiple “No” Options

An example of this type of screen is shown in Figure 4. None of the participants had problems dealing with more than one “no” option. One participant (4) suggested putting the “not available” option ahead of the “no longer lives here” option on the P1RESPAVAIL screen. To her, this was an issue of logic because not living there any longer is a more “final” response than not being available.

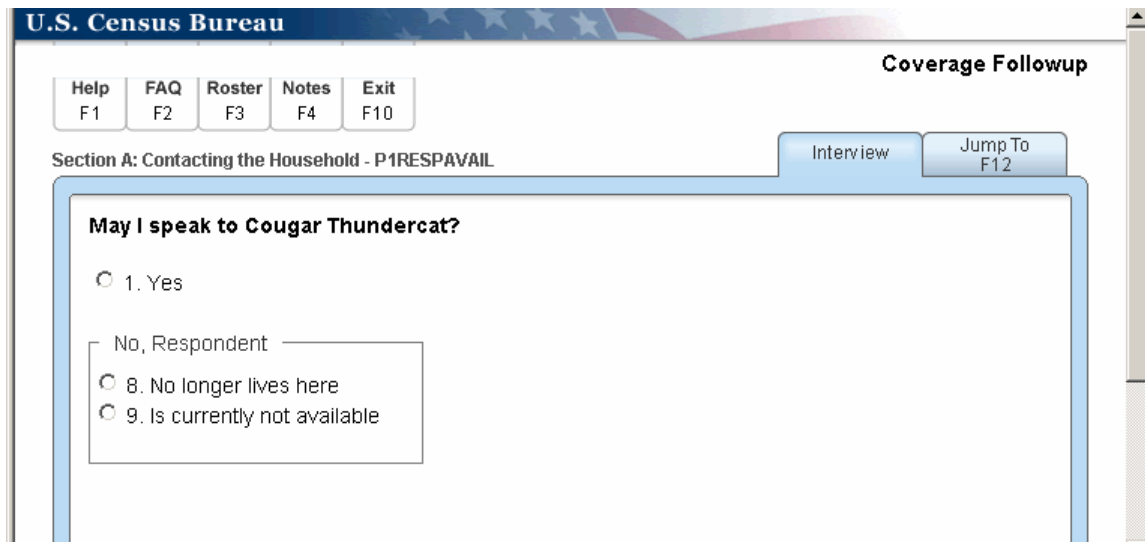


Figure 4. Example of a screen with multiple "No" options.

3.3 Screens with Dynamic Roster Lists

Of particular concern to the team were dynamic roster lists accompanied by 'no longer lives here' and 'under 15' options. The team was interested in how interviewers reacted to the screen, RESPWHONAME with 25 people on roster. As shown in Figure 5, the roster is displayed in two columns, and the user has to scroll to find Tiger Thundercat.

Two or three participants had trouble finding Tiger, who was near the end of the list (number 31). Several participants said it would be very rare to have a household with that many people.

Recommendation: Provide a function, such as <Ctrl + N> to get to the end of the list quickly.

Team discussion: Team members agreed that there is no need to get to the end of the list quickly. The respondent probably will not mention that the person doesn't live there any more when they give the person's name; so the interviewer will probably have to scan the list to find out that the name is not on the list. Similarly, even if the person who filled out the Census form was under 15, the current respondent probably will not mention that person's age; so the interviewer will know to go to the bottom of the list. No change recommended.

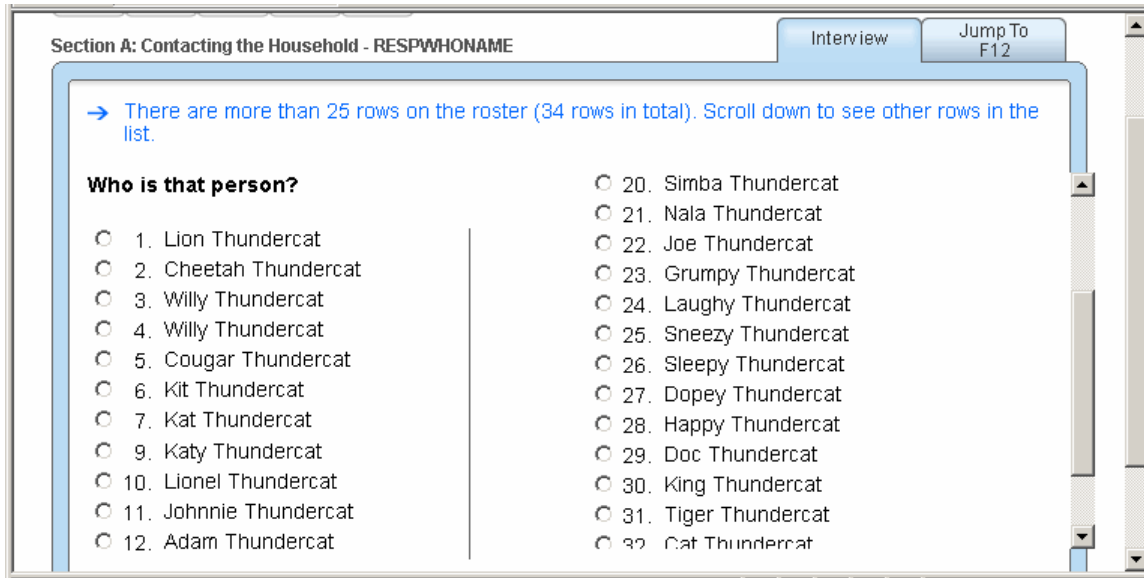


Figure 5. Long, scrolling roster.

Observations identified a potential problem with this design: Some response options are placed after the end of the list and are not viewable by the user without scrolling (Respondent no longer lives here; Respondent is under 15). Note that these options are not visible in Figure 5, which has been scrolled all the way down to the thirty-second household member. As shown in Figure 6, further scrolling is needed to reveal these options.

Lower portion of RESPWHONAME:

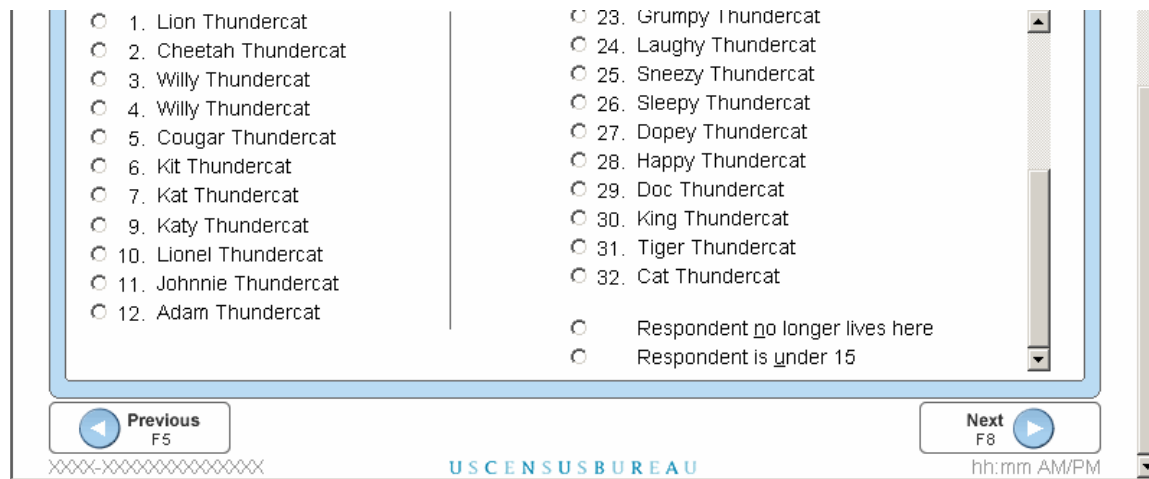


Figure 6. Options at the bottom, right of RESPWHONAME

The internal scroll bar is the only clue that additional options can be found at the bottom, right of the RESPWHONAME screen. One participant thought that these options should be moved up to a position where they would always be in sight (6). She commented that she does not want to

have to hunt for things on the screen because “it takes time and makes [respondents] angry.” By implication, an angry respondent is likely to hang up.

Recommendation: The team needs to revisit the importance of the hidden options and whether they belong on this screen. If the respondent answers the question with a name that is on the list, how does the interviewer find out that the person no longer lives there? Someone under 15 would not be included on this list.

Team discussion: This issue was covered in the immediately preceding discussion. No change recommended.

The team was also interested in obtaining feedback on the instructions to the interviewer, as displayed in Figure 5. Most of the participants said that they did not read the instructions, but they know the text in blue is not to be read aloud. One participant started to read the blue text aloud but caught herself quickly. All participants said they would become familiar with instructions in training and would not read them during an interview.

In one case, an instruction appeared below the question (DUPLICATEKEEP). One participant said she prefers all instructions to be above the question.

Recommendation: Revisit in team discussion

Team discussion: Interviewers are used to reading instructions before the question. Once they become familiar with an application, they really do not need to read the instruction. The flow is interrupted, however, if an instruction comes between the question and the responses. In some cases, though, it is useful for the interviewer to know the content of an instruction after reading the question. For example, the instruction might remind the interviewer to select the name of the person she wants to keep or to select all that apply. The team agreed that the instruction could come between the question and response in such cases.

Proposed Change: As documented in Appendix F, the team proposed that most instructions be placed above the question.

Only one participant had trouble with a scrolling roster (1). She had trouble keeping her place and said, “it kept jumping.” She was also not sure when she was at the end of the list and wanted some indication that she was at the end. Others knew they were at the end when the scroll “thumb” could not go down any farther. One participant said she would “like to see all the names” without having to scroll. Another participant (6) commented that the internal scroll was OK, but she did “not especially care for it.” She said the names are easier to read if they are “just there.” She commented that the reading “doesn’t flow” as well when scrolling is necessary.

Recommendation: Revisit in team discussion.

Team discussion: A suggestion was for the screen to scroll in defined increments, such as two or three names at a time, to reduce the impression of “jumping.” The team agreed that most people know when they are at the end of a vertical scroll bar. Cues to scrolling status can be pointed out in training. No change recommended.

3.4 Adding People to the Household

Another concern of the UI Design Team was the ease or difficulty of adding more than one person to the household. Examples are babies, especially newborns, who are often overlooked by respondents to the Census. Other examples are foster children and boarders. None of the participants had any problems adding people, including infant twins, to the household.

3.5 Basic Screen Layout and Navigation

Figures provided earlier in this report and in Appendix C show the basics of screen layout, such as the tabs, the positioning of help and FAQs, the next and previous arrows at the bottom, and the use of color. Navigational controls include the various pushbuttons, the tabs, and the scroll bars. The following findings emerged from the review:

- People generally liked the colors, although one participant said the light blue was a little hard to read (4). Another participant said it “takes more time” to read the light blue text. She wants to save seconds, even milliseconds (6).
 - Recommendation: Use a slightly darker blue for better contrast.
 - Proposed Change: The team proposed using a slightly darker blue for instructions (Appendix F).
- Participants seemed to find the arrows helpful even though they disliked using the Next button for forward navigation. One or two were not sure whether they had to click exactly on the arrow.
 - Recommendation: Highlight the Next and Previous boxes so it is clear that the user can click anywhere in the box, not just on the arrow.
 - Team discussion: It is part of the requirements for the user to be able to click anywhere in the box. This tip will be included in training. No change proposed.
- Everyone expressed approval of the location of help, FAQs, etc.

