CS3040 Mobile Design & Development: Coursework Specification

Deadline: March 23rd, 2020 @ Noon

Mobile Travel Journal

1. Scenario

People often want to generate a record of fun places visited and holidays. You have been hired to create a working prototype of a mobile travel journal app – that is, a mobile application to help a user to record key features of their holidays/travel in a fun and engaging way. The prototype must allow you to demonstrate how the mobile travel journal will work. The travel journal must be delivered in a way that is engaging to users, that is functional and usable (including when on the move), and that is accessible by a range of people with varying demographics and capabilities. The travel journal is to be provided for use on Android devices, and you may assume it will be used on touchscreen-based mobile devices.

2. System Requirements

In designing your prototype, think about the kind of functionality and how it is presented/utilised such that it is helpful and fun for travellers. In particular, think carefully about how information would best be organised, browsed, and used in a practical sense on mobile devices. Think carefully about the contexts in which people would be using the travel journal and how that might affect how the system presents information and allows users to interact with that information.

The following is a minimum set of requirements for the prototype – you are free to (and encouraged to) include other aspects as you think appropriate and you should think carefully about the information detail for each functional area.

1. The traveller should be able to create/edit/update/delete "**holidays**". A holiday should include at least a name, start and end dates, traveller's notes, and list of travel companions. The traveller must enter the name and dates to save a holiday but it is up to the traveller if (s)he adds notes and/or travel companions. You can include other fields as you wish in your design.

2. The traveller should be able to add "**visited places**" to a holiday. The traveller should be able to edit/delete "**visited places**". A visited place should include at least a name, date, location (recorded manually and/or automatically based on current location), traveller's notes, and photo. The traveller must enter the name and date to save a visited place to a holiday but it is up to the traveller if (s)he enters notes and photos. You can include other fields as you wish in your design.

3. A traveller should be able to **view visited places on a map**. Clicking on markers on the map should allow the user to view more information about the visited place. The traveller should have the choice as to whether to view, on the map, all visited places, those associated with a given holiday, those within a given time period, or those visited with specific companions.

4. The traveller should be able to take a **photo** and associate it with a holiday (generally) or visited place (specifically). The traveller should be able to tag each photo and associate each photo with a geographic location (manually or automatically).

5. The traveller should be able to view a "**travel gallery**" containing photos from all of his/her travels, which (s)he should be able to sort by date, tag, holiday, visited place, or geographic location. The traveller should be able to search and cluster photos according to date, tag, holiday, visited place, or geographic location.

6. The traveller should be able to **view the location of photos on a map,** clicking on the map marker to view the photo and associated information.

7. The traveller should be able to **share** holidays/visited places/specific photos with friends using email, SMS, or other social media.

8. Based on his/her current or entered position, a traveller should be able to **identify nearby places of interest to visit** according to category of place (e.g., places to eat, tourist attractions, etc.).

9. The traveller should be able to **interact in a fun way with the app using at least one non-standard gesture**.

10. The app should be designed to consider **accessibility** by incorporating **screen reader** facilities.

11. Data should be stored in **persistent storage** of some kind.

When designing your application, think carefully about the organisation/structure of the UI: the system needs to be designed to allow users to navigate easily between aspects of functionality/content and then to easily interact with each item of content. It needs to ensure that a user is always able to identify his/her current position/view within the system and to move freely and easily around the travel journal to select specific information/content.

You are free to decide what specific information to include in your prototype design – bearing in mind the scenario and requirements outlined above. You can source information, audio, and graphics to use in your interface design as you see fit but make sure that you take a note of the sources of each item and list the item with corresponding source in your report to attribute due credit to the source provider.

Be imaginative! Don't be constrained by more formal user interface designs or things you have seen before – what would engage *you* if you were using this system? What information might you really like to record whilst on a vacation? What other systems have you come across that might inspire your design? You will be given credit for attempting to use novel interaction techniques (e.g., not just relying on standard button/menu taps and swipes) and for trying to incorporate some of the novelty you read about for your synopsis and critical review reports.

