Logo

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**22/FA-COP-2939-68831**

**Capstone Project**

**Preliminary Design**

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## Overview

The purpose of this document is to detail the preliminary design of the Abyssal game project. The document will outline the primary functions using UML notation.

## Overall Structure

The overall structure of the project will rely on the GODOT game engine. The game engine uses a delta function that is called 60 times each second to keep system calls in a sync of 60 second intervals.

Diagram

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## Routine Breakdown

Delta: method called very second 60 times to keep track of game state changes and interaction with objects.

Player\_Controls: Stores the players x, y, and z index to determine the position the play is facing or moving on the coordinate grid.

Dimitri : Player\_Controls: Using the position the player is on the coordinate grid we then pass delta to \_Process to call each method 60 times a second.

Player\_Direction: Determines which direction the player is facing and if they are currently pressing anything.

Player\_Jumping: Used to determine if the player is currently in the air and used to calculate gravity and friction of the player.

Play\_Physics: Used to determine gravity, speed, acceleration, deceleration, friction, and other physics-based attributes for the play. Also has a timer to sync with frame refreshes.

## Frameworks and Software

Software will be developed in GODOT while using visual studio code to write source code in C#. GODOT uses the .NET Core community framework.

The full software requirements will be:

* [GODOT 3.5](https://godotengine.org/download): Will need [Mono Version (C# support)](https://downloads.tuxfamily.org/godotengine/3.5/mono/Godot_v3.5-stable_mono_win64.zip)
* .[NET SDK](https://dotnet.microsoft.com/download): Framework for Mono Version
* 64-bit Windows operating systems
* [Visual Studio Code](https://code.visualstudio.com/): For external IDE development
  + GODOT extension in Visual Studio Code (C# tools for GODOT)
  + Mono Debug for code debugging
  + C# for Visual Studio Code
* [Kenney Game Assets All-in-1](https://kenney.itch.io/kenney-game-assets): Artwork for game
* [Trello](https://trello.com/?&aceid=&adposition=&adgroup=105703214328&campaign=9843285532&creative=430959026561&device=c&keyword=trello&matchtype=e&network=g&placement=&ds_kids=p53016490704&ds_e=GOOGLE&ds_eid=700000001557344&ds_e1=GOOGLE&gclid=CjwKCAjw3qGYBhBSEiwAcnTRLqFqu5s94mg_5UkCh4jl5AUThbPWSL-H66wyHoVY0-ZzozTLNSp73RoCujgQAvD_BwE&gclsrc=aw.ds): Used for Scrum/Agile development