All of the participants disliked navigating by selecting a radio button or check box and clicking on Next. As they told us, these telephone interviewers are used to entering numbers and pressing the Enter key to navigate. They had objections to using the mouse. Their objections focused on the perceived longer task-completion time involved in going “back and forth.” They want to minimize time per question as a way to keep the respondent engaged and willing to continue.

- The first participant said, “I don’t want to hit buttons – it interrupts the flow.” This participant described the method of navigating as “awkward.” The second participant said she likes “to avoid the mouse.” She prefers using the Enter key to proceed. The third participant said, “The mouse takes more time.” The fourth participant described the keyboard as “faster.” She commented that there is “too much mouse usage in Web CATI – time is of the essence.” The fifth participant said that it is “easier” to use tab or enter to get to the next field: “Using the mouse takes time.”
 - Recommendation: Allow the user to enter numbers and press the Enter key (or a function key) as an alternative to point-and-click navigation.

- Team comment: This is already in the UI design document. The Enter key works the same way as a tab.
- One participant (6) commented that the back and forth motion with the mouse would lead to repetitive motion disorders, such as carpal-tunnel syndrome. She suggested it would be better to put the Previous and Next buttons closer together so that the interviewer would not have to “go way over to the right” to go forward.
 - Recommendation: If point-and-click is retained as the only means of navigation, consider ways to shorten the path from the selected response to the Next button. For example, consider moving the Next button closer to the middle of the page instead of placing it in the far right corner.
 - Team discussion: Interviewers can use F8 as an alternative to get to the next screen.

In team discussion, it was noted that the wire frames did not implement alternative means of navigating, which will be available to users. These alternatives and are documented in the UI design document (Gunnison and Z-Tech, 2006).

3.6 Don't Know and Refused Options

The team was interested in Interviewer feedback on the functioning of the Don't Know (D/K) and Refused (R) options. A concern was the placement of the D and R symbols outside the text-entry boxes. All participants were used to typing “D” or “R” in the text-entry box and having a symbol show up inside the box. Most of them were familiar with using Ctrl + D and Ctrl + R as alternatives to typing just the letter.

Participants reported that they currently get a question mark inside a yellow circle for Don't Know and an exclamation mark inside a red circle for Refused.⁴ All expected the D/K and R symbols to show up inside the text-entry field and were surprised to see them outside; but all said they would learn about D/K and R in training and were sure they could adjust to the symbol being outside the text-entry field.

Figures 7 and 8 illustrate the technique for displaying Don't Know (D) and Refused (R) responses.

⁴ Neither of these solutions is recommended because they force the interviewer to remember the meaning of the symbols.

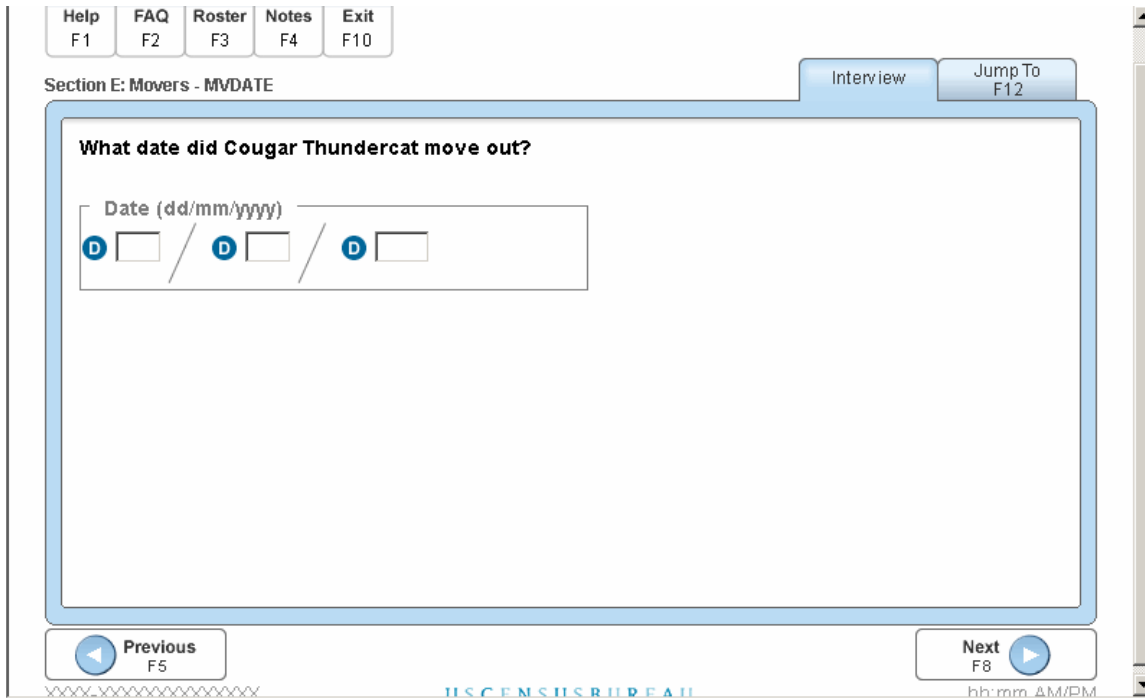


Figure 7. Placement of D for "Don't Know" outside the text-entry fields. The D is in white on a medium blue background.

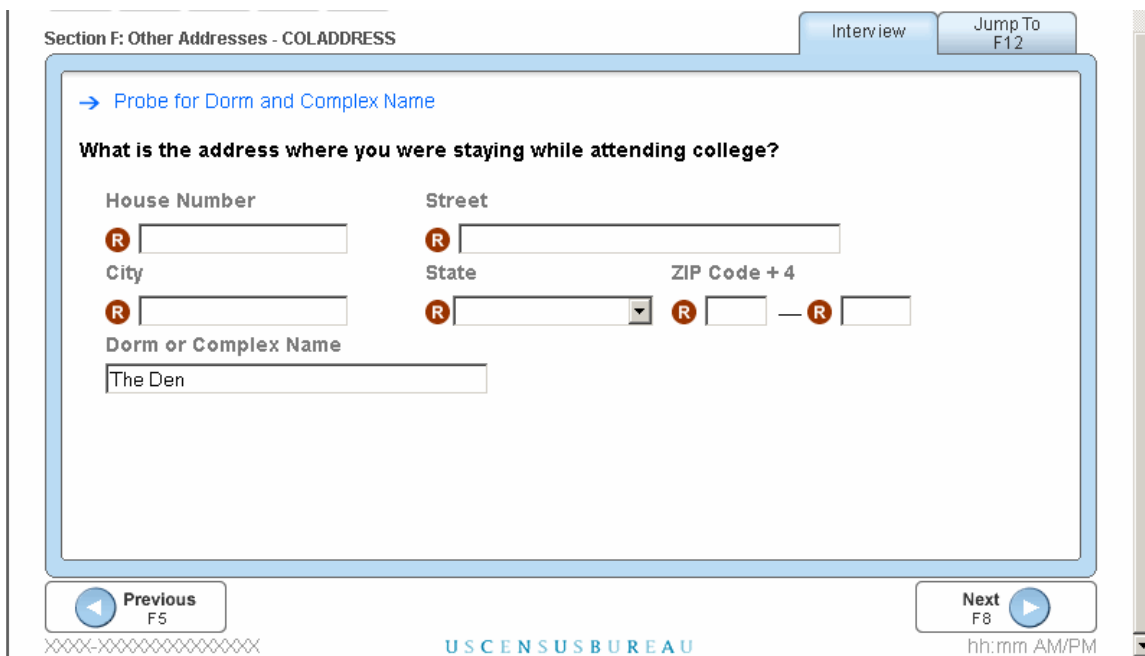


Figure 8. Placement of R for "Refused" outside the text-entry fields. The R is white on a red background.

3.7 Multiple Questions on One Screen

The team was interested in interviewer reactions to the screen shown in Figure 9, FGQADDRESS, because there are multiple questions on that screen.

Help F1	FAQ F2	Roster F3	Notes F4	Exit F10
------------	-----------	--------------	-------------	-------------

Section F: Other Addresses - FGQADDRESS

Interview Jump To
F12

What kind of place is it?

What is the name of that place?

What is the address of that place?

House Number <input type="text"/>	Street <input type="text"/>
City <input type="text"/>	State <input type="text"/>
	ZIP Code + 4 <input type="text"/> - <input type="text"/>

Figure 9. Screen with multiple questions

All participants liked having several questions on the same screen. They commented that it helps move things along, which is a high priority for them. From their perspective, saving time is critical in getting a complete interview.

3.8 Pop-Up Boxes

The review scenarios included two pop-up message boxes: one for clearing all changes on the DEDITNAME screen, as shown in Figure 10, and the second to warn the interviewer that it will not be possible to return to DUPLICATEDROP after deleting a name from the roster, as shown in Figure 11.



Figure 10. Clear-all-changes pop-up box for DEDITNAME



Figure 11. Pop-up warning to the interviewer following selection of a duplicate for deletion (DUPLICATEDROP).

None of the participants had trouble with the pop-up boxes. Several participants said they were familiar with pop-ups.

3.9 Concept of JUMP TO

Once the facilitator had explained it to them, most participants commented that the Jump-To function could be useful to them. One or two were surprised that they could not jump forward. One participant wanted it to be called “Jump Back” because “Jump To” implies navigating forwards as well as backwards.

One participant said the Jump-To procedure looked “complex.” She was concerned about having to remember the names of the screens. She commented that taking the time to do it this way might “mess up [her] rapport with the respondent” (2). The third participant liked the idea of making corrections right where they needed to be made instead of in an edit or note at the end, which she said is likely to get lost. Another participant wanted a function to jump to the next unanswered question after jumping back (5). She currently uses the F1 key or the back arrow to go back and the End key to go to the next unanswered question.

The screens associated with the Jump-To function are provided in Appendix C.

3.10 Other Findings and Observations

In addition to answering the teams concerns, the interviewer review surfaced several other findings, as listed next:

(Numbers in parentheses are participant ID numbers.)

