

Software Design Document

Description of software

The software designed is Cataclysm IV: Destruction of Hell, a 3D MonoGame Demo. Developed in C# by Francisco Macia using Visual Studio and MonoGame version 3.7

The game is a DOOM tribute where the player must carefully place grenades and lure enemies into them to defeat them while they pickup skulls to increase their score. A number of collisions have been programmed to create behaviours between game elements. The game has Menu, About, Play, and Lose states that change depending on the current state of the gameplay.

3rd Party Code

The only code copied from the internet was the one involved with rotating enemies to always face the player (taken from <https://gamedev.stackexchange.com/questions/49613/how-to-rotate-enemy-to-face-player>), as shown below. The rest of the code was written by me through previous experience, trial and error, and checking the class lectures and labs.

```
//Enemy movement
foreach (Enemy enemy in enemies)
{
    towardsPlayer = camPosition - enemy.position;
    towardsPlayer.Normalize();
    //3rd party code starts here
    angle = (float)Math.Atan2(towardsPlayer.X, towardsPlayer.Z);
    enemy.rotationMatrix = Matrix.CreateRotationY(angle);
    //3rd party code ends here
    enemy.position += towardsPlayer * enemy.speed;
}
```

Link to video

https://youtu.be/HE9_S2ZCnIQ

Class Diagram

