



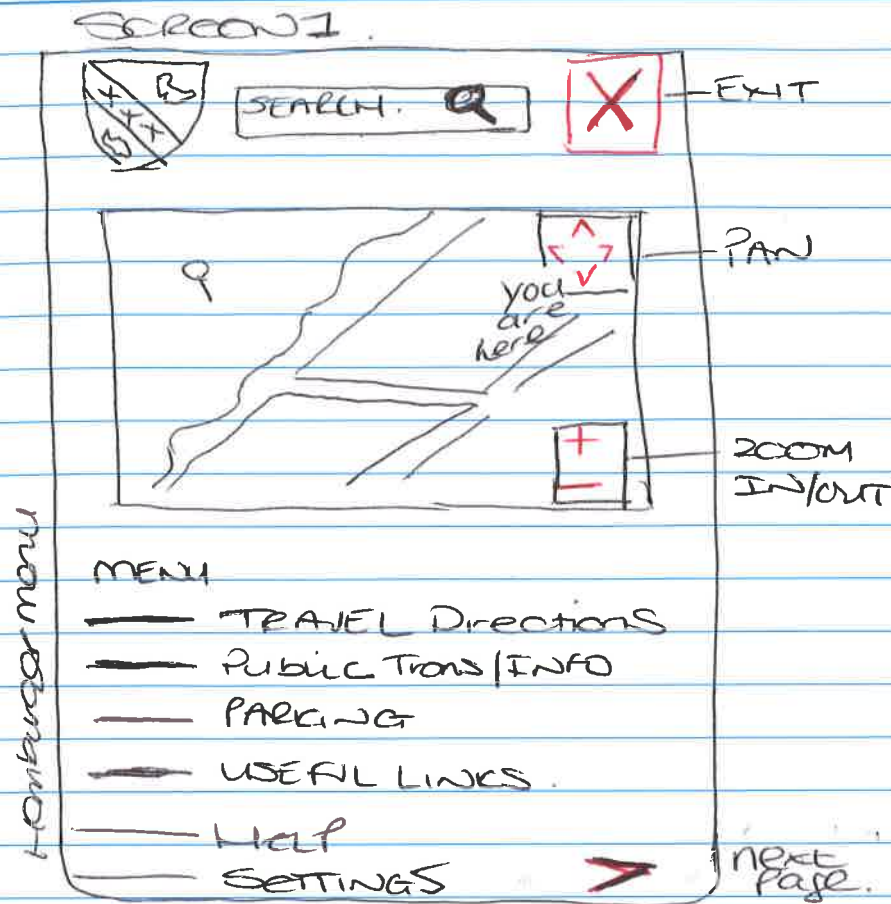
12 Pages

1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fold over and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either ignore illegible script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
8. **Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.**

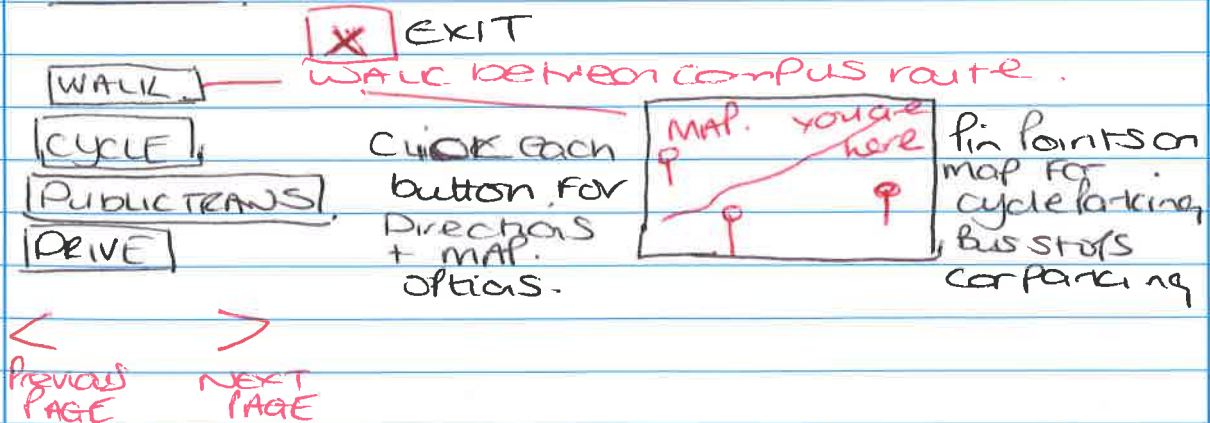
FORENAME(S): LISA

List the numbers of the questions you have attempted	Office Use
1a	10
1b	6
1c	2 18
2a	14
2b	3 17
3a	9
3b	11 20
Office Use	55/75