- Although the satisfaction ratings were generally quite positive, some individual ratings were rather low. The full set of ratings is included in Appendix D.
- Some participants commented that they are used to a field being ready with the cursor already there for them to type. They did not like having to click in the field to prepare the cursor for typing. (1, 4)

- Several participants disliked tabbing. One said, “we don’t tab in surveys; we usually enter.” (1) One said she prefers using the Enter key to tabbing (2).
- According to the first participant, telephone interviewers are used to using the up and down arrows to go to the previous screen and back to the current screen. They use the separate arrow keys, not the arrow keys in the keypad. Another participant said she uses F1 to return to the current screen.
- One participant wanted to show us the American Community Survey (ACS) so that we could “see how it flows” (1).
- Another participant wanted us to look at the National Crime Victimization Survey for their method of keeping and deleting duplicates (3).
- Entering the house number separate from the street name goes against standard practice. One or two participants began to enter the street name after the house number and had to delete it.
- The introduction that is read to respondents may be too long. Participants told us that respondents want to get right to the questions. Is there a way to give the information but not all at one time?
- One participant (5) said she writes down the name of the person she is trying to reach and the phone number when she is reviewing the data. She wants to have the name available if there is a system problem when the person answers the phone.
- Participants did not necessarily know that check boxes mean it is possible to select more than one option.
- Most participants used the dropdown lists for the state names but later said that they usually begin typing the abbreviation for the state. Some said they were not sure how the dropdown lists would work; so they did not try typing the abbreviation.

In the team discussion, it was noted that a requirement for tabbing order does not appear in the user-interface design document. The team would expect to have a text cursor displayed when the interviewer needs to enter something into a text box, but not when the task is to select one of several radio buttons.

3.11 User Satisfaction Ratings

Full results of the satisfaction questionnaire are provided in Appendix D. Since the mid-point of the scale is 5, ratings above 5 suggest a more positive experience than do ratings below 5. The mean ratings for the participants ranged from a low of 4.1 to a high of 6.6. The mean ratings for the individual QUIS items ranged from a low of 4.0 for “Going back to previous questions” to a high of 6.8 for “Information displayed on the screens.” Two other items had mean ratings below the mid-point of the scale: Overall reaction to the Web-based instrument (4.8) and Overall experience of entering information (4.2). The means for other items clustered around the mid-point, with the exception of Use of terminology throughout the instrument (6.5).

4.0 Discussion

An obvious limitation was that the participants were not working with a fully functional system. At some points, the facilitator had to intervene to bring up the correct screen in a sequence or to explain how a design element would work if it were functional. Using a partially functional prototype is, however, a standard method in usability engineering. This kind of prototype allows the design team to obtain early feedback on design concepts, while it is still feasible to make changes.

In general, the participants appeared to adapt well to the nature of the prototype. Occasionally, a participant tried something to see if it worked as she expected it to but then accepted that it was not working. There was occasional confusion when the next screen in a sequence came up even though the participant had not performed the procedure as designed (e.g., in the keep-and-delete segment of the first scenario). The facilitator talked the participants through these situations, and they did not seem to affect the participants' overall interaction with the prototype. Several participants commented that the design had "a long way to go," perhaps because of the gaps in the prototype screens.

Members of the participant group were experienced in WebCATI and, thus, had expectations for how the user interface should behave. The influence of prior experience was most notable in the participants' objections to the point-and-click style of navigation, as opposed to the keyboard method they are used to. Their perception was that pointing and clicking would take more time than it currently takes to move through an online questionnaire.

Regardless of prior exposure to WebCATI, the participants' perception may be correct. It may take longer with the point-and-click design than with the keyboard alternative. We would have to conduct a controlled test to determine whether the perceived time difference is real. Since pointing and clicking is not the only method that will be available to interviewers in the final system, the team noted participants' objections to pointing and clicking but decided not to make any changes in this area.

5.0 References

Chin, J. P., Diehl, V. A., and Norman, K. L. (1988). Development of an instrument measuring user satisfaction of the human-computer interface. *Proceedings of CHI '88: Human Factors in Computing Systems* (pp. 213-218). New York: ACM.

Gunnison Consulting Group, Inc. and Z-Tech Corporation. (2005). *2005 Internet Prototype Development User Interface Design Document* (Contract No: 50:YABC-2-66044; Task Order 004; Document ID: 05NCT-AAD-0002). Suitland, MD: U. S. Census Bureau.

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Appendix A. General Introduction

Thanks for your time today. My name is Betty Murphy, and I'll be working with you to evaluate some design concepts that we are considering for use in the Coverage Followup Interview as part of the next Census, in 2010. The Coverage Followup operation will be conducted to make sure that no one was missed from the census or counted twice.

I want to emphasize that this is not a test of your skills or abilities. You are helping us evaluate a preliminary screen design for use by telephone interviewers. Your feedback is valuable, and we appreciate your help.

Before we continue, I would like to ask you to read and sign this consent form. We request your consent to videotape the session. The tape will be used to remind us of exactly what occurred during the session. The tapes will be viewed only by members of the project team. Your identity will be kept confidential.

Do you have any questions?

What you will be helping us evaluate is a set of partially complete prototype screens. You will be calling a person who is a member of the project team. She will answer the questions as a representative of the Thundercat household. All of the situations and data have been made up for the purpose of this evaluation session.

The screens that you will be viewing are not fully functional. In a few cases, I may need to stop you briefly or pretend that I'm the computer to make the correct action happen.

We will be going through four scenarios or mock interviews. None of them will be a complete interview, but the segments that we do will give us useful information about the design. The first scenario is the longest; the other three are quite brief. All together, this should take about an hour.

As you progress through portions of an interview, I may break in with a question for you. The person on the phone knows about this and will be expecting it. You do not need to offer any explanation when this happens.

At the end of each scenario we will spend some time discussing the screens you saw during that part of the session. After the last scenario, we will have a general discussion. We are looking for your feedback – both positive and negative -- on the screen designs. We want to get a feel for what works for you and what doesn't work, so please don't hold back any comments. Don't worry about hurting my feelings.

Do you have any questions?

Appendix B. Consent Form

The Census Bureau routinely tests products used for collecting information about the U.S. population in order to keep the country informed about changes and trends.

You have volunteered to provide feedback on a set of Web pages that may be used for collecting information about households during the 2008 Coverage Follow-up (CFU) operation. This review will help the Census Bureau identify improvements that need to be made to the Web pages before they are used in CFU in 2008 and to inform the design of CFU Web pages for the 2010 Census.

In order to have a complete record of your comments, your review session will be videotaped. We plan to use the tapes mainly to help us remember the details of your session. Staff involved in this design research will have access to the tapes. Clips from your tape may be used to illustrate points in our report. Your comments will be combined with the comments of others in our report, and you will not be identified by name.

I have volunteered to participate in this Census Bureau product design review, and I give permission to be videotaped and for my tapes to be used for the purposes stated above.

Participant's Signature

Printed Name

Date

Appendix C. Scripts and Screens for the Test Scenarios

Figures 12 through 41 represent the screens associated with the first scenario.

Scenario 1:

The screenshot shows a software interface for a survey. At the top, there are five buttons: 'Help F1', 'FAQ F2', 'Roster F3', 'Notes F4', and 'Exit F10'. Below these is a header bar with 'Section A: Contacting the Household - RIGHTHH' on the left, 'Interview' in the center, and 'Jump To F12' on the right. The main content area contains a blue link: '→ Go to FAQs or Help Screen for any questions regarding the survey.' Below this is the text: 'Hello, my name is _____ and I'm from the U.S. Census Bureau. Have I reached the Thundercat household?'. There are two radio button options: '1. Yes' and '9. No'. At the bottom, there are two navigation buttons: 'Previous F5' with a left arrow and 'Next F8' with a right arrow.

Figure 12. Contacting the household – RIGHTHH

Interviewer: Hello, my name is ____ and I'm from the U.S. Census Bureau. Have I reached the Thundercat household?

Respondent: Yes

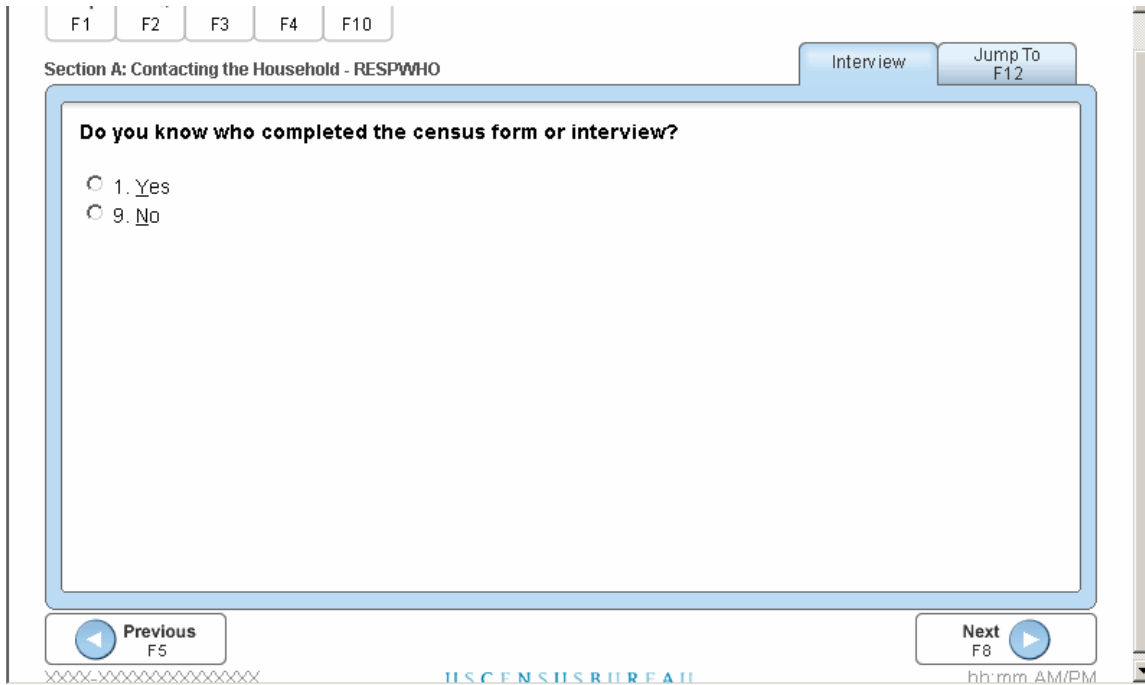


Figure 13. Contacting the household – RESPWHO

Interviewer: Do you know who completed the census form or interview?

