COMPSCI 345 / SOFTENG 350

Assignment 3: Hi-fi prototype and usage testing for sharing files from a cloud data service, for university student groupwork

Worth 10% of your final grade
This assignment will be completed in groups of 3 or 4 students
Each group member should plan to spend 12 hours on this assignment
Upload one submission (per group) to Canvas
Due by 8am on Monday 8 June

Aim

The aims of this assignment are to develop and evaluate a hi-fi prototype design as a mockup Web interface. The assignment allows you to practice skills in high fidelity design, Web technology, HTML, CSS, and JavaScript. It will require application of previously learned skills in domain familiarisation and ideation. Lastly, you will practice techniques of usage testing.

Background

The focus of the assignment is to redesign the main page and the "share file" function for a cloud data service such as Google Drive or Dropbox, which many are familiar with. This redesign will make the service better suited for university student groupwork "user needs". If you haven't used those tools, familiarise yourself with the google drive associated with your university UPI account. For example, upload some of your groupwork files and "share" them with group members.

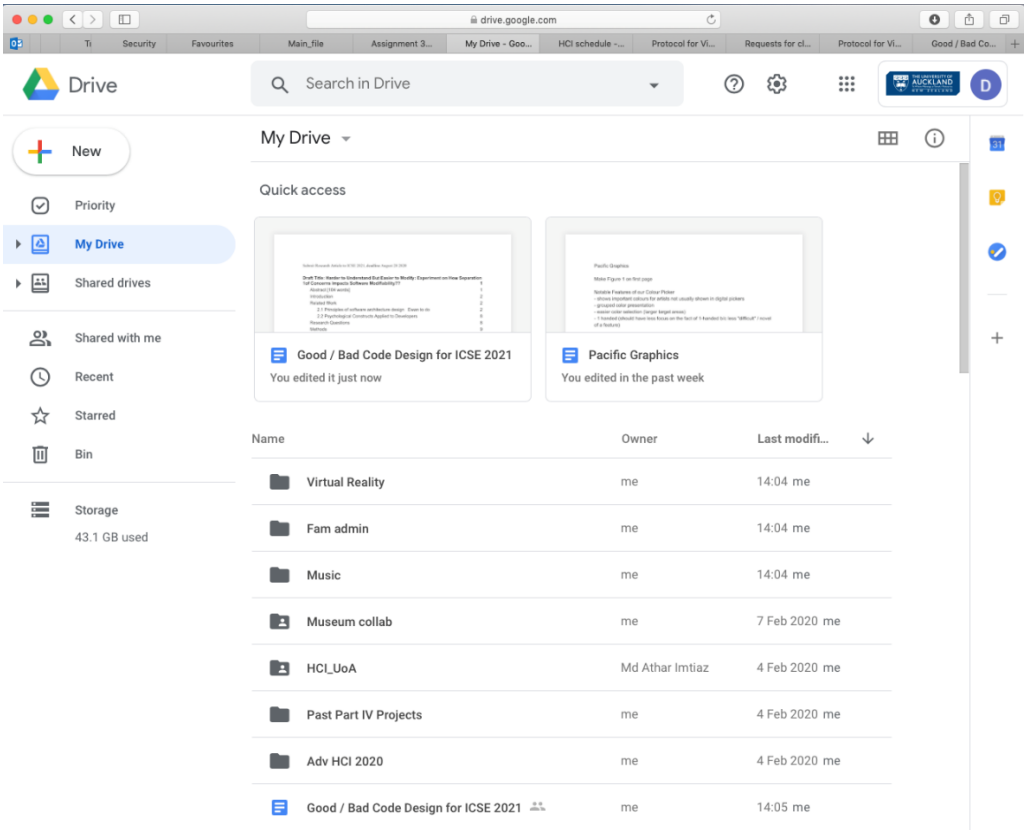

Figure 1. "Home page" of the Google Drive cloud data service

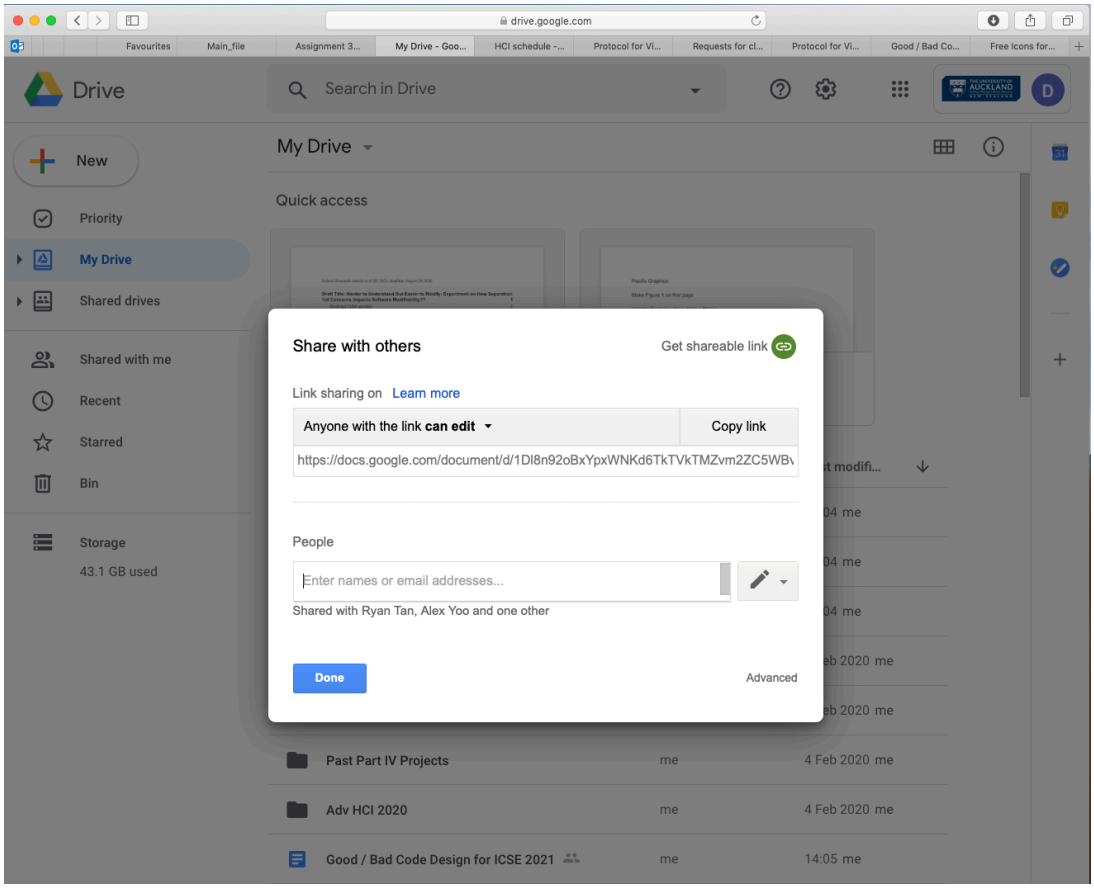

Figure 2. Example “share” pop-up 1

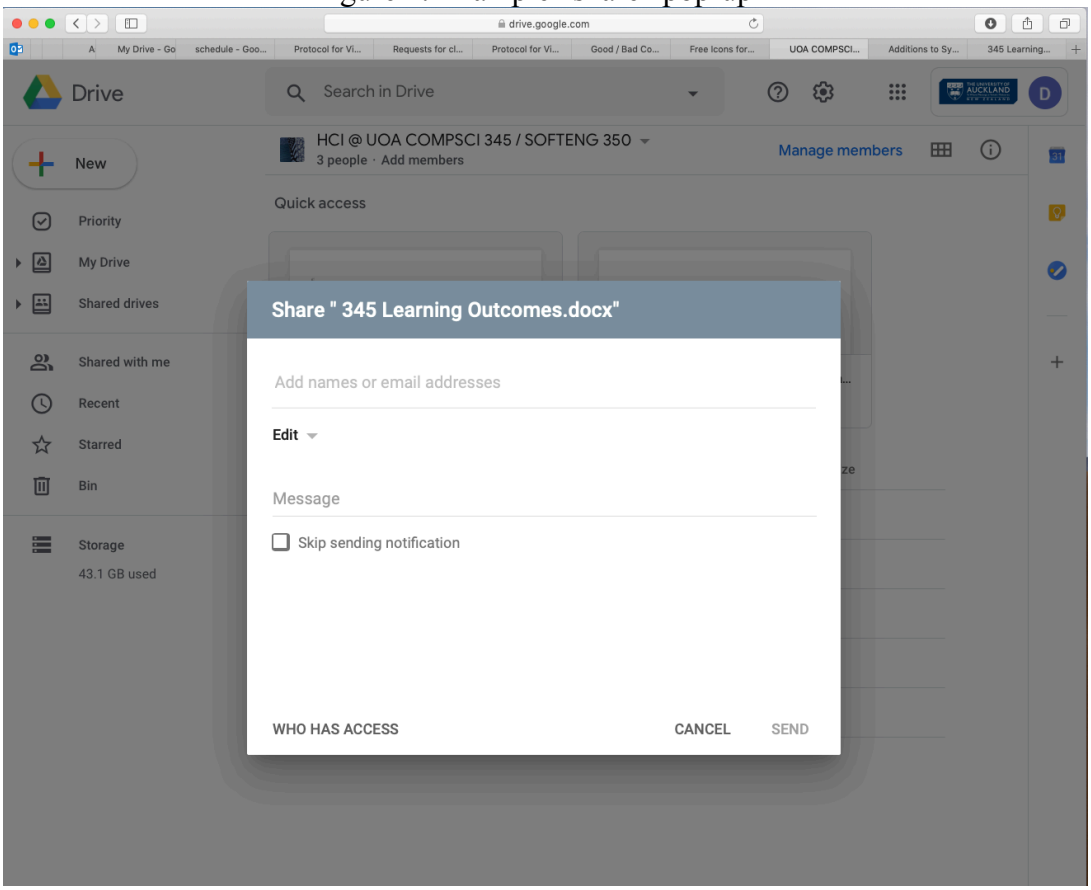

Figure 3. Example “share” pop-up 2. In this specific scenario, a user is sharing a single file “345 Learning Outcomes.docx” and is at the point of typing in the name of the recipient.

Imagine that the university purchases cloud data services from a start-up that designed their services specifically for university students. Imagine that a group of human-computer interaction undergraduate students are working together on a project and need to share files over a period of a few weeks. They are