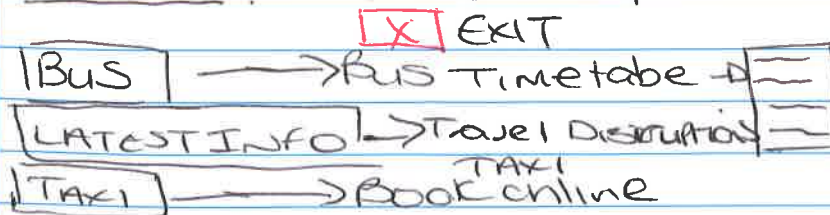
1a)

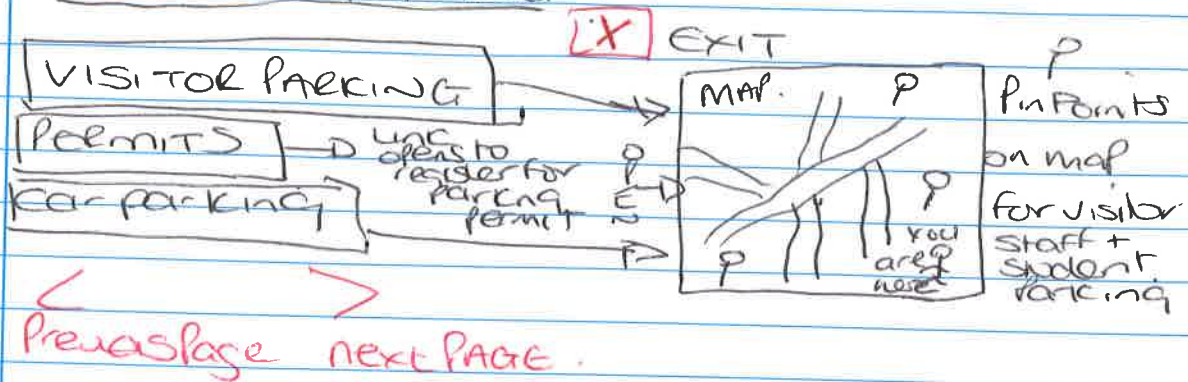
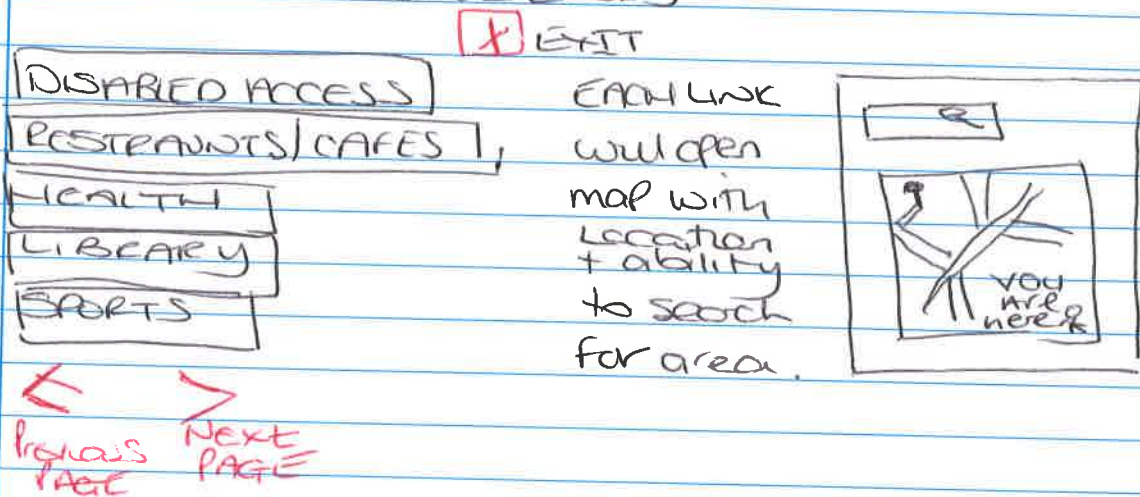
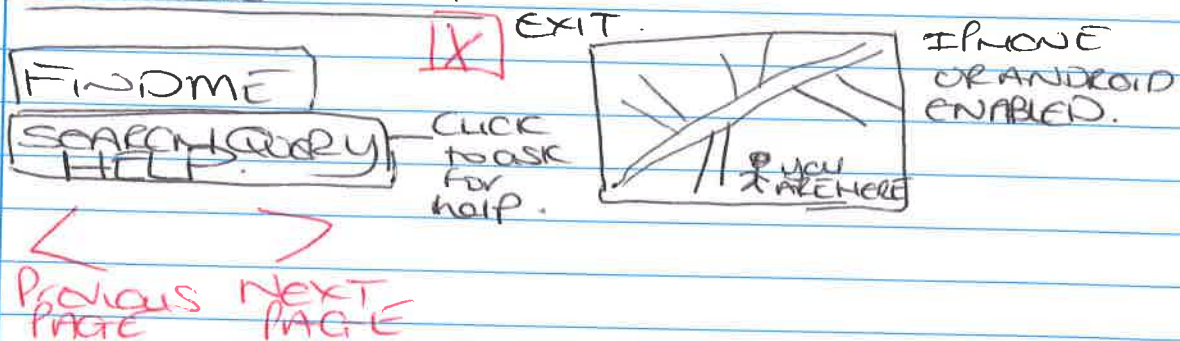
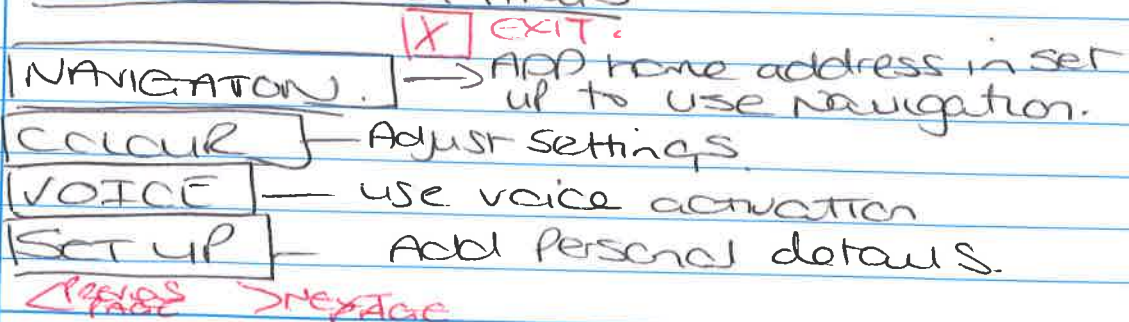


