

Programming Game Worlds 2006-2007 Assignment 1

The purpose of this assignment is to develop a game world for a 3D RTS (Real Time Strategy) game. If you are unsure what a RTS looks like, download the trial version of Command & Conquer Generals, Darwinia or Black & White.

You should aim to include the following features:

1. A loader that allows you to configure the starting positions, meshes and textures used. You can modify use the DalekWorld loader or implement your own. Bonus marks awarded if your loader file format is hierarchical, compatible with Half Life 2 or XML based!
2. A Camera for an RTS. You will need to modify the behaviour of the DalekWorld cCamera to enable the mouse and implement pan, zoom, rotate etc similar to a commercial RTS
3. You can program your world however you like. Use terrain rendering, vertex buffers, meshes etc. It can be an RTS based on dogs and cats, ants, tanks, aliens, daleks - whatever you decide. What I propose is that you use a terrain or vertex buffer for the land and a textured vertex buffer to model water
4. At least one "enemy" with simple behaviour. In other words following a path, moving from one position to another and back again etc.
5. At least one player controlled character. A character that you select using the mouse and can move by right clicking on the terrain
6. A projectile. You could also implement a particle system to create an explosion effect.

Above all this is an assessment of your understanding of the technologies learned on the course, and your **own individual creativity and imagination**. I recommend you should spend about 20 hours on this assignment (2-3 days). This assignment is worth 15% of your overall mark for games programming. Those wishing to use this assignment as part of a portfolio may wish to spend more time on it.

There will be 2 deliverables

1. On the 9/10 December you must present your implementation plan. In other words the list of features you plan to present and a description of how you plan to do it. You must also demonstrate your camera model. This is worth 5%
2. The final deliverable must be demonstrated in class the first week after the Christmas break. This is worth 10%.

Rules of the assignment:

- This is an **individual** not a group assignment.
- You must submit all code through WebCT on before the 26/01/2006
- You must include a short document explaining your code and any special features/algorithms you have implemented.
- Your document must include a class diagram. You can use Rational Rose to generate these from your code automatically. (Don't do them by hand – it's a waste of time).
- No student will receive a grade for this assignment **without** doing a demonstration.
- Students **will** be penalised for late submission/demonstration unless a prior arrangement has been made with the lecturer.

Marks will be allocated as follows:

Category	Description	% Marks
Features/ Complexity	The number or features implemented, or the complexity of the solutions presented	60%
Cleanness/reuse	The extent to which you reuse and enhance the framework and generally implement good OO solutions to problems	30%
Presentation	How the work is presented in the writeup and demonstration	10%

This is an individual assignment. It is ok to use code from the web/books etc. so long as:

- 1. You understand and can explain the code**
- 2. You do not try to pass off the work as your own.**

Plagiarism is a serious offence and will be treated as such.

This is your final year, do not screw it up!