

Software Engineering Usability Tests

For our Software Engineering class we are going to conduct some very basic user studies. Our main goal is to figure out whether typical users are able to use our tool to perform a specific task. If we were conducting a full-blown user study we would need to follow a fairly rigorous process. For example, this tutorial goes through some of the steps that were planned for studying the usability of Drupal (a content management system)

<https://www.drupal.org/docs/develop/usability-testing/tutorial-how-to-conduct-usability-testing>

For purposes of our class, we don't have time to conduct such a study – and furthermore it is not the primary focus of this Software Engineering course. Nevertheless, it can be extremely helpful to conduct a small and informal study to see how your target users might interact with your tool. Please look through the tutorial above so that you gain an initial understanding of the steps of a usability study. Our process will include the following steps:

1. Identify 2-3 users. They should be people who understand what your tool is supposed to do.
 - a. For the two SAC teams – I can volunteer Jinghui Cheng, who is a post-doc working with Safety Assurance Cases and I will also ask Micayla Goodrum (a PhD student working in this space). We can setup a class-time and ask them to come to class – maybe on April 24th?
 - b. For the Maintenance teams – I think Jinghui and Micayla might also be good users for you.
 - c. For the other teams – I think you could ask your Computer Science friends – as long as you explain the concepts to them in advance. If you have trouble finding good users let me know. Jinfeng (our TA) could also be a user. I am grading all the projects so it won't interfere with any grading.
2. Identify a couple of specific tasks you would like them to perform. Explain the tasks clearly.
3. Ask them to perform the tasks and to think out loud so you understand what they are thinking, where they have specific problems. If they agree, you could record the session. You can let them know that their recording may be used in your final presentation – but will not be used for anything else.
4. As this is for purposes of a course, and not part of a research project, we do not need to get permission from the university Institutional Research Board to conduct the user study. If you are ever involved in this type of study for research purposes – the researchers will need to get approval for their study. Our study is informal and will serve only to help you understand any problems in your design.

5. As a result of your study, try to summarize any problems you observe in either the task flow, the affordances (i.e. whether icons or widgets provide sufficient information to the user), or general layout problems. Transform these problems into new user stories and/or new tasks assigned to open user stories. Note: You most likely won't have time to fix all the problems your study identifies (if you find any) – but we are interested in the process of the study.

Here are some useful video recordings you might wish to view:

What is a usability study? (2.3 mins)

<https://video.search.yahoo.com/yhs/search?fr=yhs-mozilla-002&hsimp=yhs-002&hspart=mozilla&p=youtube+usability+study#id=1&vid=29e2b72465d452cbda526b3a456a4f88&action=click>

How to conduct a usability test (approx 7 minutes)

<https://video.search.yahoo.com/yhs/search?fr=yhs-mozilla-002&hsimp=yhs-002&hspart=mozilla&p=youtube+usability+study#id=9&vid=f1de3f9ff7cd502d8d9c2a1ffca4f03c&action=view>

A recording showing an actual user study (24 minutes)

<https://video.search.yahoo.com/yhs/search?fr=yhs-mozilla-002&hsimp=yhs-002&hspart=mozilla&p=youtube+usability+study#id=14&vid=2c2c8c8edca18c932678517d415f9f0f&action=view>