

BSc in Software Development – Year 4

Mobile Applications Development 3 Project

Part 2 – Implementation

You now have a design for the game. The next step is implementation. You will need to create all of the assets in the game you have designed from the ground up. The developer will make Prefabs from your sprites.

Use the UI classes available in Unity to build the menus and displays for the game. The game must have the following components present:

- Menu System – Splash Screen, Introduction, Preferences, Scores, Tutorials
- Scoring System – A score/rewards system with different score values for different enemies, items or tasks that the player must deal with
- Multiple Levels – Player competence and confidence in the game must be challenged with new levels of increasing difficulty. These should have been documented in the design phase.
- Multiple types of obstacle/enemy. There are different levels, so each must accommodate different threats.
- Sound System – Appropriate sounds and music must be incorporated. You do not need to compose the music. You can import a piece, but it should work with the game and needs to be referenced.

The User Experience is a critical aspect of any game. It is an important factor for the implementation of the control system, the menus and the other game components in this instance. The Developer Diary will provide evidence of the decision making and research around the user experience. This includes:

- the rate of increasing difficulty
- the speed of gameplay
- win/loss conditions
- the placement of the controls
- the appropriateness of the control mechanics
- the user of colours and text elements on the user interface

Submission

November 15th – Prototype ready to demonstrate a single level of the game.

December 6th – Final implementation of the game is due by 4pm. The lab sessions scheduled for December 3rd, 4th and 5th will be used for final tweaks and for in-class testing by the rest of the class. The Developer Diary is due on December 6th also. This is an ongoing document as explained below and will naturally be finished with the development of the game.

The game assets should be exported and zipped for upload to Learn Online. The Developer Diary will be uploaded separately as a PDF document to Learn Online by 4pm on December 6th, 2019. You can use GitHub to maintain a developer diary, but be sure to upload documentation to support conversations with the designer. Please be mindful of GDPR issues when doing so. You will be required to complete a short review of your customer and your developer as part of the process. You may also be scheduled for a demonstration of your game.

Deliverables

Game Implementation

The first deliverable is the implementation of the game design that you have been presented within the parameters given above.

Marking Rubric for Implementation

0 - 35%	35 – 75%	75 – 100%
<p>A selection of the basic game requirements have been implemented to a basic level</p> <p>Game Implementation will achieve minimum functionality</p> <p>Game Implementation may contain some syntax and/or run-time errors</p> <p>Game implementation code is poorly documented and/or formatted</p> <p>Game implementation will contain basic features; application will not be tested properly</p> <p>Game implementation code will not follow applicable coding conventions</p>	<p>Game implementation requirements have been implemented to an acceptable level</p> <p>Game implementation will achieve expected functionality</p> <p>Game implementation will not contain syntax and/or run-time errors</p> <p>Game implementation code will be reasonably commented and/or formatted</p> <p>Game will be tested to a reasonable degree</p> <p>Game implementation code will follow appropriate coding conventions</p>	<p>Game implementation requirements have been implemented to an advanced level</p> <p>Game implementation will not contain syntax and/or run-time errors</p> <p>Game implementation code will be well commented and/or formatted</p> <p>Game will be thoroughly tested</p> <p>Game implementation of code will follow coding conventions demonstrating use of appropriate patterns</p> <p>Game implementation adds significantly in a positive way to the design submitted</p>

Developer Diary

The developer diary is your account of development. It is best if you add to this on a regular basis as you develop and reach decisions in consultation with your designer.

The diary contains the thought process in the development of the game and the rationale for decisions made with the designer of the game. It contains details of any patterns that you used in the development of the game. It should also contain references to sources for solutions to problems you may have had during the development process.

You also need to include the completed **Test Plan** for the game here. This is a description of the type and scope of the testing carried out the game. You can read more about test plans at the link:

<http://softwaretestingfundamentals.com/test-plan/>

Marking Rubric for Developer Diary

0 – 35	35 – 75	75 – 100
Poor use of grammar, structure and content with little evidence of knowledge of the problem domain	Good use of grammar, structure and content with satisfactory evidence of knowledge of problem domain	Written and structured to a high standard with content that exhibits expert knowledge of the problem domain
Limited documentation of decisions and discussions leading to the final implementation of the game	Acceptable documentation of the decisions and discussions taken during the development of the game	Extensive documentation of the decisions and discussions taken during the development of the game
Limited test plan presented	Acceptable test plan presented to support the implementation of the game	Thorough test plan presented to support the implementation of the game
Limited evidence of critical analysis and conclusions	Satisfactory evidence of critical analysis and conclusions	Extensive evidence of critical analysis and conclusions

Breakdown of module marks for each component

Game Design Document: 15% of the module mark

Game Implementation: 60% of the module mark

Developer Diary: 25% of the module mark