Respondent: No

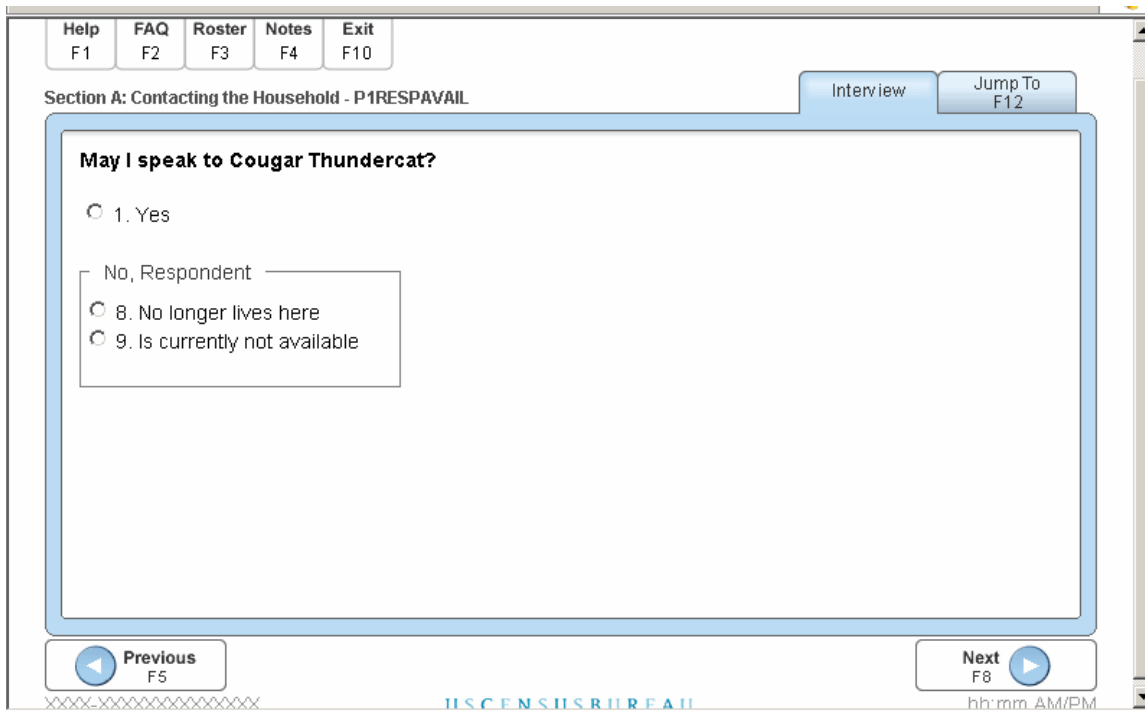


Figure 14. Contacting the household -- P1RESPAVAIL

Interviewer: May I speak to Cougar Thundercat?

Respondent: He doesn't live here any more

F1 F2 F3 F4 F10

Section A: Contacting the Household - NEWRESP Interview Jump To F12

Can I speak with an adult member of the THUNDERCAT household who was living here on April 1, 2006?

1. Yes

9. No

Previous F5 Next F8

USCENSUSBUREAU hh:mm AM/PM

Figure 15. Contacting the household – NEWRESP

Interviewer: Can I speak with an adult member of the Thundercat household who was living here on April 1, 2006?

Respondent: Yes, I was living here then

F1 F2 F3 F4 F10

Section A: Contacting the Household - NEWRESPNAME Interview Jump To F12

→ Once person who filled out the form is on the phone, introduce yourself if necessary.

What is your name?

Previous F5 Next F8

USCENSUSBUREAU hh:mm AM/PM

Figure 16. Contacting the household – NEWRESPNAME

Interviewer: What is your name?

Respondent: Lion Thundercat

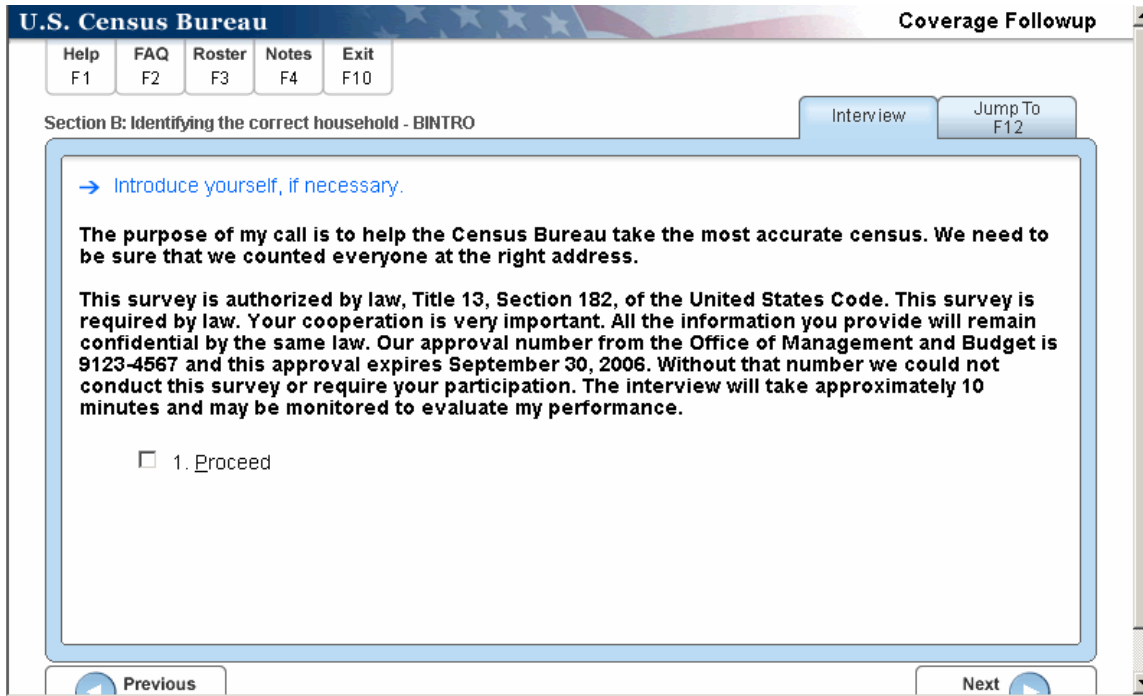


Figure 17. Identifying the correct household – BINTRO

Interviewer: Hello, my name is

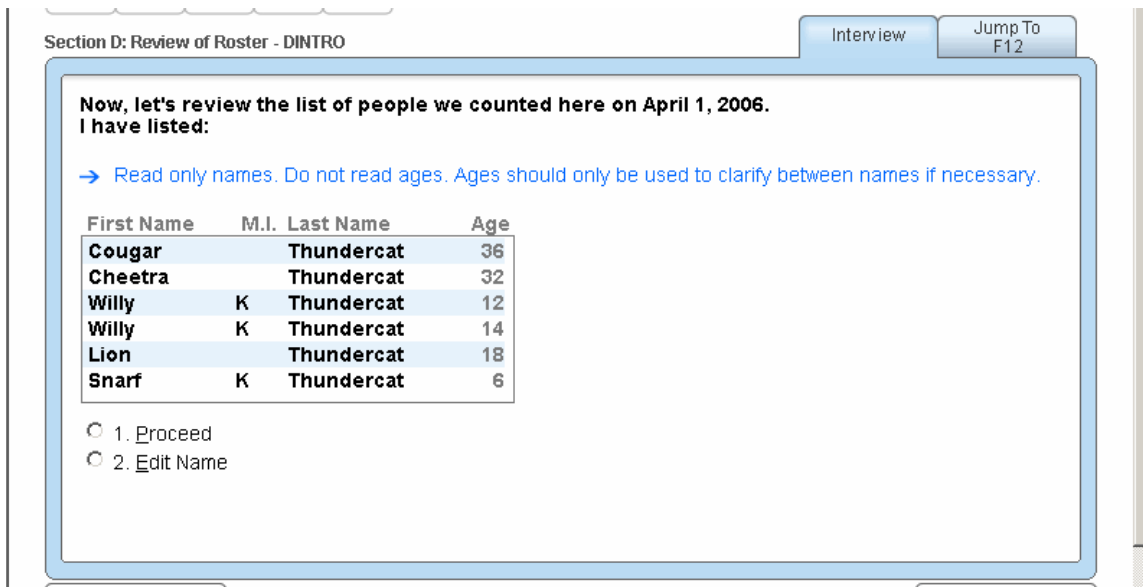


Figure 18. Review of Roster – DINTRO

Interviewer: Now, let's review the list of people we counted here on April 1, 2006. I have listed: Cougar Thundercat, Cheetra Thundercat, Willy K Thundercat age 12, Willy K Thundercat age 14, Lion Thundercat, and Snarf Thundercat.

Respondent: Cheetra Thundercat should be Cheeto Thundercat (Interviewer may ask for spelling.)

Note: Pop-up message associated with Figure 18 appears in the text as Figure 10.

U.S. Census Bureau Coverage Followup

Help F1 | FAQ F2 | Roster F3 | Notes F4 | Exit F10

Section D: Review of Roster - DUPLICATEMORE1 Interview Jump To F12

Is there anyone on this list more than once?

1. Yes
 9. No

First Name	M.I.	Last Name	Age
Cougar		Thundercat	36
Cheeto		Thundercat	36
Willy	K	Thundercat	12
Willy	K	Thundercat	14
Lion		Thundercat	18
Snarf	K	Thundercat	6

Previous F5 | Next F8

Figure 19. Review of Roster -- DUPLICATEMORE1

Interviewer: Is there anyone on this list more than once?

Respondent: Yes

U.S. Census Bureau Coverage Followup

Help F1 | FAQ F2 | Roster F3 | Notes F4 | Exit F10

Section D: Review of Roster - DUPLICATEKEEP Interview Jump To F12

→ You will identify "duplicates" one set at a time. If there are more than one 'set' you will be prompted to identify them later.

Who is the person listed more than once?

→ Select the person you want to keep. This person should have the most correct name and age data. If the data look similar keep the person with the lowest person number.

1. Cougar Thundercat 36
 2. Cheeto Thundercat 32
 3. Willy Thundercat 12
 4. Willy Thundercat 14
 5. Lion Thundercat 18
 6. Snarf Thundercat 6

Previous | Next F8

Figure 20. Review of Roster – DUPLICATEKEEP

Interviewer: Who is the person listed more than once?

Respondent: Willy. He's only 12 not 14.

