# ECM2434
# Software Engineering Group Project

## Project Specification
Exeter Orientation - A campus treasure hunt



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This document outlines the assessment structure and submission requirements for the ECM2434 Group Software Engineering Project module, before setting out the project specification.

This specification is released to students for comments on 31st January 2020. Adjsutments may be made to the specification to clarify any queries raised before Thursday 6th February 2020. After this date the specification will not be changed.

# 1 Assessment

## 1.1 Groups

This assessment is to be carried out by groups of students completing tasks to produce a shared product. Student groups were finalised on 24th January and have been published on the ELE page linked below. Groups will remain together throughout the module and share all submissions except the peer assessment. Times and location for group meetings are listed on the ELE page. All students are expected to attend group meetings which will run weekly beginning in week 5.

https://vle.exeter.ac.uk/course/view.php?id=7452#section-9

Marks will be awarded to individual students based on the performance of their team and the contribution of the individual student. Generally teams will be rewarded for working together and marks will rarely positively distinguish individual team members. However, if there is evidence of individuals not engaging or and not contributing towards team submissions individual marks will reflect this.

## 1.2 Submissions

There are three assessment points and submission deadlines for all groups:

- Sprint 1 (30%): Thursday February 13th 2020 (Week 5);
- Sprint 2 (30%): Thursday February 27th 2020 (Week 7);
- Sprint 3 (30%): Thursday March 12th 2020 (Week 9).

Submissions will be assessed on three main criteria:

- Process documents - to capture the process of group work and the Kanban agile methodology;
- Technical documents - to capture the technical contributions, particularly source code, of the team;
- Product documents - to capture the end product and client deliverables.

All submissions should clearly contain content related to all three sections listed above as well as a 6 minute showcase video that provides an overview of the submission and the contributions of each team member. Feedback for all submissions will address all three sections.

Marks for sprint 1 assessment will focus process success, and submissions are expected to demonstrate the team following an agile and kanban methodology and making good headway working together. You should document the early stages of planning, prioritising and populating the backlog as well as early technical contributions. Process documents will be the main mechanism of assessment at the stage although product documents may contain early designs that have progressed through the agile process to delivery.

Marks for sprint 2 assessment will focus half on process success and half on product success. Submissions are expected to demonstrate the kanban agile framework being put to good use and delivery of early iterations of the product will demonstrate product success.

Marks for sprint 3 assessment will focus on product success. The features and quality of the final product will be assessed involving both the documentation and a presentation where the final product will be presented and handed over to the client. Less emphasis will be made on the intermediary processes but technical details and professional delivery of the product will be rewarded.

Note the process documentation, technical documentation and the showcase video for each submission should make the contributions of each member to be clear.

### 1.2.1 Process documents

The Kanban board should be a chart divided into four columns: Backlog, Specification, Implementation and Validation. It clearly identifies group members and the tasks they are undertaking (and have undertaken). Regular snapshots of the agile board should be taken to show the progression of tickets. A time lapse of the kanban board changes would be a useful way to capture the revision history for the showcase video.

Records of meetings should be kept with clear note of attendance and tasks. It should be clear which members have worked on which tickets and tasks and how those tickets link to technical contributions in the source code and technologies that are being used.

### 1.2.2 Technical documents

The source code snapshot is a link or file containing all of the source code needed to build the product and instructions on how to deploy the artefact that clearly identifies which group members wrote which code. Professional and consistent coding conventions suitable for the chosen language should be followed. A testing strategy and the developer documentation should be included to demonstrate maturity, reliability and professionalism of the technical contributions.

### 1.2.3 Product documents

The product documents are designed and published for the client to receive. These should inlcude a public handle for the project with branding and documentation that is suitable for the users.

Product documentation will culminate in a public presentation of software on Friday 13th March.

### 1.2.4 Showcase video

The showcase video is a short film in MP4 format that gives an insight into what the team have been up to, how the product works and the contributions of the team members — no more than one minute per group member and no longer than 6 minutes in total. A separate showcase video should be produced for each submission and is separate from the public presentation on 13th March.

## 1.3 Submission process

Each sprint submission should be made both electronically using the Harrison E-submit system, and on paper by BART. The electronic submission consists of a single ".zip" file for the group, whose name is of the form "GroupXSprintY.zip'. The paper submission consists of BART sheets for all group members attached to a confirmation that the electronic submission has been successful.