Some documentation you might find useful includes information on:

- Google Maps for Android Developers: https://developers.google.com/maps/documentation/android-api/
- Google Maps Android Marker Clustering Utility: https://developers.google.com/maps/documentation/android-api/utility/marker-clustering
- Google Places for Android Developers: https://developers.google.com/places/android-api/?hl=en
- Contacts Provider: https://developer.android.com/training/contacts-provider/index.html
- Using the Camera: https://developer.android.com/guide/topics/media/camera.html & https://developer.android.com/training/camera/index.html
- Sharing Content: https://developer.android.com/training/sharing/index.html
- Screen Reader: https://github.com/google/talkback

Important Note: If you choose to use videos or tutorials about Android development from sites **other than** https://developer.android.com or https://developers.google.com, you should check with Dr Beaumont (by emailing him the link to the video(s)/tutorial(s)) that the material contained within the video/tutorial is up to date and correct. Failure to do this could mean that you are relying on out of date or incorrect guidance which could cause you considerable problems in the longer term. You can also find a lot of answers to technical questions from http://stackoverflow.com/.

There is quite a lot to implement and it is important to start now (e.g., start developing your programming skills as you work on your designs) and keep working on your app development consistently up to the submission date. This is not something you can throw together at the last minute!

3. Assessment

This module will be assessed entirely on the basis of coursework-related components so it is important that you fully understand the system requirements as well as what you will be required to deliver for assessment. The components of assessment are:

- 4 x synopsis & critical review reports: 5% each, totalling 20%
    - see material specific to this component (on Blackboard) for details of what is expected and how marks are awarded

- Dragons' Den pitch: 10%
- Coursework (Practical Assignment + Report): 60%
- Demo/Oral: 10%

Details of what is expected for the Dragons' Den pitch, coursework, and demo components are provided below. An assessment guide (i.e., a guide against which all components will be marked) is included on the Blackboard site for this module. Each of the assessed components has been carefully structured to (a) provide an opportunity for feedback about your work and understanding, and (b) ensure that you finish this module having achieved all the specified learning outcomes. All aspects of assessment are important and should be taken seriously – since this module is assessed solely on coursework-related elements, expectations for what you deliver are high and components will be marked accordingly. You are expected to engage fully with all aspects of assessment.

3.1 Dragons' Den Pitch (10% total)

During a dedicated session in **Week 8**, you will be required to "sell" your design to the module tutor(s) during a quick Dragons' Den style 'pitch'. You will need to produce **one PowerPoint slide** to accompany your pitch. You will be given **5 minutes** to deliver your pitch. This activity has been designed to give you practice at industry-style pitching which is very different to the academic presentations you are otherwise typically required to deliver. Your pitch should highlight your blue sky design concept, justifying the concept based on your intended market and highlighting the unique selling points of your design – what makes your design/concept the best? Your pitch should be engaging – imagine you are trying to secure angel investor funding to allow you to implement and market your app! ☺

You are required to submit your single PowerPoint slide via Blackboard by no later than noon on Wednesday 13th November 2019. Your slide will be pre-loaded for presentation during the session later in Week 8.

The pitches will take place in a dedicated teaching session during which all class members will present to the module teaching staff and the rest of the class. Pitches will be strictly timed, and presentations terminated if they run over – so practice your timing! ☺ The class will have an opportunity to vote on the best pitch/concept, with a prize being awarded for the winner.

