Cross Platform Development

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| **Assessment Task Number:** Part 4 – Create, Test and Deploy a Game Prototype | |
| **Unit Code(s):** | **Unit Title(s):** |
| ICTGAM537 | Prepare games for different platforms and delivery modes |
| ICTGAM535 | Develop complex 3-D software for games and interactive media |
| ICTGAM554 | Create games for mobile devices |
| ICTPRG533 | Debug and monitor applications |
| CUAANM412 | Create digital visual effects |
| **Instructions to Learners:** | |

This task may be completed as a **group**, but must be submitted **individually**. If done as a group, you must be able to demonstrate which parts to the submission are your work.

**Develop a Prototype:**

You will develop a prototype of your project, implementing the core gameplay using an accelerated development schedule.

Focus on getting a playable version of your game working as quickly as possible.

Your project must:

* Implement a 3D environment (combining a 3D environment with 2D mechanics is acceptable)
* Demonstrate visual effects
* Contain source code that includes comments
* Contain gameplay elements that have been created and checked according to creative and technical requirements
* Use 3D, audio and physics libraries (or related features of the selected game engine)
* Contain animated 3D objects required by gameplay
* Use exception handling techniques
* Contain a GUI interface

**Test, Present, and Evaluate:**

In this phase, you will formally test and debug your game and present your game for feedback.

Testing includes testing and debugging done as part of the development process and some end-user playtesting.

Development testing:

* Test for faults, documenting findings
* Performance profiling and optimisation
* Using log files for errors and events
* Use debugging techniques to remove faults
* Formally evaluate your prototype against the design requirements, discuss and agree on required changes

Playtesting:

* Run playtesting sessions and evaluate feedback from user trials

Present:

* Run your prototype as a presentation.
* Your presentation will be 3-5 minutes in length. You will provide an overview of your game and elicit feedback.

**Refine and Document:**

Apply changes as required according to test results and user feedback. You will polish your game and apply any final changes before final packaging and deployment.

* Apply changes as required from testing and end-user trials
* Integrate all game elements, as needed for the initial brief
* Create and maintain internal code documentation using a third-party tool like Visual Studio XML Comments or Doxygen

**Deploy:**

Compile and package your game for the identified target platforms.

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| **Task** | | **Evidence Criteria** |
| 1. | Playable Game Prototype | A playable game prototype that satisfies the following requirements:   * Implements a 3D environment (combining a 3D environment with 2D mechanics is acceptable) * Demonstrates visual effects * Contains source code that includes comments * Contains gameplay elements that have been created and checked according to creative and technical requirements * Uses 3D, audio and physics libraries (or related features of the selected game engine) * Contains animated 3D objects required by gameplay * Uses exception handling techniques * Contains a GUI interface |
| 2. | Testing and Bug Report Document | You must demonstrate the testing and debugging of your project.  Compile a document that records the following information:   * A list of bug reports or issues uncovered during testing. This can be in a spreadsheet, or exported in Word or PDF from bug tracking software. * Results from play testing sessions and user evaluation.  You must run at least one playtesting session, with at least two play-testers. * Run a performance profiler and analyse the results. Write at least 200 words analysing the performance of your prototype.   + Which parts of your game are the most processor intensive/least optimized   + Is the prototype optimized for the target platform(s)   + What practical implications might exist from your analysis * Describe (at least 100 words) how the results of testing, debugging and profiling influenced development or informed changes to the prototype’s design or implementation. |
| 3. | Oral Presentation | Present your prototype as a 3-5 minute oral presentation.  If presenting as a group, each individual must deliver part of the presentation.  Your goal is to demonstrate your prototype and elicit feedback. |
| 4. | Code Documentation | Create and maintain internal code documentation using a third-party tool, such as *Visual Studio XML Comments* or *Doxygen* |
| 5. | Deploy the Prototype | Compile or package your prototype for the target platform(s).  Submit screenshots or photographs of your game running on the target platform(s) |
| **Submission Requirements:** | | |
| You will need to submit the following:   * A Release build of each application for each target platform that can execute as a stand-alone program * Your complete project, including assets and source code * Your Testing and Bug Report documentation in MS Word or PDF format (Bug reports may be submitted as an Excel spreadsheet) * Any materials prepared and used for your oral presentation * Screenshots or photographs showing your prototype running on the target platform(s)   Be sure to remove any temporary build folders (i.e., the Debug and Release folders). Only project files, source code files, and any resource files used should be included in your submission.  Package all files in a single compressed archive file (.zip, .7z, or .rar) | | |