SCREEN 2 - Menu - Travel Directions



SCREEN 3 - Public Transport information



1a) SCREEN 4 - PARKINGSCREEN 5 - USEFUL LINKSSCREEN 6 - HELPSCREEN 7 - SETTINGS

1a.) Almost everyone has a smart phone and mobile applications are a current trend in today's society. A mobile application could be used aimed at university students, staff and also visitors. It would be useful to navigate around campus.

When designing interfaces it is important to consider human factors. These include visual perception, memory, reasoning, affordance and metaphor.

The metaphor examples in the design would be essential with the limited screen size, the use of symbols to represent long text would be the best way to ~~explore~~ utilize the small space.

By following the 10 general heuristics theory (Neilsen, 1994) would help to design an app for mobile use to ensure it takes all human factors into account.

By using a hamburger menu ~~total~~ metaphor will utilize the small space and the user will afford what they need to do to open each link. By using X to exit and < > forward and back arrows these will be a good use of affordance and will not take the user long to move around each page. *Good design & explanation.*

1b.) When designing and developing the prototype the 10 general heuristics were followed. There needs to

1b) be flexibility in the design as the campus is still being built so will need to be adapted if locations change as the build progresses.

Use simple and natural dialogue / Speak the users language

The mobile app developed uses plain English so that the user can understand its features. Taking into account foreign students whose English may not be very good. The user may have disabilities such as dyslexia, so there should be a way to adjust the settings to accommodate their needs.

Provide clearly marked exits

The application will incorporate clearly marked exits, be able to easily go back and forward to other pages, using clear commonly known symbols shown in the design picture.

Good error messages / Present errors

If an error occurs the mobile app will provide a clear message to tell the user what has gone wrong in plain language and not in code so that the user can work out what has gone wrong.

To minimise errors the app will use a confirmation option before the user commits to certain actions

1b) minimize memory load.

To minimize short term memory load the app will have options visible such as a help feature so that the user can easily ask for help if they get stuck and can't remember what to do.

spec the users language / provide shortcuts.

