IT6035

Mobile Development

Project

Course Level: 6

Course Credits: 15

Weighting Towards the Final Grade: 50%

OVERVIEW

In this project assessment, you will build a mobile application (app) from scratch. The purpose is to analyse the requirements; design, develop, and test the mobile app. Creating required user interfaces

Learning Outcomes

This assessment contributes primarily to the following course learning outcomes:

LO1: Design and write programs considering appropriate design patterns and following applicable software development standards

LO2: Work with multiple common languages and IDEs, and develop the ability to migrate to new languages, tools and systems

LO4: Investigate, design and implement application data access appropriate to mobile application

LO5: Apply professional and ethical practice to address sustainability, equity, social or contemporary cultural issues

Conditions

- It is recommended that you spend **between 40-45** hours on this assessment.
- All course materials, and any other resources, can be used to complete this assessment.
- The work you submit must be your own work. It is an individual assessment.
- You can ask a tutor to clarify the instructions, and/or for an advice, but they cannot do/solve the required tasks – you must carry out all the tasks yourself!

Success Criteria

It is required to obtain a minimum of 50% of the total available marks to be successful in this assessment. The assessment will be marked according to the rubrics provided in the Marking Form document attached with this assessment. Please take time to read it.

A maximum of two attempts are allowed to complete this assessment. The maximum percentage to be awarded on a second assessment attempt is 50%.

This project assessment contributes to 50% of the final course grade.

PROJECT INSTRUCTIONS

General Instructions

Feel free to research any extra information that may be used to complete this Project assessment.

Overview of Tasks

Task 1: Requirements Analysis and Design

Task 2: Creating User Interface

Task 3: Setting up Navigation

Task 4: Setting up Data Access

Task 5: Developing Component Behaviour

Task 6: Testing on Various Virtual Emulators

Task 7: Initial Client Submission

Task 8: Final Client Submission

Task 1: Requirements Analysis and Design

1. A set of requirements, including background information, is provided by the client. You are required to analyse the given documents and provide your suggestions. You may email the client (tutor) to clarify an ambiguous requirement or to get more details about a requirement.

2. Create a mobile app prototype to fulfil the client's requirements. You are required to, in person, present your created design to the client (tutor). It is recommended to use the JustInMind tool, but another tool may be used with the client's approval.

3. Create a System Design document and include evidence of questions that have been asked to the client for clarification and the feedback received from the client. Highlight the design decisions that you have made based on the client's feedback. Present the final sketches that are created.

Note: At any stage of the project, feel free to email the client (tutor) to clarify an ambiguous requirement or to get more details about a requirement. However, you may not get a prompt response from the client, as in real-world scenarios. It is better to get all the relevant information at the requirement analysis stage.

Client Information and Mobile App Overview

Client's background.

The company provides merchandising services to various retail shops. The company works with multiple clients and has a fleet of merchandisers who, on an agreed day, will come to the agreed space and set up a goods display in the way specified by the client.

The company would like to create a mobile app that both individual merchandisers and supervisors can use.

Mobile app users:

Two groups of users will use the mobile app: merchandisers and their supervisors.

- **Merchandisers** are responsible for setting up product displays in such a way that stimulates interest and entices customers to make a purchase. Each day merchandisers have a list of displays to set up (referred to as tickets in the mobile app). Normally merchandisers will have several tickets a day to action.

  Merchandisers are payed on an hourly basis, so they need to record the time each display took to set up (using a timer in the mobile app) and provide it to their supervisor.

- **Supervisors** are merchandisers' managers; they are responsible for monitoring the merchandisers, making sure the appropriate tickets are actioned and the displays are set up to a high standard. Supervisors also liaise with retail shops regarding their set ups.

Mobile App Access

In this instance, the app access for different types of users should be set up through navigation. In the future, the client would set up proper authentication and authorisation, but it falls beyond the scope of this first iteration of mobile app development that you were asked to undertake.

Functionality Overview

For the *supervisors*, the app should show a list of merchandisers they are monitoring. And include individual merchandiser profiles that contain their names and contact details. They should also be able to see a list of retail shop clients, and be allowed to add a new client or update the existing client's details.

For the *merchandiser*, the app should display the list of tickets and highlight today's tickets. It also has to have the functionality to select the current ticket, record the time taken for the current ticket and then mark the ticket as complete. Moreover, the merchandiser should also be able to add comments to the ticket.

User Stories

The user stories are provided with this document. Some of the user stories may be incomplete. Feel free to contact your client (tutor) to find out more information.

Task 2: Creating the User Interface

1. In Visual Studio, create a new project in the agreed-upon framework.

2. Create user interfaces for the app pages based on the finalised sketches. You are required to create at least three Views/Pages with appropriate controls.

Task 3: Setting up the Navigation

1. Set up navigation between pages as per client's requirements.

Task 4: Setting up Data Access

Set up appropriate data access for the mobile app:

1. Set up a connection to the database.
2. Create database models.
3. Create a class setting up appropriate CRUD operations.

Task 5: Developing Component Behaviour

1. Set up appropriate component behaviour, to include button click events and any other functionality agreed upon with the client.

Task 6: Testing on Various Virtual Emulators

1. Create three emulators using Android Device Manager with various settings for testing your app.
2. Test the mobile app's UI and functionality in those emulators.
3. Provide evidence of the testing that you have performed.

Task 7: Initial Client Submission

1. Present the mobile app that you have created to the client (tutor). Demonstrate the mobile app's functionality and describe its key features.
2. Get client's feedback on the current (implemented) functionality of the mobile app.

Task 8: Final Client Submission

1. Update the mobile app based on the client's feedback.
2. Include the list of modifications that are made. If you choose not to implement any of the client feedback suggestions, provide alternatives and reasoning behind it.
3. Once all code has been finalised, download the final version of the code into a zip file, ready for submission.

SUBMISSION CHECKLIST

Before submitting the team's work, make sure you have collected the following evidence and have it in a format that is ready for uploading to the learning platform:

Task	Evidence Required	Done
1	*System design document*	☐
2-5	*Xamarin project with*: ☐ User Interfaces set up. ☐ Navigation between screens established. ☐ Data Access set up appropriately with models and test data. ☐ The control behaviour set up for all appropriate elements in each screen, as per client's requirements.	☐
6	*System Implementation and Testing* document listing: ☐ The evidence of emulators created, including the screenshots of each emulator's settings. ☐ The evidence of testing conducted	☐
7-8	☐ Developed and tested Xamarin project with all required features implemented. ☐ System Implementation and Testing document listing: ▪ The client's feedback on the initial project submitted ▪ The summary of updates made based on the client's feedback	☐

Submission instructions

Once you have completed all the tasks:

- Go through the submission checklist to ensure you have completed everything to the expected standard.
- Upload required assessment documentation and zipped files through the upload facility in iQualify.
- Read the declaration and submit the assessment in iQualify.