collaborating on a major project with different kinds of files, some that are related (e.g., CSS, HTML) and some that aren't. Imagine the deadline for the HCI project is in one week. Your team will add more detail around undergraduate student group coursework "user needs" to this imagined scenario. For example, group members might want to share a set of files and customise the share messages for files that are related (e.g., CSS, HTML) and for others that aren't related.

Your team may imagine other "user needs" of group members in a scenario, based on your team's familiarity of the domain. These user needs should be related to your proposed customised features. In the written scenario, groups of 3 should describe three "user needs" and groups of 4 should describe four "user needs".

Prototype the "home screen" and share function. As described above, your team should imagine a specific scenario around sharing a file (to be described in Part 1), and this scenario should be visually "hard coded" into your prototype (e.g., the scenario described in the caption for Figure 3).

For this assignment, only a desktop design is in scope. Design for other devices is out of scope.

Part 1. High Fidelity Prototype
Your task is to prototype a customised cloud data service for undergraduate student group coursework. The "customised cloud data service functionality to support undergraduate group coursework" could be integrated into an existing platform like Canvas or Google Drive, or could be a standalone system. The prototype has to be a mockup and therefore not functional.

Part 1.1 is to design a "home page" for a cloud data service that is customised for student group coursework, such as a major project described on page 3. You may customise any aspect of the screen, and these customisations should relate to one or more "user needs" described in the scenario. Your screen should approximately match the visual complexity of Figure 1.