A zoom in and pan in for the small screen will be added and also a route guidance feature. The app will take into account an experienced but also a novice user. The map will be tailored adding in frequently visited locations, a home address shortcut so that the route guidance can be used quickly and efficiently. It has been designed to accommodate small or plus size phones, android or iPhone.

Layout has been balanced and not cluttered using too menus.

Timeline

- 1) User requirements = Human Factors } Guidelines
Disabilities } W3C + PIX.
- 2) evaluate + test requirements - neilson
- 3) Coding user actions + surveys.
- 4) Test
- 5) Implementation.

Good point about flexibility & some suitable activities given.

1
1C) The benefits of following the usability techniques that have been carried out can not be rushed. By getting the design right in the early stages will help the time needed to code as the coder will be given every thing they need to carry out the actual coding phase.

2

Good points!

2

2a There are various methods of usability evaluation. For evaluating this mobile map application, for this application it is recommended during the evaluation stages to establish user requirements. It would be useful to use an evaluation strategy such as questionnaires and surveys to find out what the user would actually expect to see when it is implemented.

This is the only realistic way to incorporate views of a large number and variety of users.

From a marketing point of view you are more likely to get users to use something that they have had taken into account the user and their requirements.

Gathering these opinions in the surveys is best done in the user requirement and design stages of the project lifecycle. This will provide a good strong platform for the coder when you give them a good strong design.

Alternative methods of evaluation are carrying out experiments and benchmarking, this would not be appropriate in this evaluation. It would not be useful in the design & establishing the user requirements.

Observing users in a usability lab is another form of evaluation but

2a) to test a mock version would be better in a live setting.

14 Eyetracking, might be useful in a mock prototype as this may help with the design of the layout and if its laid out well for the users.

Good, practical strategy

2b) By taking the time to evaluate the application by the students will provide feedback from the actual users, it will give lots of data in a short time and give opinions of a large number of diverse users. By having a large number of users involved will give good validity and reliability and will result in a functional easy to use application. If the surveys are kept short and quick and painless as Nelson suggests the students will not miss too much time and can get on with other subjects such as maths.

3
3
Good points

3a) Use of guidelines such as Dix (2003) is a good way of analysing the design early on in the ~~process~~ project lifecycle. It can help to identify problems with applying human factors to dialogue design and reduce poor interface design.

For the mobile app design that I have carried out I focussed on Dix's guidelines but found that some were appropriate but some were not.

Learnability - by looking at this helps to take into the design of the interface and how easy it is for the user to learn the screen.

Interface. It helps to look and think about users who may not all be familiar with using maps on a mobile device as not all will be. It helps to consider using metaphor so that the user can draw upon previous knowledge of using other domains and can afford to the application.

~~With the flexibility guideline I didn't find this useful in the research~~

Flexibility - this was useful in the research to consider in the design of using free dialogue and adding in searches rather than scrolling through a long list of locations, this would be time consuming if the student was in a rush to get to a lecture.

3a) Robustness - This guideline looks at how much support is provided to help the user. I considered this in my research as it helped to think about using good error messages and to avoid coded messages that the user would not understand. Within this guideline I mostly focussed on recoverability and responsiveness. Observability and recoverability wasn't useful for the design in my research.

Following guidelines is useful in usability design, it helps to design a user friendly app that can be used by all variety of users and meets legislative requirements such as the Disability Discrimination Act 1995.

3b) Students using the app may have challenging disabilities. With the small screen, glare from the sun, used in busy and noisy areas could make it challenging for a student with disabilities. Following guidelines on IT accessibility will ensure that you meet legislation such as the Disability Discrimination Act 1995 which places a duty on service providers to make services accessible for all disabled users. This is a mobile app and disabilities would need to be accounted for in the design. The W3C mobile Accessibility guidelines are a set of guidelines

3b) to follow when designing ^{interactive} mobile applications

Accessibility for users with visual disabilities - the guidelines suggest the appropriate colours to use and what is difficult for colour blind users.

They help to look at alternative formats for blind users such as a screen reader. To use Alt attributes for images. To use large fonts and not to use absolute font sizes in the design and to design making sure that there is a default font size of 24.

The guidelines help with designing the app for people with hearing difficulties, particularly if the app was being used in a noisy area such as a busy road.

The guidelines help with designing the mobile app for users who may have motor disabilities and may have problems using the touch screen, so that it may be required to build in extra software to manage this.

Guidelines help to consider users that may be dyslexic and to consider using good headers and allow more flexibility in the search engines to pick up sentences or words that may be misspelled.

By following the W3C set of guidelines will help to consider all disabilities in the design.

Good, thoughtful answer