

# Tutorial 1: Design a think-aloud study

## INFR11158: Usable Security and Privacy

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### Introduction

In this tutorial, you will be designing a think-aloud study which you will then run in tutorial 2.

When designing a study in usable security and privacy you should always start by understanding the security and privacy implications of the technology you are working with. A good set of questions to start with are:

- What is the purpose of this technology?
- What threats is the technology designed to protect users against?
- How should an end-user interact with this technology to ensure that they are “safe”?
  - Are there any steps they need to do?
  - Are there any errors they could make that might put them in a dangerous situation?

For this tutorial, we will be studying advertising cookie opt-out websites. Many advertisers belong to advertising alliances, which are organizations that provide support and advocate on behalf of their members. One service advertising alliances provide is a single cookie opt-out page for consumers that will opt them out of all behavioral tracking from all members. They provide this service, even though it is obviously not profitable, because it allows the alliance to prove to policy makers that they do indeed give users an “easy” way to opt-out of tracking.

Today you will be engaging in two activities:

1. Exploring your assigned cookie opt-out page.
2. Designing a think-aloud study that you will run next week.

### Target Users

The target user for these websites is anyone who uses the internet regularly. That is quite a broad audience. Normally when looking at such a broad category, we instead start by using a smaller set of participants using a qualitative methodology and see how they think and behave. Then we use a more quantitative approach to see if what we are observing is true for the broader set of participants.

For our small think-aloud pilot we will be using other USec students. Technically this is called a “convenience sample” because we are using participants who are easy to find (other people in tutorial). Today we will be designing the study, and next week we will be running the study on each other.

## Exploring the cookie opt-out page

Your tutor will give you a slip of paper that contains the name and URL of a cookie opt-out service.

To learn about your assigned site, do the following:

1. Go to the website and try to express your cookie tracking preferences. You can opt-out or opt-in if you prefer. Pick what you yourself prefer.
  - a. Take notes while you do this about issues you have. Terms that are confusing. Or any part of the interface where you tried doing something, but it didn't work.
  - b. Try and think about what other people might find confusing and write that down too.
  - c. It is ok to ask the Tutor questions about cookies or the interface during this part if anything is confusing.
2. Figure out if you were successful in opting out (or in).
  - a. Use a search engine, like Google, to learn how to view stored cookies on your browser.
  - b. Pick a couple of the companies listed on the opt-out page and find their domain names (URLs).
  - c. Look through the cookies on your browser and see if you have been successful in opting out of (or in to) cookie tracking.
  - d. Did you successfully opt-out (or in) as you expected to?
3. Look at the outcomes of 1 and 2 above. Make a list of errors you think other Informatics students might make when interacting with this page and what the consequences are of making each error. For example, failure to opt-out might mean the user is still being tracked, but thinks they are safe so they might do activities that they do not want to be tracked.

## Design a think-aloud study

Next you will design a think-aloud study based on the errors you identified in the activity above. The purpose of the study is to learn if the potential problems you have identified really are issues for other people. Your Tutor will give you a think-aloud study starter handout which contains the standard language for a think-aloud study with several blank spaces where you can fill in what you will say for your planned study. The two largest things you will need to plan are:

- How you will introduce your project to the participant
- What tasks you will ask the participant to do
- Plan for note taking

### Introducing your project

Near the top of the think-aloud sheet there is a short space for you to introduce your project. You will need to tell the participant what this study is about. Anything you say in this portion will likely bias their later answers. So, it is important that you use language that clearly explains the purpose so that participants are likely to give you the information you need. In general, keep the explanation short and avoid any words that might bias their opinions.

Bad example: *“Today we will be studying the fact that Android devices take a long time to log in. I will be asking you to log into a provided Android phone several times in front of a camera to see if you can log in quickly.”*

Good example: *“This study is about the usability of Android phone login screens. Today I will be asking you to log into a provided Android phone several times in front of a camera. We are using the camera so that we can identify small issues that make the login screen harder to use.”*

### Tasks

The think-aloud starter handout should have a nearly blank page for tasks. These are the tasks you will ask your participant to attempt to accomplish using your assigned website. We have written the first part of the first task for you. You will need to complete the first task and then add another task based on the errors you predicted earlier. Keep in mind that you only have about 20 minutes with the participants, so they are unlikely to complete more than two tasks.

### Note taking planning

Observing participants while also taking notes can be quite challenging, but it can be easier if you plan your note taking up-front. You already know how you expect the participant to behave and you know what tasks they are going to engage in. So, you can create a note template for yourself that reminds you to watch for basic activities and sub-tasks. For example, I might write the following on a prepared note sheet so I can easily X or circle activities errors that the user made rather than having to write them out.

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| <ul style="list-style-type: none"><li>• Finding the website<ul style="list-style-type: none"><li>• Find on first try?</li><li>• Confused about which website to select from Google.</li><li>• Went back after visiting website because thought it was the wrong one.</li></ul></li></ul> |
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