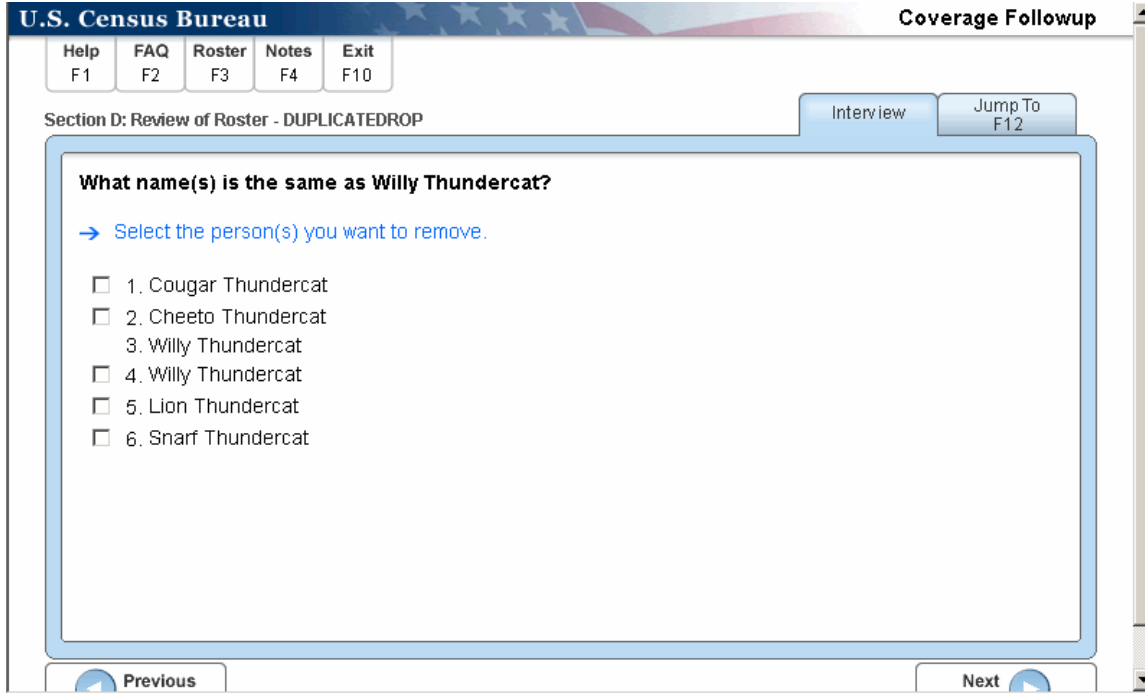


Figure 21. Review of Roster – DUPLICATEDROP

Interviewer: What name is the same as Willy Thundercat?

Respondent: The other Willy Thundercat

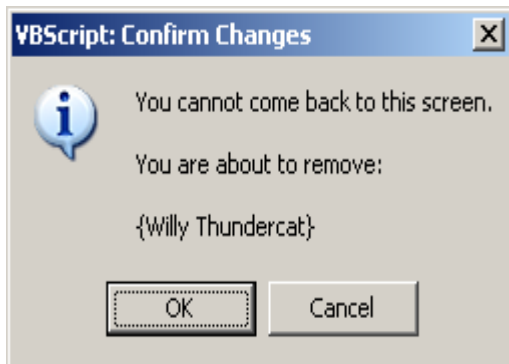


Figure 22. Pop-up message displayed when the interviewer tries to proceed after selecting name(s) to delete.

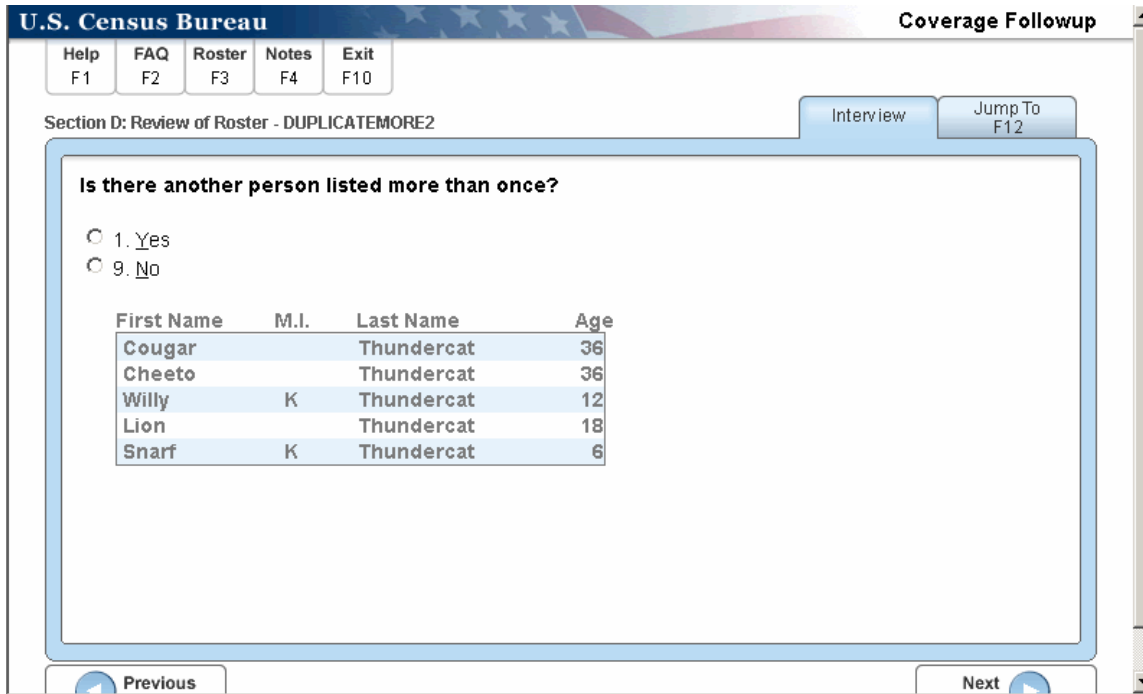


Figure 23. Review of Roster -- DUPLICATEMORE2

Interviewer: Is there another person listed more than once?

Respondent: No

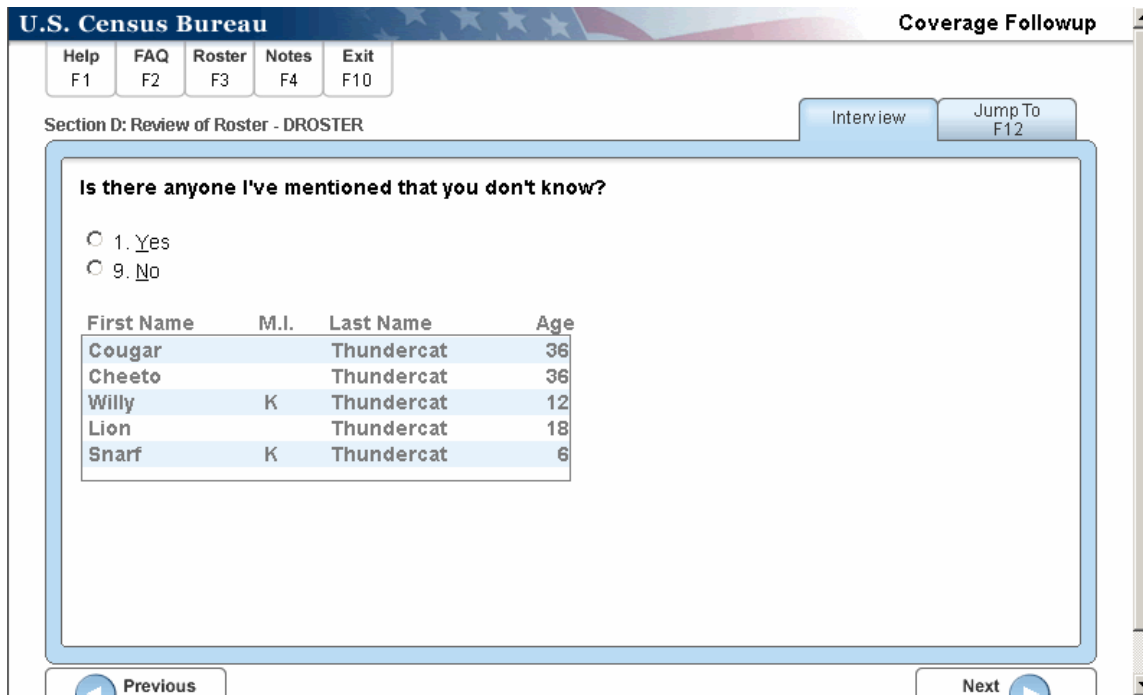


Figure 24. Review of Roster – DROSTER

Interviewer: Is there anyone I've mentioned that you don't know?

Respondent: Yes- I don't know Snarf.

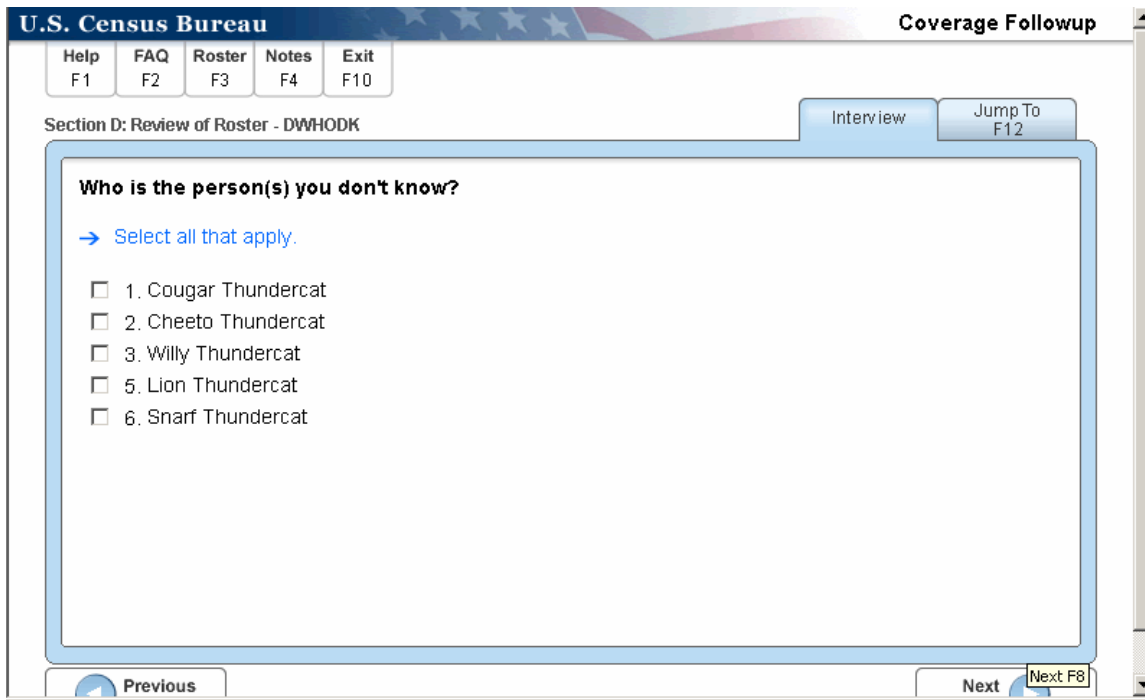


Figure 25. Review of Roster – DWHODK

Interviewer: Who is the person you don't know?