Part 1.2 is to redesign the sharing feature that allows you to share a file with your student collaborators in a group coursework project. Interface feedback such as a success message should be included. The share function should be customised for student group coursework, and these customisations should relate to one or more "user needs" described in the scenario.
The share function should minimally match the visual complexity of Figures 2 or 3, but with potentially added complexity for customisation and an added success message. Groups of 3 should complete this amount of sharing functionality. Groups of 4 should additionally prototype an extra pop up box (or equivalent) for advanced sharing functionality, e.g., sharing with editing/viewing/commenting privileges and file link sharing such as recipients who are inside or outside the organisation.

Describe the scenario with "user needs", prototype and design choices in the report.

Part 1.3 Create a screencast / screen-recording video showing the expected use of your prototype within the context of your chosen scenario.

Part 1. Materials
Tools. You can use the implementation tools of your choice. We recommend a browser and an online code platform such as https://codesandbox.io.

Code. A sample base of basic "starter code", with low visual complexity, is provided to offer skeleton code for a prototype. It provides: a) a "home page" with elements on the left, and b) a pop-up box. The code base was adapted from a W3.CSS template. You may change the code base as much as you like. You are free to not use it at all. You may add source code from other sources, and this should be clearly indicated in the comments and referenced in your report. You may only use HTML, CSS, and JavaScript.

Icons and visual elements. You may use any visual elements that are licensed for re-use. We recommend finding icons in: https://thenounproject.com. All visual elements taken from online sources should be clearly referenced in the report.

