University of Glasgow | School of Computing Science

Assessed Coursework

Course Name	**Interactive Systems (H)**			
Coursework Number	**1 (of 5) – AE1-1 Usability Testing**			
Deadline	**Time:**	**09.30**	**Date:**	**15 October 2021**
% Contribution to final course mark	**5**		**This should take at most this many hours:**	**4**
Solo or Group ✓	**Solo**		**Group**	✓
Submission Instructions	**Via Moodle – see last page**			
Who Will Mark This? ✓	**Lecturer ✓**	**Tutor**	**Other**	
Feedback Type? ✓	**Written**	**Oral ✓**	**Both**	
Individual or Generic? ✓	**Generic ✓**	**Individual**	**Both**	
Other Feedback Notes				

Code of Assessment Rules for Coursework Submission

Deadlines for the submission of coursework which is to be formally assessed will be published in course documentation, and work which is submitted later than the deadline will be subject to penalty as set out below. The primary grade and secondary band awarded for coursework which is submitted after the published deadline will be calculated as follows:

(i) in respect of work submitted not more than five working days after the deadline
   a. the work will be assessed in the usual way;
   b. the primary grade and secondary band so determined will then be reduced by two secondary bands for each working day (or part of a working day) the work was submitted late.

(ii) work submitted more than five working days after the deadline will be awarded Grade H.

Penalties for late submission of coursework will not be imposed if good cause is established for the late submission. You should submit documents supporting good cause via MyCampus.

Penalty for non-adherence to Submission Instructions is 2 bands

Marking Criteria
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Interactive Systems (H)

AE1-1: Usability Testing (5%)

Assessed Exercise 1

AE1 for IS(H) will involve working round the Human-Centred Design Cycle, as presented in Lecture 1. In your lab groups, you will select an existing product to assess, conduct a usability study, design an improved system, and plan a user study evaluation of your creation, before finally performing and writing up the evaluation. You will receive separate instruction sheets for each stage from AE1-1 to AE1-4.

AE1 will be composed of 4 parts worth 5% each, meaning overall it is worth 20% of the course grade. It is a practical exercise that you can work on in teams in your lab sessions (in both live and online weeks) and each of the parts of the assessment AE1-1 to AE1-4 will be marked out of 4.

Usability Testing

This week's part, **AE1-1**, will concentrate on conducting a usability evaluation of an existing product. Do this in your groups. You should be able to do it either online or in the lab

Select Product
First select a single product for the whole team to study. Choose this carefully, as in coming weeks you will be working on designing an improved version. It could be a web site, or native desktop or mobile app. Maybe there is a system that one or more group members already use and find frustrating. If you did the WAD2 course, you could even use any of your group projects for this purpose!
Although you are choosing a system together as a group, try **not** to discuss specific problems too much at this stage, as that will pollute the data gathered in the evaluation below.

Tips:

- Although it is likely possible to find usability problems with any system, be wary of selecting something too simple (such as a single-screen mobile app) as it might not afford enough functionality to notice many problems.
- Do not select a game as your system to evaluate, as games are often created with different design goals, and can have a more complicated relationship with the concepts of 'usability' or making it 'challenging' to complete actions.

Heuristic Evaluation
There are many ways to evaluate a product, as we will explore during the course. For this first task, we will conduct a *heuristic evaluation*. You might have covered this in previous introductory CS or HCI courses such as CS1F.

Jakob Nielsen created a very influential and widely-used list of Usability Heuristics, which are 10 general principles that can be used for assessing interaction systems.
See https://www.nngroup.com/articles/ten-usability-heuristics/

Working individually, look through the list of heuristics and note down anywhere you believe your chosen product has problems. Use the system to perform typical tasks, considering at each step in your interaction how the interface or interaction flow meets or fails to meet recommended heuristic criteria. You may find many or only a few problems. You don't have to try to find a problem to match every heuristic. Also note any issues that you consider to be problems in the interface that are not covered in Nielsen's heuristics.