Respondent: Snarf

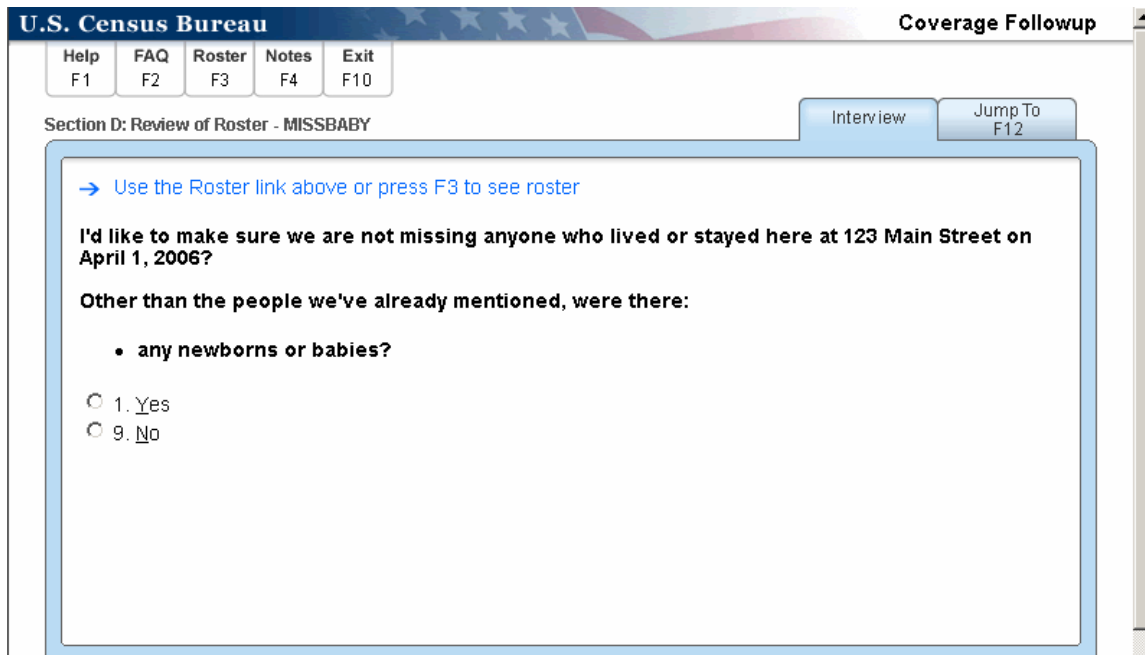


Figure 26. Review of Roster – MISSBABY

Interviewer: I'd like to make sure we are not missing anyone who lived or stayed here at 123 Main Street on April 1, 2006. Other than the people we've already mentioned, were there any newborns or babies?

Respondent: Yes

U.S. Census Bureau Coverage Followup

Help F1 FAQ F2 Roster F3 Notes F4 Exit F10

Section D: Review of Roster - ADDPER Interview Jump To F12

What is his or her name and age?

First Name M.I. Last Name Age

Previous Next Next F8

Figure 27. Review of Roster – ADDPER

Interviewer: What is his or her name and age?

Respondent: Kat C Thundercat and she's 3 months

U.S. Census Bureau Coverage Followup

Help F1 FAQ F2 Roster F3 Notes F4 Exit F10

Section D: Review of Roster - BABYELSE Interview Jump To F12

Are there any other new newborns or babies?

1. Yes

9. No

Figure 28. Review of Roster – BABYELSE

Interviewer: Are there any other new newborns or babies?

Respondent: Yes her twin

U.S. Census Bureau Coverage Followup

Help F1 FAQ F2 Roster F3 Notes F4 Exit F10

Section D: Review of Roster - ADDPER Interview Jump To F12

What is his or her name and age?

First Name M.I. Last Name Age

Previous Next Next F8

Figure 29. Review of Roster – ADDPER

Interviewer: What is his or her name and age?

Respondent: Kit K Thundercat and she's also 3 months

U.S. Census Bureau Coverage Followup

Help F1 FAQ F2 Roster F3 Notes F4 Exit F10

Section D: Review of Roster - MISSFOSTER Interview Jump To F12

Any foster children?

1. Yes

9. No

Previous Next

Figure 30. Review of Roster – MISSFOSTER

Interviewer: Any foster children?

Respondent: No

U.S. Census Bureau Coverage Followup

Help F1 FAQ F2 Roster F3 Notes F4 Exit F10

Section E: Movers - EMVOUT Interview Jump To F12

In March or April, did anyone move out including those people you just added?

1. Yes

9. No

Previous Next

Figure 31. Movers – EMVOUT

Interviewer: In March or April, did anyone move out including those people you just added?

Respondent: Yes

F1 F2 F3 F4 F10

Section E: Movers - MVOUTNAME Interview Jump To F12

Who moved out? Please list all people who moved out around April 1, 2006.

→ [Check all that apply.](#)

1. Cougar Thundercat

2. Cheeto Thundercat

3. Willy Thundercat

5. Lion Thundercat

6. Kat Thundercat

7. Kit Thundercat

Figure 32. Movers – MVOUTNAME

Interviewer: Who moved out? Please list all people who moved out around April 1, 2006.

Respondent: Cougar

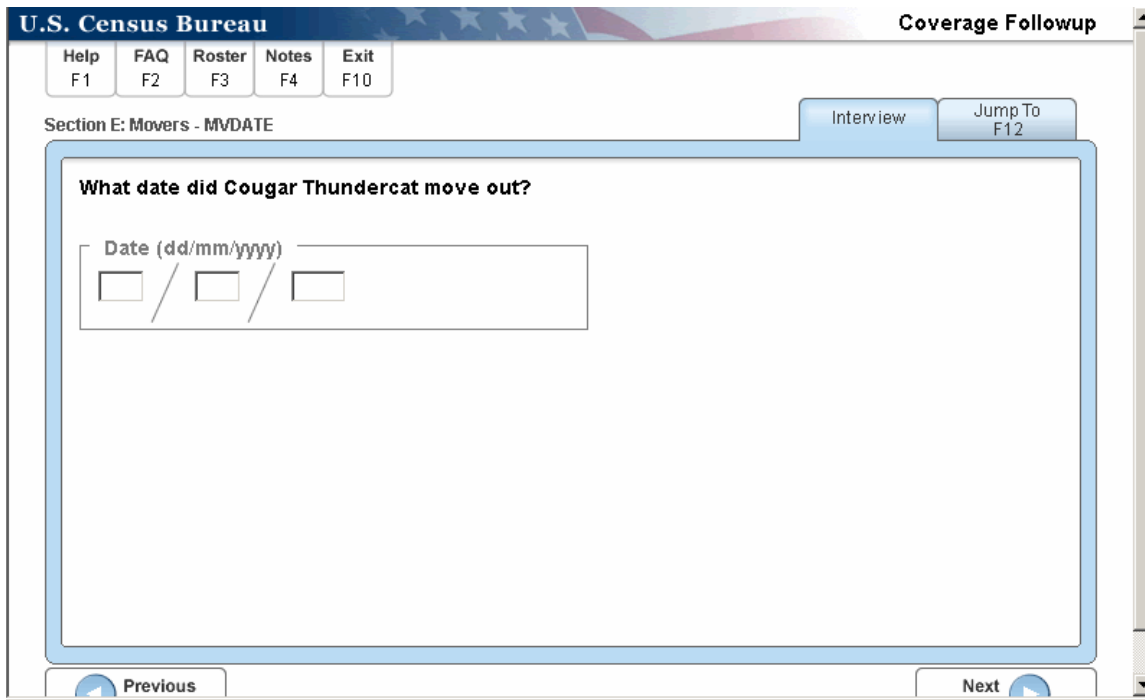


Figure 33. Movers – MVDATE

Interviewer: What date did Cougar Thundercat move out?

Respondent: I don't know

Stop for Discussion. Facilitator shows the Don't Know process. Interviewer clicks NEXT to see screen with Don't Know indicated and then presses Next to continue.

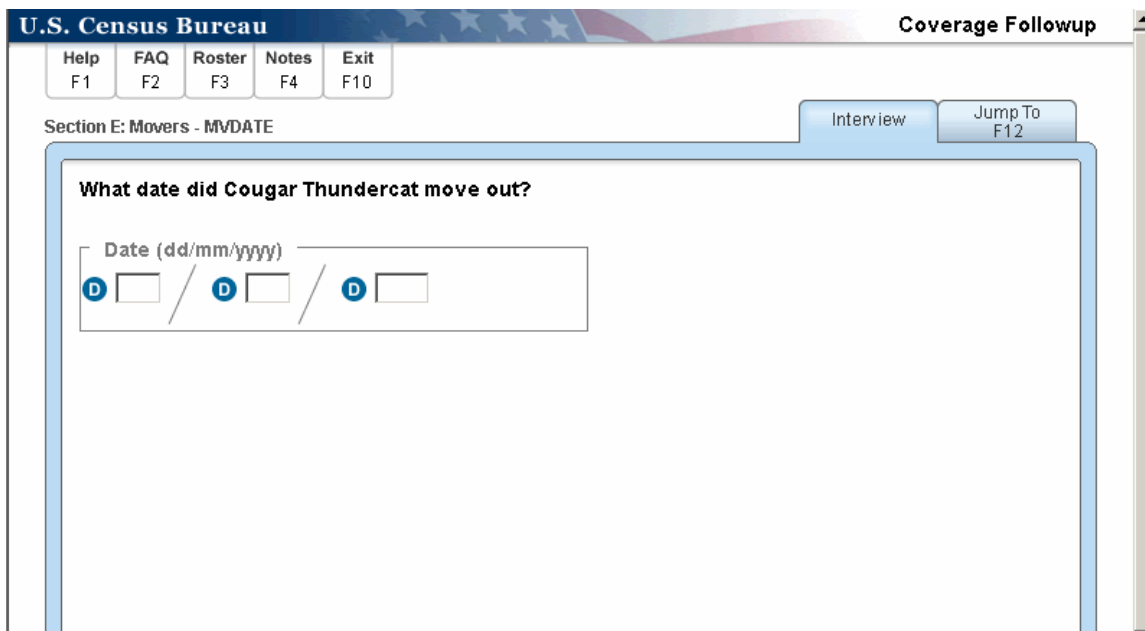


Figure 34. Movers -- MVDATE with symbols displayed for “Don't Know” responses.

U.S. Census Bureau Coverage Followup

Help F1 FAQ F2 Roster F3 Notes F4 Exit F10

Section F: Other Addresses - FCOLYN Interview Jump To F12

In the Spring of 2006, was anyone attending college?

1. Yes

9. No

Previous Next Next F8

Figure 35. Other Addresses – FCOLYN

Interviewer: In the spring of 2006 was anyone attending college?

Respondent: Yes

U.S. Census Bureau Coverage Followup

Help F1 FAQ F2 Roster F3 Notes F4 Exit F10

Section F: Other Addresses - COLNAME Interview Jump To F12

Who was attending college?

1. Lion Thundercat

Other Member of Roster

Previous Next

Figure 36. Other Addresses – COLNAME

Interviewer: Who was attending college?

Respondent: Me, Lion

U.S. Census Bureau Coverage Followup

Help F1 | FAQ F2 | Roster F3 | Notes F4 | Exit F10

Section F: Other Addresses - COLADDRESS Interview Jump To F12

→ Probe for Dorm and Complex Name

What is the address where you were staying while attending college?

House Number: Street:

City: State: ZIP Code + 4: -

Dorm or Complex Name:

Figure 37. Other Addresses – COLADDRESS

Interviewer: What is the address where you were staying while attending college? Including Dorm and Complex name

Respondent: I don't feel comfortable giving you the address. The Dorm was called The Den.

