



## **GAME3121 – Game Engine Development**

### **Assignment 1**

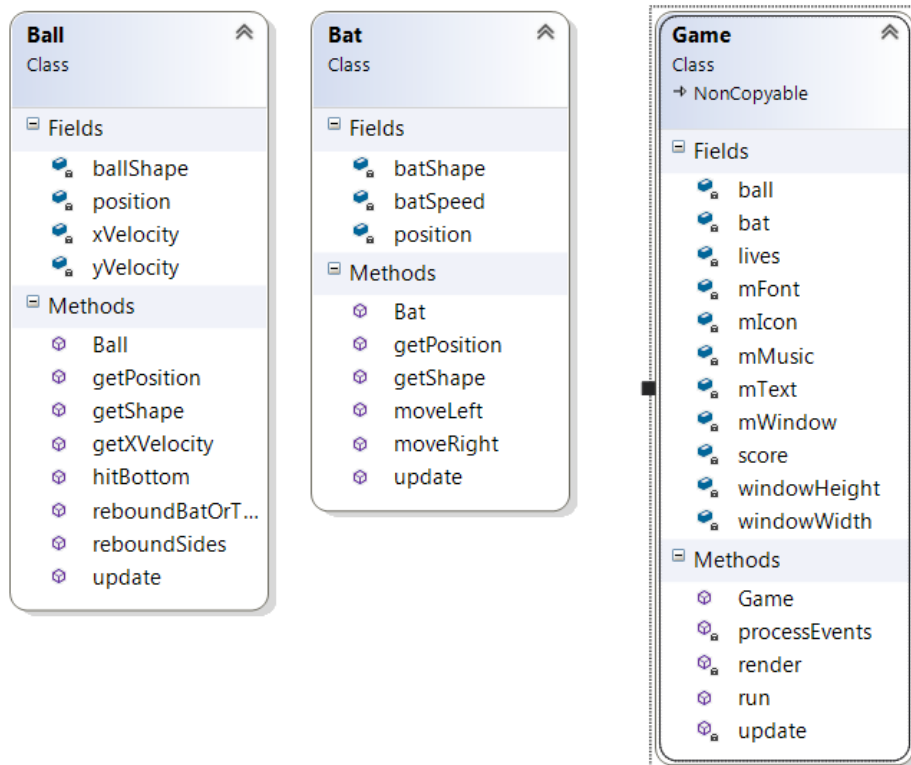
#### **Assignment 1: Single Player Paddle Game**

Not all 2D games have to be scrolling shooters and since you'll have plenty of experience learning how to create one with OGRE this term, for your first assignment you're going to put together a simple pong-like paddle game layout with only one player. You of course **MUST** use OGRE to get user input, create a game window and render a few sprites to the screen. Include the following criteria:

- 1) The game only has one player depicted as a simple rectangular bar at the side of the screen. Alternately you can have the player at the bottom of the screen.
- 2) Whatever your orientation of choice, the player can only move side to side like pong or any paddle game and should be positioned slightly in front of the side of the screen you are trying to protect.
- 3) For the player's appearance, just make it a thin rectangular bar and the width is up to you but it shouldn't be more than 6 times as long as it is wide. It can be a sprite you create in any color you like.
- 4) There's also going to be a ball that can be a simple round sprite any color you wish.
- 5) You're also going to have to create two text items, one for the player's lives that can be around 3-5, and one for the player's score that starts at 0 and counts up when the ball is rebounded by the player's paddle.
- 6) We are expecting you to do some collision detection.
- 7) You have to get the player to move side to side within the constraints of the window, and the ball will spawn somewhere on the opposite side to the player. Therefore, we would like to see ball movement.
- 8) Game statistics are important elements to any game. You are going to render another two text items to display frame update statistics:  
**Frames/Second and Time/Update**. These two statistics will get updated for every frame.
- 9) Your code should follow Object Oriented Programming style. Game class and Header, Paddle Class and Header, Ball Class and Header. See the following class diagram as an example!
- 10) You can have a partner or you can do this assignment by yourself.
- 11) Last but not the least, you have to "demo" your assignment in Discord, copy the entire project in Google drive and send me the link. I should be



able to open the project and run it with no problem. Because we both use OGRE\_HOME or OGRE\_HOME\_V2 environment variable.





See the mark breakdown for the details of the marking scheme.

**Marks: 10% of your grade**



---

Task	Mark	Possible Marks
Window, Bat, Ball creation		2
Bat and Ball Rendering		2
Object Oriented Programming		2
Player Movement		2
Player Bound Creation		2
<b>TOTAL:</b>		10