Part 2. Usage Testing

Evaluate the user experience of the "home" screen of the system and the "share" task, with representative participants. Guidelines for ethical interaction with participants (as described in lecture) should be followed. Participants should be other members of the class, other university students, or representative family or friends. Note that:

> It will usually not be appropriate for the researcher to recruit members of their own family or friends. As an exception to this general rule, small-scale and minimal-risk research projects on topics that are not sensitive or controversial and conducted by students in the course of studying research methodology may involve the use of family and friends as participants, provided participants are aged 16 years or above. p.35 University of Auckland Human Participants Ethics Committee (UAHPEC) Applicants' Reference Manual June 2019

Part 2.1 Develop a test protocol to evaluate the user experience of the "home page" and of the "share function". Describe your protocol in the report. Include the protocol in an Appendix. Groups of 3 should test with two participants and groups of 4 should test with three participants.

Part 2.2 Write up sections for participants, results and discussion of the user testing. Include raw observations in an Appendix.

Submission

A zip file containing:

1. A folder "prototype" with your prototype files. The prototype should be locally executable in a browser and should not need network connection, i.e. the marker should be able to click the index.html and see the prototype. All documents, HTML, CSS, JavaScript, should be well commented so that a marker can understand the operations.
2. A report including the following sections:
    a. Prototype Description: A section describing the scenario with clearly marked "user needs", system functionality, as well as the reasoning why it is appropriate for student course groupwork. Describe the rationale behind your visual design choices. We recommend including annotated screenshots for more clarity and professionalism. Max 1500 words for groups of 3 and 2000 words for groups of 4.
    b. A link to the video screencast/screen-recording of the user interface in operation. It should be a screencast of the actual HTML interface, not a series of edited images. There is two minute limit on the video. It should be succinct and non-redundant.
    c. Protocol Description. A section describing the rationale for usage testing prompts. Max 600 words for all groups.

d. Usage Testing Results. A section that summarises key characteristics of the participants, displays the results, discusses the results and comments on implications. Max 900 words for groups of 3 and 1200 words for groups of 4.

Assignment 2 Rubric

Criteria

- High Fidelity Prototype: Adequate amount of implementation in Web technology. Fully documented implementation and sources. Bug free. Professional visual design following visual design principles with good user experience.
- Prototype Description: Relevance of "user needs" to cloud data service use by university students doing course groupwork. Relevance of the design decisions related to the share feature of cloud services.
- Video: Clarity and professionalism of video.
- Protocol Description. Quality of protocol. Appropriate choice of tasks and metrics and application of ethical and usage testing concepts taught in the course.
- Usage Testing Results. Relevance of participants to target users. Insightful presentation of the results and insightful commentary on implications that reflect knowledge learned in the course.
- Overall quality: Clarity of writing, descriptions and professionalism of the presentation.

Assessment of criteria

Criteria are assessed as excellent, good, satisfactory, unsatisfactory or fail. A letter grade is assigned based on holistic assessment of the categories.

Q&A

Q: I understand that the assignment is testing prototyping and not the functionality, but would some small functionalities be necessary? Specifically in cases like choosing a different item combo box or applying filters to a list, would we be marked differently if we choose to implement these small things as it helps to get a better overall feel of the prototype?

A: This kind of functionality can be hard coded. The purpose for the assignment is design rather than functionality.

The prototype should have the functionality to move through the screens. There could be a number of small actions between two consecutive screens like setting the values of a few controls, so it could be best and easiest to have a combo box, for instance, actually have a couple values in its list so you can change it between screen shots. That said, the result from setting a filter could be 'hard coded' (when you change the filter it always gives a prepared result) rather than actually fully implementing the filter. Overall the answer to this question is No. We're more interested in the code so we can detect plagiarism and to get a closer look at the design (as compared to squinting at a screen shot) rather than to check anything about functionality. For best marks, put effort into your design decisions.

Q: What libraries, etc., can we use?

A: You have to use standard web browser technologies (HTML, CSS, Javascript). In addition, it's 'recommended' that you use no libraries except JQuery and, if you wish, the w3.css framework (see https://www.w3schools.com/w3css/w3css_downloads.asp) and nothing that generates code for you.

If you do use any other libraries, it must be declared AND you have to clearly indicate what you did as compared to what the library did. As such, to get full credit, all coding that affects the visual style

should be your own. E.g. downloading a template that sets the colour scheme, the font scheme or has a creative layout isn't your own work. Intrinsically, you won’t require more elaborate toolkits, given the super-limited functional requirements of the system. The assignment focuses on making good design choices rather than implementing maximum functionality.