## 1.4 Peer Assessment

At the the same time as the final sprint is submitted, each group member will be asked to anonymously rate the contribution of every other group member to the project (but not themselves). These ratings will be submitted separately by BART, and will be used to calculate a peer assessment mark. The peer assessment mark is worth 10% of the module mark.

# 2 Requirements

The requirement for this courserwork is to create an app to help welcome student when they arrive at Exeter University and help them find their way around campus.

## 2.1 Overview

When new students arrive at University for the first time everything is new and it can be challenging for students to find their way around. This project aims to create a treasure hunt game for new students to complete during welcome week to help orientate students on campus while being an ice breaker to meet their peers. Students should solve clues on the app to find their way to locations around campus in small groups and complete tasks when they arrive. The app should be fun and dynamic and encourage students to engage with relevant University staff, facilities and resources along the way.

## 2.2 Treasure hunt

A treasure hunt game can be as simple as a set of directions that appear on a button click where the results are manually checked by a game keeper at the end, or as complex as an augmented pirate adventure that has an automated leaderboard and timed checkpoints.

The key to a good treasure hunt is to make it fun and engaging so that locations are safe and students experience finding their way around relevant parts of the campus. In this specification there is also a requirement for the game to reflect well on the Univesity so you should integrate useful locations, people and resources in the app where possible.

## 2.3 User profiles

When designing your treasure hunt app there are three main types of users you need to consider:

1. Student users - These are the target audience for the main app. First year students new to the University that will access the app primarily through a browser on a mobile device.
2. Game keeper - This will be a member of staff responsible for the students engaging with the app and its resources. The game keeper should be able to configure and update the game and its resources. This user will expect access the app through a desktop or laptop browser.
3. Developers - Developers should be able to build, extend and redeploy the app for future and alternative uses. Developers will expect to be able to access the source code from an online repository and expect clear and concise documentation and deployment instructions.

For the purposes of this module the module leader will adopt all three user perspectives. As the project is being delivered to the client (module leader) all three roles will be considered when discussing the project delivery.

## 2.4 Features

### 2.4.1 Location

Locations can be verified in multiple ways. I've made some implementation suggestions below:

1. Teams may be required to take a picture of themselves at each location on the hunt. These pictures can be verified by the games master at the final location to complete the treasure hunt. This has advantages in that it encourages the students to create memories of the activity although it will be difficult for the game keeper to identify when students get lost as

the locations won't be verifies until the end of the hunt when it is too late to correct mistakes or shortcuts. On the plus side this may provide an opportunity for integration with social media.

2. Teams may scan a QR code using a phone camera to verify their presence and trigger the next clue. This may be a useful means of controlling the progress rate of participants in the hunt and making the game a little more dynamic.
3. GPS locations can be submitted from a phone to trace student progress. These services can be useful for two factor authentication and clearer tracability. This service may also be useful for gamification so teams can be distinguished and timechecks to make the game competitive.
4. IP addresses can be used as a proxy for location. Encouraging students to be mindful of the computer science technologies around them may be a novel angle to improve engagement. Access control rules could be used to enforce students to use the University wifi, and test their login credentials, in certain places before they can view the next clue.

### 2.5 Students resources

During freshers week thousands of students arrive on campus. These students need to register and navigate their way around all the resources from the University. This is an extremely busy time for the student support services and this app is a good opportunity to direct the students towards some key resources.

Below are some suggestions for resources that will enable them to find answers to questions and find help around campus.

1. Links and locations of facilities such as the library could be included in the app.
2. Lists of important people may be integrated into the app to familiarise students with key contacts on their programmes and around the University.
3. Search functions may be created to help finding and navigating key resources and University policies from the University web pages.
4. Frequently Asked Questions (FAQs) may be created to guide students when they experience common issues.
5. An notification feature may be implemented for students to request immidiate help if they feel unsafe or overwhlemed. If this feature is implemented there should be a clear caveat that this is not for when students are in immidiate danger and is in no way a replacement for emergency services.
6. This app is also a good opportunity to acknowledge the diversity of students that arrive at University. You may want to include clues that promotes inclusivity by encouraging the use of foreign languages, locating accessible routes on campus and engaging with text and non-text clues.

## 3 Summary

In summary this project is about creating a game to help students orientate themselves on campus when they arrive at the University of Exeter. The assessment is a balance of process, evidence of effective team work using the kanban agile methodology, and product, producing a professional and fun application.

Each team must be creative and distinguish their app in a unique way.

If you have any questions at any point throughout the project please do not hesitate to get in touch, m.collison@exeter.ac.uk.