Assignment 7: Group Project

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Start Date: **9th October 2013**

Due Date: **20th November 2013**

Assignment Brief:

You will work in teams of two or three to develop a small game prototype (2D/2.5D). This involves taking a game from initial concept right through to completion. The game can be produced using a C++ framework or a C# production environment (XNA/MonoGame/PSM) or WebGL. The game must be able to run on platforms other than just Windows desktop.

If you wish to use another environment not listed here you must discuss this with your Teacher and have this approved through the Head of Department. Unity 3D is not an option as it does not encourage practice of programing skills to the depth required at this stage of the course.

You are also be tasked with keeping daily work log which will detail what you did on each day of the project. This will be in the form of an online blog.

Assignment Objectives:

Through completing this assessment you will be able to demonstrate to a prospective employer:

- The ability to design, plan, and implement a full game as part of a team environment
- The ability to produce documentation relevant to the production process
- The ability to take a project from design to completion
- A full working game to show off to other students and prospective employees
- The ability to update and maintain an online portfolio

Assignment Detail:

Your team game should be fully functional. This means that your game should have menus, playable levels and some form of reading/writing to file (Level loading, high scores etc).

Before you write a single line of code you have to complete design, technical and risk assessment documents and a proposed schedule for development within the time frame provided. Once these documents have all been approved by your teacher each student must ***individually*** complete and sign a work agreement which specifies what tasks the student is responsible for on the project. You are free to start coding once the work agreement has been witnessed and approved by your teacher but not before hand.

The design and technical documents will serve as the outline of your game so that everyone on the team knows their

role, and what the larger objective is. This document should be available to refer back to at any point in development.

A working log must be maintained by the team demonstrating how the project is progressing, this work log can be in the form of project tracking software such as Pivotal Tracker. This work log, or a reference to it must be kept in the root folder of your version control repository and will be used to review how you have tracked completion of milestones, where problems have arisen and how you have managed those issues.

Documentation Requirements:

The following documentation must be produced as a **team**:

- Design Document
- Technical Document
- Risk Assessment, OH&S, IP and Ethics Document
- Schedule
- Post Mortem
- User guide for playing the game
- User Feedback

Each student is required to **individually** produce the following:

- An online work log – this can be hosted on any blogging platform or website of your choosing, the work log will outline what work you have carried out that day on the project, each day you spend on the project any progress must be written up in your individual work log.
- Peer review of the other members of the team. In this review you should focus on how well you think the others worked in the team, how well they completed their allotted tasks and identify any strengths and weaknesses you think they exhibited. ***The other students will not see this review.***
- Completed and signed work agreement which specifies what tasks you agree to undertake as part of this project.

Design Document Requirements

- Game Title / Overview
- Core Fun/Mechanic
- Gameplay
- Features
- Target Audience
- Target Platforms
- The 'Hook'
- Controls
- Key Programming Challenges
- Key Art Challenges
- Why is this achievable
- Game player statistics (Health, Damage, etc)
- Menu System
- Art Style
- GUI example
- Menu Example
- Weapons, Power-ups, etc
- Environment
- Timeline and Milestones for project completion

Technical Documentation Requirements

- Detailed description of game components
- Component List
- Component Interaction and interfaces
    - Data flow diagrams
    - UML Diagrams
- Level Details
- Menu Details
- Art Requirements
- Sound Requirements

Risk Assessment, IP and Ethics Document should contain the following:

- A list of risks associated with the project
    - Personnel risks
    - Knowledge risks
    - Technology risks
    - Time line risks
- How your team intends to minimise or address these risks
- IP Agreements that will be adhered to by your team and how any copyright / privacy issues will be addressed
- Ethical issues relating to your project and/or its content and how they will be addressed or minimised

The Post Mortem should cover:

- Your personal experience, challenges and successes during the project development
- Your teams experiences, challenges and successes during the project development
- A review of the completed project compared to the design document and the teams expectations
- What you would change if undertaking this project again
- The overall success of the project and any plans for future development and release
- Your overall critical analysis of the project and what could be improved upon for any further undertakings that may occur for this project

Assessment Timeline

This assessment takes place over 5 weeks.
This is a suggested work flow leading towards successful completion of this project:

- Week 1:
  - Form teams and complete design brief and technical documentation
  - Documentation and project proposal signed off by teacher
  - Set up work log or development tracking via available software
- Weeks 2-4:
  - Work towards completion of Game
- Week 5:
  - Fix any outstanding bugs before submission
  - Clean up any code ensuring comments are readable, and **remove any obscenities**

Submission requirements:

Basic Features: All teams are required to submit the items stated in the previous section. All commenting and documentation must adhere to the **Documentation Requirements** as stated below. These features account for 80% of the grade. For the purpose of this assignment "basic features" include all the functionality which one would expect from a game including, fun, well balanced and interesting game play, good presentation, user interfaces and menu systems, necessary HUD elements, sound effects and relevant visual effects, persistence between game sessions (high score table, saved games etc). Individual student's marks are assessed based on the quality of the tasks and documentation that they contributed to. They will also be assessed on how well they worked in the team environment.