Stop for Discussion. TA shows Refuse process. Interview clicks NEXT to see screen with Refused indicated and then presses Next to continue.

U.S. Census Bureau Coverage Followup

Help F1 | FAQ F2 | Roster F3 | Notes F4 | Exit F10

Section F: Other Addresses - COLADDRESS Interview Jump To F12

→ Probe for Dorm and Complex Name

What is the address where you were staying while attending college?

House Number: Street:

City: State: ZIP Code + 4: -

Dorm or Complex Name:

Figure 38. Other Addresses – COLADDRESS with symbols displayed for “Refused” responses

U.S. Census Bureau Coverage Followup

F1 F2 F3 F4 F10

Section F: Other Addresses - FGQYN

Was Cheeto Thundercat staying in any of these places?

- 1. Assisted Living
- 2. Nursing Home
- 3. Correctional Facility
- 4. Emergency or Transitional Shelter
- 5. Group Home
- 6. Some other Group Facility
- 7. None of these places

Figure 39. Other Addresses – FGQYN

Interviewer: Was Cheeto Thundercat staying in any of these places? Assisted Living, Nursing Home, Correctional Facility, Emergency or Transitional Shelter, Group Home, or Some Other Group Facility?

Respondent: Some other facility

Help F1	FAQ F2	Roster F3	Notes F4	Exit F10
------------	-----------	--------------	-------------	-------------

Section F: Other Addresses - FGQADDRESS

Interview Jump To F12

What kind of place is it?

What is the name of that place?

What is the address of that place?

House Number	Street
<input type="text"/>	<input type="text"/>
City	State ZIP Code + 4
<input type="text"/>	<input type="text"/> - <input type="text"/>

Figure 40. Other Addresses – FGQADDRESS

Interviewer: What kind of place is it?

Respondent: A Rehab Facility

Interviewer: What is the name of that place?

Respondent: Sunny Outlook

Interviewer: What is the address of that place?

Respondent: 456 Help Ave, Prairie, Nebraska, 12345-5555

U.S. Census Bureau					Coverage Followup
Help F1	FAQ F2	Roster F3	Notes F4	Exit F10	

Section H: Exit - COMPEXIT

Interview Jump To F12

Those are all the questions I have. If you have any comments about the amount of time we estimated to complete the survey or any other aspect of this survey, I can give you an address where you can write to express your comments. Would you like that address?

→ (Read only if necessary)

Associate Director for Administration
 Paperwork Project {fill OMBNUM}
 U.S. Census Bureau
 Room 3104-3
 Washington, D.C. 20233

You may also email comments to Paperwork@census.gov, use "Paperwork Project - {fill OMBNUM}" as the subject.

Thank you for your time and cooperation. You've been very helpful.

1. Proceed

Figure 41. Exit -- COMPEXIT

Interviewer: Those are all the questions...Would you like that address?

Respondent: No Thank you.

Interviewer: Thank you for your time and cooperation.

Several of the screens for the remaining scenarios had been used in Scenario 1, as indicated by reference to the figure numbers.

Scenario 2:

Figure 12.

Interviewer: Hello, my name is ____ and I'm from the U.S. Census Bureau. Have I reached the Thundercat household?

Respondent: Yes

Figure 13.

Interviewer: Do you know who completed the census form or interview?

Respondent: Yes

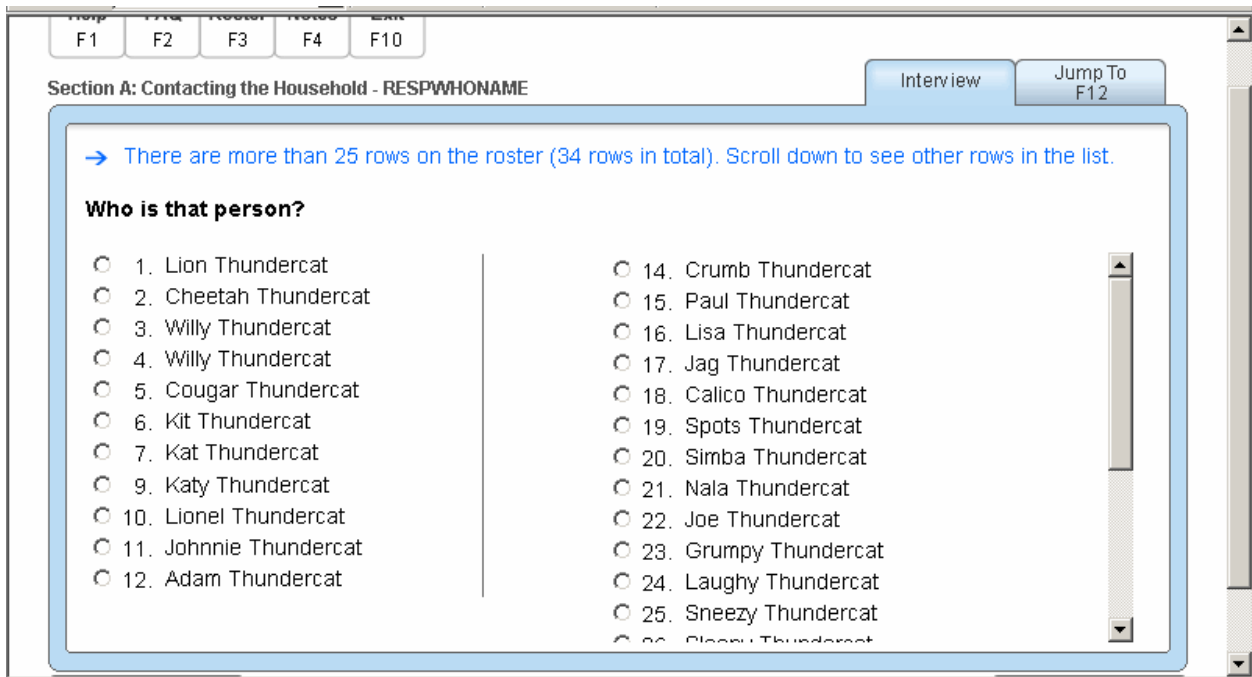


Figure 42. Contacting the Household -- RESPWHONAME

Respondent: Who is that person?

Respondent: Tiger

The interviewer has to scroll down to find Tiger on the list.

Scenario 3:

Figure 12.

Interviewer: Hello, my name is ____ and I'm from the U.S. Census Bureau. Have I reached the Thundercat household?

Respondent: Yes

Figure 13.

Interviewer: Do you know who completed the census form or interview?

Respondent: Yes

The screenshot shows a survey window titled "Section A: Contacting the Household - RESPWHONAME". At the top, there are function keys F1, F2, F3, F4, and F10. On the right side, there are two buttons: "Interview" and "Jump To F12". The main content area contains the question "Who is that person?" followed by a list of radio button options:

- 1. Cougar Thundercat
- 2. Cheetra Thundercat
- 3. Willy Thundercat
- 4. Willy Thundercat
- 5. Lion Thundercat
- 6. Snarf Thundercat
- 7. Tygra Thundercat
- 8. Panthro Thundercat
- 9. Lionel Thundercat
- 10. Johnnie Thundercat

- Respondent no longer lives here
- Respondent is nder 15

Figure 43. Contacting the Household – RESPWHONAME (non-scrolling list)

Interviewer: Who is that person?

Respondent: It was the nanny who is no longer living here.

Figure 14.

Interviewer: May I speak to Cougar Thundercat?

Respondent: Yes

Figure 17.

Interviewer: The purpose of my call is...

[Scenario 3 continues on the next page.]

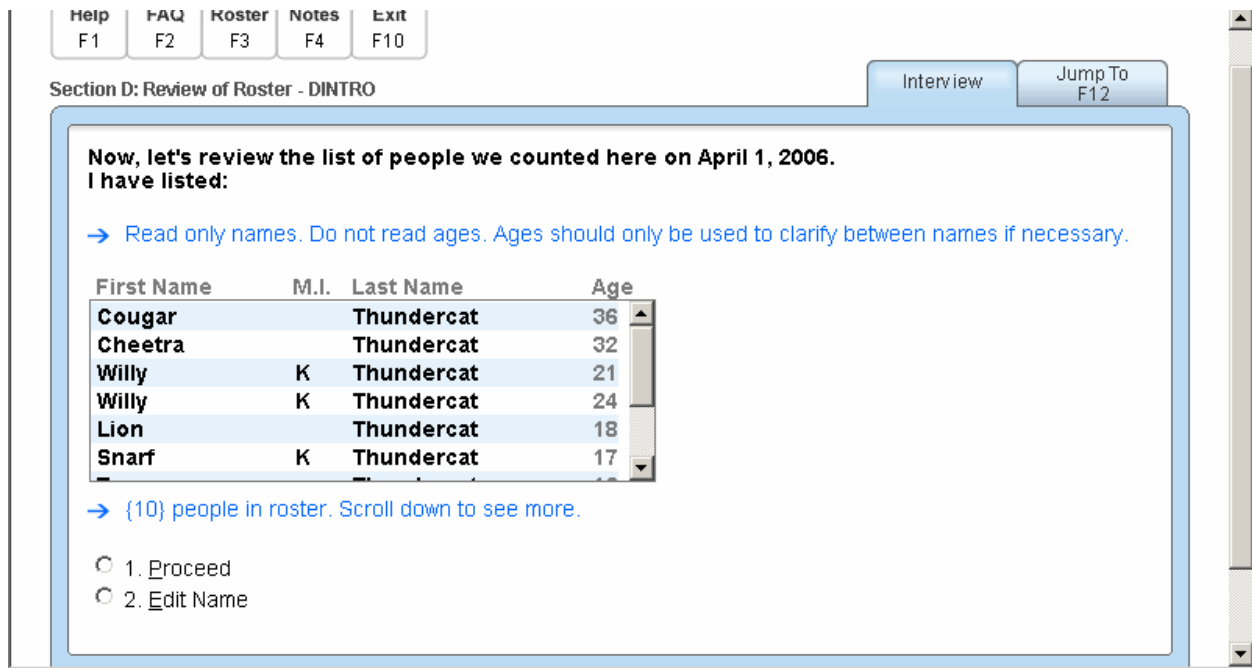


Figure 44. Review of Roster – DINTRO (scrolling list)

Interviewer: Now, let's review the list of people we counted here on April 1, 2006. I have listed: Cougar Thundercat, Cheetra Thundercat, Willy K Thundercat age 21, Willy K Thundercat age 24, Lion Thundercat, Snarf K Thundercat, Tygra Thundercat, Panthro K Thundercat, Lionel Thundercat, and Johnnie Thundercat.

Respondent: That's everyone.

[End Scenario 3]

Scenario 4:

Figure 35.

Interviewer: In the spring of 2006 was anyone attending college?

Respondent: No

Figure 39.

Interviewer: Was Cheeto Thundercat staying in any of these places? Assisted Living, Nursing Home, Correctional Facility, Emergency or Transitional Shelter, Group Home, or Some Other Group Facility?

