# IN3026 – Advanced Games Technology – Milestone 1 (Interim Build)

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## Game Concept/Vision

At core, Cursefall is a dungeon crawler in a fantasy medieval land where you venture through a dungeon, escaping traps and fighting monsters. The game has multiple levels made up of trap rooms or monster rooms. The player must overcome the monster AI with their sword or magic spells. While the adventurer can use both a sword and magic, some monsters are only vulnerable to one type of combat so the player must choose wisely how they decide to carry out the encounter.

## Intro screen

Graphical user interface

Description automatically generated with low confidenceThe Intro screen in this game is made with a combination of pre-existing primitives and some camera work. The intro and option screens are physical objects in the world, placed underneath the map where a player would not have access. They are terrain types (though it might be more efficient to use a 1-sided quad in the future) textured with an image I have modified in Clip Studio Paint. I downloaded the image as referenced in the code and added the text in the Creepster Font (not needed to run the game). Upon initialisation, a new Boolean called m\_gameStart is set to false and as a result of this, the camera is set to look directly at the intro screen primitive.

If the player presses the right key as indicated on the intro screen and the game has not started, this goes to another similar primitive for the options screen. So far, it only displays the controls that will be used in the final product. The player can then go back and press space to start the game.

## Primitive-based object

A picture containing umbrella, accessory

Description automatically generatedA picture containing text

Description automatically generatedFor my primitives, I have created three different objects. Firstly, I have created a potion. This is a hexahedron with two slanted faces and a cuboid stacked on top. Furthermore, the wall-torch is a more complex shape and I am aiming to place a sphere with a red-coloured point light inside it, about the top of the torch. This will make it look like an illuminating room feature. Finally I A picture containing text, outdoor, red, wooden

Description automatically generatedhave also created a table which is originally square however can be scaled. I created the legs of the table by manually adding the coordinates for the bottom-right leg, and then proceeding to reflect them in x, z and (x,z) accordingly, after which I would reverse the indices in which they were added so that the winding is correct. In the future, I also aim to add a chair primitive. Graphical user interface

Description automatically generated with medium confidence

## Skybox and terrain textures

For the skybox, I have changed this texture to one I have found online. Once downloaded and applied however, the orientations were not matching with the camera view. This, meant that I had to rotate the top and bottom skyboxes by 90° in Paint3D. after doing this, the skybox displayed as intended. In addition to this, I have also changed the terrain texture to a high resolution dusty terrain image so that it does not look as stretched. In the future, it would be a good idea to implement a continuous texture that repeats often so that scaling no longer becomes an issue.

## Camera motion technique

For the camera motion, I have combined some features from the lab exercise alongside my own ideas. I have therefore implemented a first person camera view with turning and camera wobble when the player is walking. When the player enters fps mode and starts walking, the camera starts lower than usual. This is a feature and meant to symbolise the adventurer standing up from a sitting position (this can be changed by cam\_wobble = 0.0f to 0.4f up to 0.6f ). From there on, whenever the player is walking (using O to walk forwards and P to walk backwards), the camera will displace in the y axis, bounded between 0.4 and 0.6. When the player stops however, there is no wobble as the player is stationary. In addition, the 1 and 2 keys change the direction of the player’s travel, alongside the fps camera angle, making it look like a smooth turn. By default you are in debugging camera view and must press J to switch to first person mode.

## Mesh-based object

A picture containing indoor

Description automatically generatedA picture containing outdoor, several

Description automatically generatedThe first mesh-based object I have added is a barrel that by default is upright. I have created multiple instances of it and rotated/translated them accordingly so that they look more appealing. Secondly, I have also added a sword that the player is holding an which will be used in the game as a weapon. The sword is also rotated by atan(cx,cz) in the y direction where cx and cz is the x and respective z coordinates of the camera’s front vector

## Final game

In addition to the existing features, the final game will include the following:

* Several audio tracks for walking, melee attack, mage attack, mobs etc.
* A HUD indicating player HP using images and spells available/mana depending on the game direction.
* Mouse-changing camera rather than keyboard inputs.
* Point lights for torches and spotlights for the player, with some further directional lights.
* Special effects such as fog and electricity.
* Game physics such as gravity placed on objects that fall down, sideways forces being applied and acceleration for spells.
* Four to five different aggressive and non-aggressive NPCs.

## References and outside information

Apart from the lab exercises and links to the game assets used (links in the code comments), there was no outside information used.