The final documentation, unless otherwise specified, must be produced by the team. It must include as a minimum:

- Analysis of the problem
- UML Diagrams for all the object hierarchy used in the game
- High level pseudo code for all the code
- Program listing with comments
- Analysis of the solution
- Conclusion

As individuals you must create a brief report which analyses how well the team functioned in your opinion. You can take this opportunity to formally raise any team related issues you felt were not addressed effectively during the production.

Advanced features: The more ambitious teams have the chance to demonstrate their creativity and extension of knowledge. These features account for 20% of the grade. You may choose not to attempt this part but a higher grade than 80% will not be possible without it. For the purpose of this assignment "advanced features" include

anything which the lecturer deems to be in addition to a basic game such as, sophisticated AI, network multiplayer, complex graphics, original game play, in game cut scenes, in game story etc. As with the basic features students will only get marks based on the items they were involved in.

It is important that work is uniformly distributed at the start of the project so that each student has the opportunity to earn full marks.

Submissions are due on the date specified at the top of this sheet. Supplementary Assignments required will need to be arranged with the teacher and will be awarded a maximum of a **pass** grade. You must advise the teacher of late submissions at least **1 week** before the due date so that other arrangements can be made.

Penalties for late submission: Grades will be deducted for late submissions up to the given late deadline specified for each assignment (Please check with your teacher). Unless there are valid reasons, the maximum grade a student can get is a **pass** grade for late submission.

Any submissions after the late deadline will be awarded a **fail grade of 0 marks**.

Naming / format conventions:

The naming / format conventions are:

- Make sure your visual studio project is named correctly
- The assignment submission folder should be submitted as instructed via perforce
- Documentation must be professionally presented using Microsoft Office or Open Office

Assessment method:

The assignment will be graded based on the grading rubric below and feedback will be given to the students as required.

Copyright and plagiarism policies:

For programs – you may not copy or simply re-word another person's program for submission. This includes creating a program created entirely from sections of one or multiple people(s) code.
You may use another person's code for part of your program provided:

- You have permission from the author
- You have correctly cited where the code came from
- It is less than 30% of the entire program (70% of the program must be your own work)

You may reuse your own code from previous projects.

For all documentation – You must quote sources for your solution research using Harvard Style referencing. See http://www.cit.act.edu.au/current/cit_learning_centre/research_and_resources/acknowledging_the_source

Learning Outcomes assessed with this assignment:

Virtual World Development
Learning Outcome 2 Demonstrate and understanding of the performance impact of graphics, sound and calculation intensive systems on a real time application
Learning outcome 3 Design and define specifications for a real time application to represent data meaningfully
Learning Outcome 4 Implement and test a real time application to represent data meaning fully and to specifications
Learning outcome 5 Understand and use cross platform programming libraries in a game or simulation

1. Grading Rubric

Criterion	Weight	Fail	Pass	Credit	Distinction	High Distinction
Documentation	40%	Did not submit all or submitted below standard design and planning documents, coding comments and user documentation	Submitted all design and planning documents, complete coding comments and user documentation to a good standard, with an online blog of progress maintained by the student.	Design and planning documents are detailed and clear. Coding comments clearly describe all sections of code that are complex and user documentation is easy to follow and complete. A detailed online blog of progress and development with regular entries.	Design and planning documents are concise but clear. Coding comments clearly describe all sections of code that are complex, with use of a comment extractor to generate a HTML document. User documentation is concise but complete. A substantial level of online documentation detailing production and development on the project with consistent entries.	Design documents are excellently organise and presented in the clearest and most concise way. Coding comments are concise but describe all complex code excellently. Code comments are also presented as a HTML document using visual aids such as graphics with Doxygen to describe source file connections. User documentation is excellently presented with concise and easy to follow instructions. A substantial level of online blog/documentation detailing production and development on the project with detailed and daily entries

Game Implementation	50%	Game Implementation is incomplete and fails to meet an industry standard of development.	Game implementation is complete and demonstrates the content laid out in the initial design documentation meeting and industry standard of development.	Game Implementation is complete and adheres closely to the design documents originally put forward for submission. Solution shows some level of creativity in application to proposed project.	Game implementation is very through and conforms tightly to design specifications. There are some levels of innovation present in application that were not present in proposed project application or exceed design proposals put forward in initial planning documentation	Game implementation is to complete to a very high standard with significant additional features added to the project that greatly exceed and enhance design proposals put forward in the initial planning documentation.
Review & Evaluation	10%	Inadequate consideration for implementation of an effective evaluation and improvement cycle	Basic consideration for implementation of an effective evaluation and improvement cycle	Evaluation and improvement cycles effectively considered	Well-developed consideration for implementation of and effective evaluation and improvement cycle	Highly developed and tested implementation of an effective evaluation and improvement cycle.