

# CE318 Games Console Programming Assignment

Set: November 10, 2011

Due: January 17, 2012 (12 noon)

The assignment is to design and implement a **3D console game** based on the lab work we have done (and will continue to do). The assignment is worth 20% of the total mark for this module, and will be assessed according to standard degree-grade criteria. You will be expected to demonstrate your game in the lab following the assignment deadline. You have a considerable degree of freedom in your choice of game as long as it meets the criteria listed below. Examples include 3D shooters (e.g., Unreal Tournament), extended 3D Pong with object collection, extended 3D Angry Birds, racing games, spaceship simulators, etc.

The software should be well designed and organised into appropriate classes. Control structures should be as simple as possible. Comments should be used in the code where necessary (you have to judge when that is). The following marks break-down is approximate. You are expected to cover all of the basic features. It is not necessary to implement all the advanced features, though you should try to do several of them at least.

The use of third party libraries is not allowed and any code segments based on someone else's code (e.g., if your code has been inspired by some source found online) has to be properly acknowledged and referenced.

## Part A: Basic Game (50%)

Your game should require simple rules that make the game interesting. Your game should be fun to play. The following features are required:

- A moving object (player, opponents, obstacles).
- An appropriate camera implementation.
- Collision detection amongst all elements in the game (unless not desired).
- Collecting items such as health packs, boosters etc.
- Allow for different levels that are loaded from a file (e.g., mazes, race tracks, obstacles, tasks).
- AI opponents with simple yet better-than-random behaviours (using, e.g., A\*).

## Part B: Advanced Features (30%)

You can extend your basic game with more advanced features *such as* the following, which should be coherently integrated into your game:

- Different types of opponents.
- More advanced opponent AI.
- Different types of objects in the game (for collection, collisions).
- Articulated objects in the game.
- More advanced visual features such as particle effects, billboard, etc.
- Multiplayer options (split-screen).

## **Part C: Report (20%)**

A concise but sufficiently detailed description of the main design choices you made when implementing the game. For part A the main emphasis will be on the software implementation choices you made. For part B you should describe the extensions you made. Include code snippets and diagrams as appropriate. The complete report should not be longer than 10 pages.

## **Electronic Submission**

Submit a zip file including all the source files plus design document together with any sound and image files needed to run the game. When unzipped the game should be immediately runnable from within Visual Studio under XNA 4.0. The game should run both on a PC and on the Xbox 360.