Respondent: Yes, Assisted Living.

Figure 40.

Interviewer: What kind of place is it?

Respondent: Oh wait, I just remembered. Lion was in college in the spring of 2006 and graduated in May.

Interviewer brings up the Jump To Screen (Figure 45).

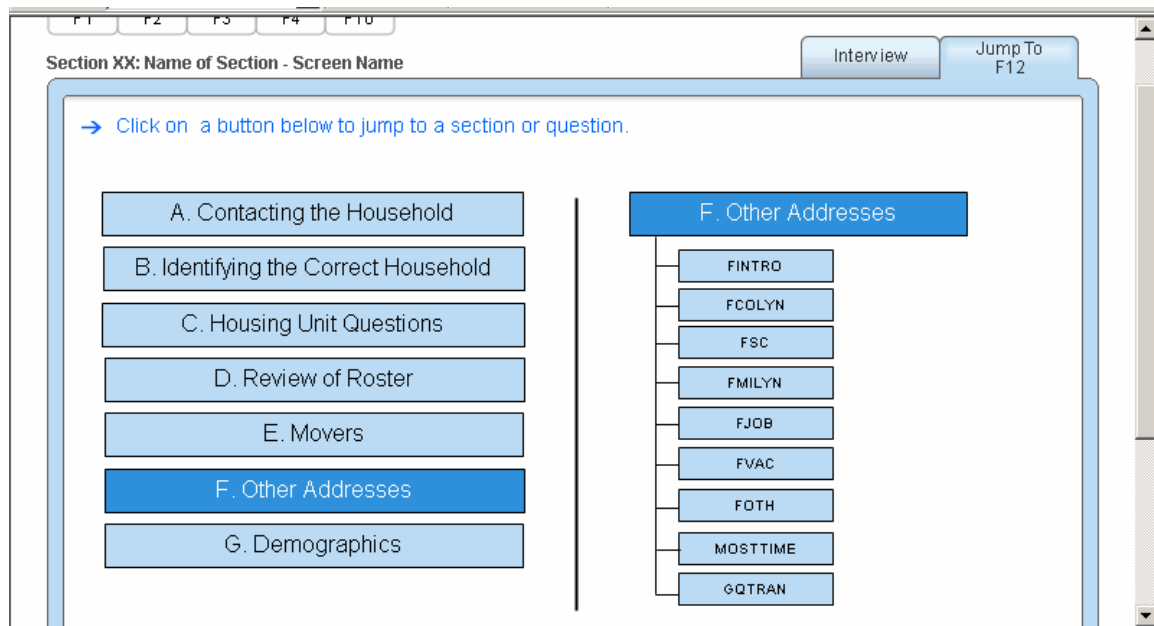


Figure 45. JUMP TO screen.

****The facilitator asks questions about screen and steps the participant through the Jump To Screen and explains that to jump back they would click on F. Other Addresses and then FCOLYN to change answer. To simulate the Jump To, TA must then bring up Scenario 4 folder and open the second start page (which will be the Yes/No College Question).*****

Figure 35.

Interviewer: In the spring of 2006 was anyone attending college?

Respondent: Yes

Figure 36.

Interviewer: Who was attending college?

Respondent: Lion. I want to make sure I've got this correct. Lion was doing a Microsoft certificate program. That counts as attending college, correct?

Interviewer brings up help (Figure 46) and discusses help with the facilitator. If the Interviewer doesn't bring up help, the facilitator may have to prompt

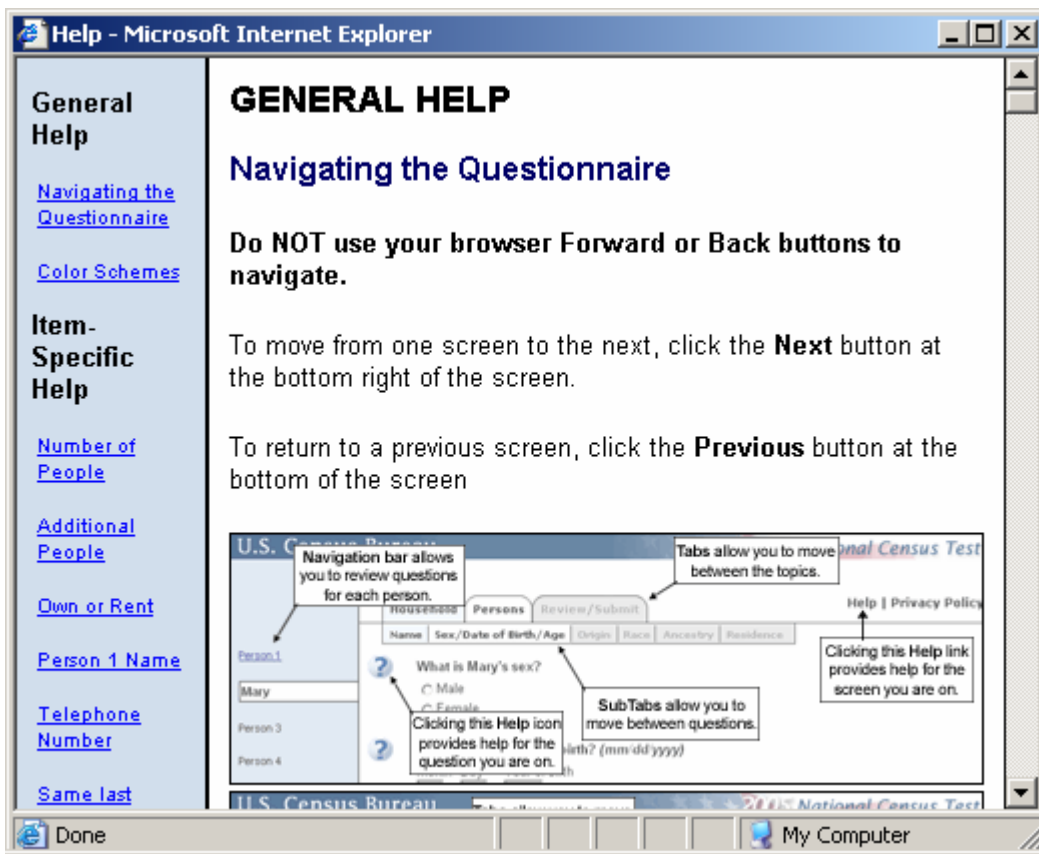


Figure 46. Place holder screen for help tailored to the CFU instrument

The content shown in Figure 46 is from the help file used in the 2005 National Census Test (Internet option). It was used here just as a place holder to show participants that they would be able to get help on respondent questions, such as the question of whether taking a Microsoft certification program counts as attending college.

Appendix D. Questionnaire for User Interaction Satisfaction (QUIS) and QUIS Results

Please circle the numbers that most appropriately reflect your impressions about using this Web-based instrument.

- | | | | | | | | | | |
|--|--------------|---|---|---|---|---|---|------------|------------------|
| 1. Overall reaction to the Web-based instrument | terrible | | | | | | | wonderful | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 not applicable |
| 2. Screen layouts: | confusing | | | | | | | clear | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 not applicable |
| 3. Information displayed on the screens: | inadequate | | | | | | | adequate | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 not applicable |
| 4. Overall experience of entering information: | difficult | | | | | | | easy | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 not applicable |
| 5. Moving forward through the instrument: | difficult | | | | | | | easy | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 not applicable |
| 6. Going back to previous questions: | difficult | | | | | | | easy | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 not applicable |
| 7. Making changes to answers: | difficult | | | | | | | easy | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 not applicable |
| 8. Use of terminology throughout the instrument: | inconsistent | | | | | | | consistent | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 not applicable |

Results for the six participants are given in Table 1 on the next page.

Table 1. Ratings on the Questionnaire for Interaction Satisfaction (N = 6)

Participant	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Mean	Std. Dev.
1	5	5	7	2	2	2	5	5	4.1	1.9
2	3	3	4	3	4	1	3	5	3.3	1.2
3	6	5	5	4	8	4	4	7	5.4	1.5
4	5	5	6	7	8	8	6	8	6.6	1.3
5	5	6	8	6	5	4	7	7	6.0	1.3
6	5	6	8	3	4	5	6	7	5.5	1.6
Mean	4.8	5.0	6.8	4.2	5.2	4.0	5.2	6.5	5.2	
Std. Dev.	0.98	1.1	1.6	1.9	2.4	2.5	1.5	1.2	1.1	

Note: The eight items are those given on the previous page.

Appendix E. Debriefing Questions

1. Can you walk me through your thinking on why you marked [a particular QUIIS item] especially low? [Do this for several low/high QUIIS ratings.]
2. What do you think of the basic screen layout?
 - a. Colors?
 - b. Tabs?
 - c. Arrows at the bottom?
 - d. Help and FAQs at top?
 - e. Navigation?
3. What do you think of the design of the Don't Know and Refuse options?
4. Does the "Jump to" concept work for you?
5. On FGADDRESS (Show Screen), how did you feel about the number of questions on the screen?
6. Were the instructions on reviewing the roster helpful to you? [DINTRO]
7. What did you think of the roster with more than 20 people?
8. Did the process for adding people to the roster work for you?
 - a. Process for identifying duplicates?
 - b. Process for deleting?
 - c. Process for editing?
9. How easy/difficult was it to deal with multiple "no" options?
10. Do you have comments or suggestions on anything we did not talk about?

Appendix F. Changes Proposed by the 2008 CFU User Interface Design Team

2008 CFU Wireframe Testing Results- Proposed Changes
September 7, 2006

1. DUPLICATEKEEP Screen – In the second set of interviewer instructions, put **keep** in all caps for the sentence “Select the person you want to keep.”
2. Interviewer instructions – Make the light blue for the interviewer instructions a slightly darker shade than what is currently in the screenshots.
3. Is there the possibility to implement jump forward functionality so that if a person jumps back they can then click next or jump to button and have that take them to the first unanswered question. Thus if pathing has changed then this would be a new question but if pathing hasn't, this functionality would take them to the spot (next unanswered question) they were at before they jumped back. If this isn't possible then, change the text of the Jump To button to “Jump Back”.
4. Move all interviewer instructions so they appear before the question except for on the following screens:
 - a. DWHODK
 - b. DUPLICATEDROP
 - c. DINTRO- Keep the instruction, “(XXX) people in roster. [Scroll down to see more.](#)” where it is.
 - d. MVOUTNAME
5. Through reviewing the wireframes results we noticed that we inconsistently used interviewer instructions to inform the interviewer that they could check multiple boxes. Some checkbox screens had the instruction while others didn't. During the wireframes testing, the participants indicated that the inherent nature of checkboxes wasn't familiar to them. So we would like all screens with checkboxes to have the interviewer instruction to select all that apply after the question. The following screens need this instruction added:
 - a. GRACE
 - b. MVOUTNAME
 - c. SCNAME
 - d. COLNAME
 - e. MILNAME
 - f. JOBNAME
 - g. VACNAME
 - h. OTHNAME