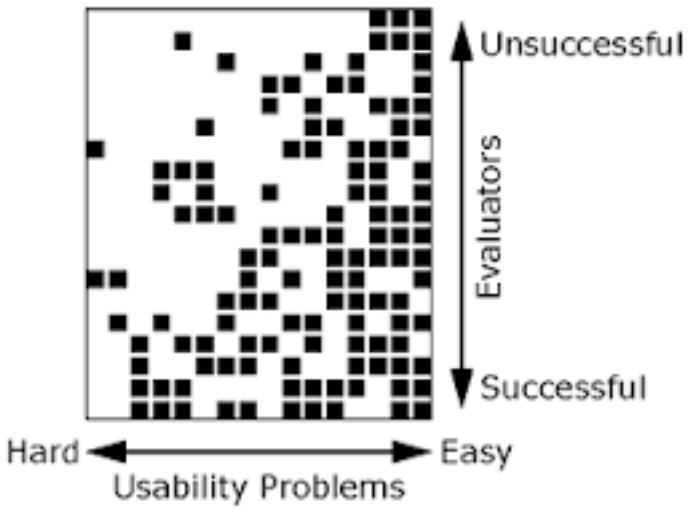
Everybody in the team should produce a list of problems without discussing between yourselves.

If you are evaluating a product which you have to log into (such as a web app), or where the experience is going to be dependent on the amount of data present (such as software for managing your photo collection), try to find a way of conducting the evaluation where everybody is assessing the system under broadly the same conditions. For example, you could all use a web app logged into the same account (maybe a new dummy account created for this purpose), or an app initialised with the same data.

Working as a group, bring together everybody's list of issues, and create a master list of everything the team collectively observed. Some issues will likely have been identified by more than one person. Where two people have made similar but different observations, make a judgment as to whether they are similar enough to merge them or if it is worth keeping them separate.

A single person is unlikely to uncover every potential usability problem with a product. However, in combining lists from several testers, a more complete set of the issues can be identified (with diminishing returns as you keep adding people - Nielsen famously suggests five people might be an optimal number).

Produce a diagram like the example below. It depicts the number of problems found, and how widely they were identified among your team. Each evaluator is a row and each problem a column. A black cell indicates the identification of a particular problem by a particular user. Note also the ordering of axes – the labels used are maybe confusing, e.g. 'Easy' and 'Hard', here just mean how many people found the problem. (Your diagram will be less tall than the example, but it might be wider if you have identified lots of problems)



You can use any software you like for this. You might like to explore how to do it in Jupyter Notebook with e.g. matplotlib or seaborn, which we will be looking at in future exercises.

For more details on this process and the diagram above, see
https://www.nngroup.com/articles/how-to-conduct-a-heuristic-evaluation/

Report
Working as a group, produce a PDF document with the following sections

- Product description: Describe the product being evaluated. You could include a couple of screenshots to help describe it. Note here if you performed any configuration to ensure that everyone tested the system under the same conditions.

- Identified issues**:** Provide your master list of the group's identified issues. For each, note which of Nielsen's principles it violates (or state that it is something you identified as a problem, but which you do not think is covered by Nielsen's 10 heuristics).

- Diagram**:** Include your diagram that illustrates the pattern of different team members uncovering each issue. Number the x axis, or provide some way of mapping the diagram's columns to the list of issues.

How to submit
One member of the team should submit a pdf document **via the "Usability Testing" submission icon in Week 3 of the Moodle page** for the course. Decide or nominate one person to upload the pdf to moodle, but **make sure that somebody submits!** If you have used any external sources, be sure to acknowledge them in your submission. For reference, the School's plagiarism policy is contained in Appendix A of the Undergraduate Class Guide (available at https://moodle.gla.ac.uk/course/view.php?id=21505).

This work is worth 5% of the overall assessment of the course. You can work on it prior to and during your lab session on 8th October and submit it any time after that. The absolute deadline for submission is **Friday 15 October at 09.30**.