> *Mark Allocation:* The Dragons' Den pitch will be marked out of 100, and will contribute 10% overall to your module grade. You will be assessed on your ability to concisely explain your design and to convince us of its novelty as well as to justify why you think it is the best design! It is good practice for your final demo! ☺

3.2 Practical Assignment/Coursework (60%)

In essence, you are required to deliver a well-designed, working prototype system that meets the system requirements outlined in Section 2 above. Accompanying your prototype, you are required to submit a written report. The report, of 2,000-2,500 words (not including annotations on screenshots, code or references), should be written individually by each student and should have the following structure:

Introduction	A very brief introduction to your project, indicating the structure the rest of the report will take.
Design Motivation	Discuss what motivated your design, and describe any background research or knowledge elicitation you did to help inform your design.
Application UI Design	Describe, in detail, your final (as built) application UI, highlighting how a user would navigate through the various aspects of the UI and what the user would see at each point in the UI. Discuss and rationalise your design choices based on mobile UI design theory, general UI design theory (see CS3410), and concepts discussed during the discussion groups.
Implementation	Describe the structure/architecture of your software and justify the use of that design, highlighting useful software design patterns. Provide some examples of code to illustrate how you achieved specific (particularly difficult) aspects. Discuss the software testing you undertook, and how you resolved any issues that arose as part of that testing process. Provide references to your code files (as submitted) to identify where the design ideas discussed in the previous sections

	of your report have been implemented.
Evaluation	Based on what you read for your critical synopsis/reviews, outline how you would propose to conduct a thorough and meaningful usability evaluation of your system. Describe how you would set up the evaluation, the participants you would recruit, the tasks you would ask the participants to complete, the data you would collect (and how you would collect it). Rationalise your proposed evaluation approach based on what you read.
Self-Evaluation & Reflection	Discuss what you feel are the strengths and weaknesses of your system. Discuss what you think could be done to improve your system. Discuss any design/implementation decisions which you now feel, with the benefit of hindsight, were not the best decisions – explaining why you think this and what you would have done differently. Discuss how well, in your opinion, your system meets the requirements.

The report is a critical component of your assessment so don't leave it until the last minute to write!

Mark Allocation: Coursework submissions will be marked out of 100, with marks weighted as follows:

Coursework Component	**Weight**
Deliverable	0.65
Report	0.35

Potential Penalties: standard lateness penalties will apply for late submissions (without prior agreed deadline extension from your year tutor). **Coursework MUST be submitted prior to your demo or it will be subject to an ADDITIONAL 10% penalty. Reports should observe the noted word limit (excluding cover page, contents page and references) – a penalty of 10% will be applied to reports that exceed the stated limit by >10% (i.e., >250 words). Please state your word count directly on your report.**

3.2 Demo/Oral (10%)

You will be required to give a demo of your app and to verbally answer questions about your design/development. Each demo session will be 30 minutes in length. You may demo your app using your own laptop/mobile device or the PC that will be provided. During your demo, you will be given 15 minutes to walk the teaching staff through your app and then the remainder of the time will be used for Q&A. We advise you to rehearse your demo so that it is smooth and covers all aspects of your app. You should be trying to illustrate all of your design with reference to the design theory underpinning your design decisions – much as you will have done in CS3410. You should prepare for your demo by thinking about how best to walk through your system to highlight its design strengths and illustrate the extent to which it covers the stipulated requirements. As well as demonstrating your app, you will be expected to discuss your design thinking and answer technical questions about your code (which you should be prepared to show). It is absolutely fine to bring in some notes to the demo to help keep you on track and help you remember what it is you want to say!

Your demo is intended to show off both your actual app and your design/development understanding/knowledge so think carefully about your narrative. Demos will be scheduled via WASS during weeks 23 & 24 following your coursework submission. **Your demo is compulsory: failure to attend a demo will result in a mark of zero being awarded for the module as a whole.** Remember, you may bring notes into your demo.

Mark Allocation: Your demo/oral will be marked out of 100: it will be assessed on the basis of the quality of the demo walkthrough and your ability to answer questions clearly and precisely.

4. Coursework Submission Instructions

Your coursework should be submitted on or before noon on March 23rd, 2020. Please refer to Blackboard for specific submission instructions.

Every coursework submission must be a **self-contained, complete** record of the final state of the work done.

You should submit:

- your individual report in PDF format (remember to include a note of your word count in your report); and
- all the software files created and used to generate your prototype – **it is your responsibility to make sure that the software is working and can be run for assessment.**

**** When you submit your PDF file via Blackboard, please ensure you include your full name and student number in the file name. ****