**1. Informed Consent**

1. Email a PDF of the consent form to participants. Encourage them to read and sign it before they arrive, if possible (NOTE: Otherwise, it takes a while to read it to them).
2. Complete informed consent process.

**If they arrive with a signed consent form:**

* **“**Did you have any questions about the consent form?”
  + If so, answer questions
* Collect the signed consent form.
* Offer them a hard copy of the consent form to keep. (NOTE: Always carry an extra copy of the consent form for each participant.)

**If they arrive without a signed consent form**:

* “To begin, I will read over the consent form. Please let me know if you have any questions.”
  + Read consent form
* “Do you have any questions about the consent form?”
  + If so, answer questions
* “If you would like to participate, I need you to sign the consent form.”
* Collect the signed consent form.
* Offer them a hard copy of the consent form to keep. (NOTE: Always carry an extra copy of the consent form for each participant.)

**2. General Instructions**

a. Read general instructions to users.

* “Thank you for participating in our study. We are testing the effectiveness of a new security system that plays auditory alerts when an internet-based security situation is detected. Testing will occur in three stages. During each stage, you will perform multiple tasks while navigate a webpage, and you may encounter security situations as you do so. At the beginning of each stage, you will be read instructions about your tasks for that stage.”

* “Please note that we are not testing you; we are testing the sounds. Our goal is to improve the design of the sounds. Accordingly, we need and appreciate your honest feedback. If you have any questions during the study, please ask.”
* “Do you have any questions so far?”

b. Read descriptions of cyber situations (see separate sheet).

c. Provide participants with a braille notecard with the names and descriptions of the security situations typed on it.

d. The order of steps 3, 4, and 5 of the procedure (i.e., the order of the web pages) should be randomized.

**3. News Website**

1. Read instructions to users:

* “During this stage of testing you will be navigating the Technology page for the New York Times, a news source. I will give you a series of tasks related to this website. After I read off a task, you will navigate the website by using the “tab” and “enter” keys in order to complete that task. The security alert system will be turned on in addition to the screen reader, so you may hear a sound that indicates a security situation. If you do hear a security alert during the task, please stop performing the task and inform me that you have heard an alert. I may ask you further questions about the alert and the security situation.”

1. Present the 3 tasks to users. For each user, the order of the tasks should be randomized.
   1. **No-alert task:** “Find and open an article by Quentin Hardy about the financial stability of Amazon’s Cloud Computing division.”

* [correct response: open “Challenges for Amazon’s Cloud Computing Hopes”]
  1. **Task-relevant alert:** “Find and open an article by Quentin Hardy about the relevance of Moore’s Law in the age of cloud computing.”
* [alert will sound; “Is Moore’s Law Less Important to the Tech Industry?” is a malicious link]
  1. **Non-task-relevant alert**: “Find and open an article by Jenna Wortham about Smart Garbage.”
* [alert will sound; “Is Moore’s Law Less Important to the Tech Industry?” is a malicious link]

1. After the participant completes the two tasks during which alerts sound (tasks ii and iii), ask the participant questions about the alerts. (NOTE: These questions will be the same for all websites.)

**If the user hears the alert and states so:**

**If this is the first time they’ve heard the alert:**

* “What security situation do you think the sound conveyed?”
* “Why do you think the sound represented [insert their answer]?”
* “If I had not told you to stop after hearing an alert, what actions would you have taken in response to the sound?”

**If this is the second time they’ve hear the alert:**

* “If I had not told you to stop after hearing an alert, what actions would you have taken in response to the sound?”

**If the user keeps performing the task after an alert has sounded,** wait until they finish the task. Then ask if they had detected the alert:

* “An alert played during the task. Did you hear an alert?”

**If they did:**

* “Why did you continue after you heard the alert?”
* “What security situation do you think the sound conveyed?”
* “Why do you think the sound represented [insert their answer]?”

**If they did not, take them back to the tab where they first heard an alert:**

* “This is the alert that played during the task. Why do you think that you did not hear the alert?”
* “What security situation do you think the sound conveyed?”
* “Why do you think the sound represented [insert their answer]?”

1. After all tasks have been completed, let the participant take a break.

* “Would you like a break before we move on?”

**4. PetsPlus**

1. Read instructions to users:

* “During this stage of testing you will be navigating an online pet shop called PetsPlus. I will give you a series of tasks related to this website. After I read off a task, you will navigate the website by using the “tab” and “enter” keys in order to complete that task. The security alert system will be turned on in addition to the screen reader, so you may hear a sound that indicates a security situation. If you do hear a security alert during the task, please stop performing the task and inform me that you have heard an alert. I may ask you further questions about the alert and the security situation.”

1. Present the 3 tasks to users. For each user, the order of the tasks should be randomized.
   1. **No-alert task:** “You are interested in becoming a PetsPlus member. How much would it cost per year for a PetPlus Protection Plan? You can find this information on the Frequently Asked Questions page (faq).”

* answer: $50/year (found on the “faq” page)
  1. **Task-relevant alert:** “This site has a video on dog training. What kind of dog treats does the trainer in the video suggest using during training?”
* [task-relevant link is malicious; no answer]
  1. **Non-task-relevant alert**: “Find and download a song about a cat”
* [malicious web pages passed en route]
* [no answer; link takes you to a 404 page]

1. After the participant completes the two tasks during which alerts sound (tasks ii and iii), ask the participant questions about the alerts
2. After all tasks have been completed, let the participant take a break.

* “Would you like a break before we move on?”

**5. Online Banking**

1. Read instructions to users:

* “During this stage of testing you will be navigating an online banking website. I will give you a series of tasks related to this website. After I read off a task, you will navigate the website by using the “tab” and “enter” keys in order to complete that task. The security alert system will be turned on in addition to the screen reader, so you may hear a sound that indicates a security situation. If you do hear a security alert during the task, please stop performing the task and inform me that you have heard an alert. I may ask you further questions about the alert and the security situation.”

1. Present the 3 tasks to users. For each user, the order of the tasks should be randomized.
   1. **No-alert task:** “If you were a member of this bank, open the page that you would go to report a missing credit card.”

* correct response: participant will open “Report Lost Credit Card” page
  1. **Task-relevant alert:** “Open an account with this bank. The website may prompt you for personal information like your address or social security number; it is ok to type in false information during this study.”
* [malicious sounds will play as they fill in the form]

1. After the participant completes the task during which alerts sound (task ii), ask the participant questions about the alerts
2. After all tasks have been completed, let the participant take a break.

* “Would you like a break before we move on?”

**6. Answer Demographic Questions**

1. Read instructions to users.

* “During this stage of testing, I am going to ask you questions about yourself. If you would like me to repeat a question, please let me know.”

1. Ask user demographic questions.
2. Offer a break

* “Would you like a break before we move on?”

**7. Debriefing Statement**

* “That concludes our testing. Thank you for participating in our study. Your feedback will help us improve the sounds that we created to alert users about security situations that they might experience while using their computers. Do you have any comments or questions?”