

OOP Project Part 2

Team: 15

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Title: Java Game (subject to change)

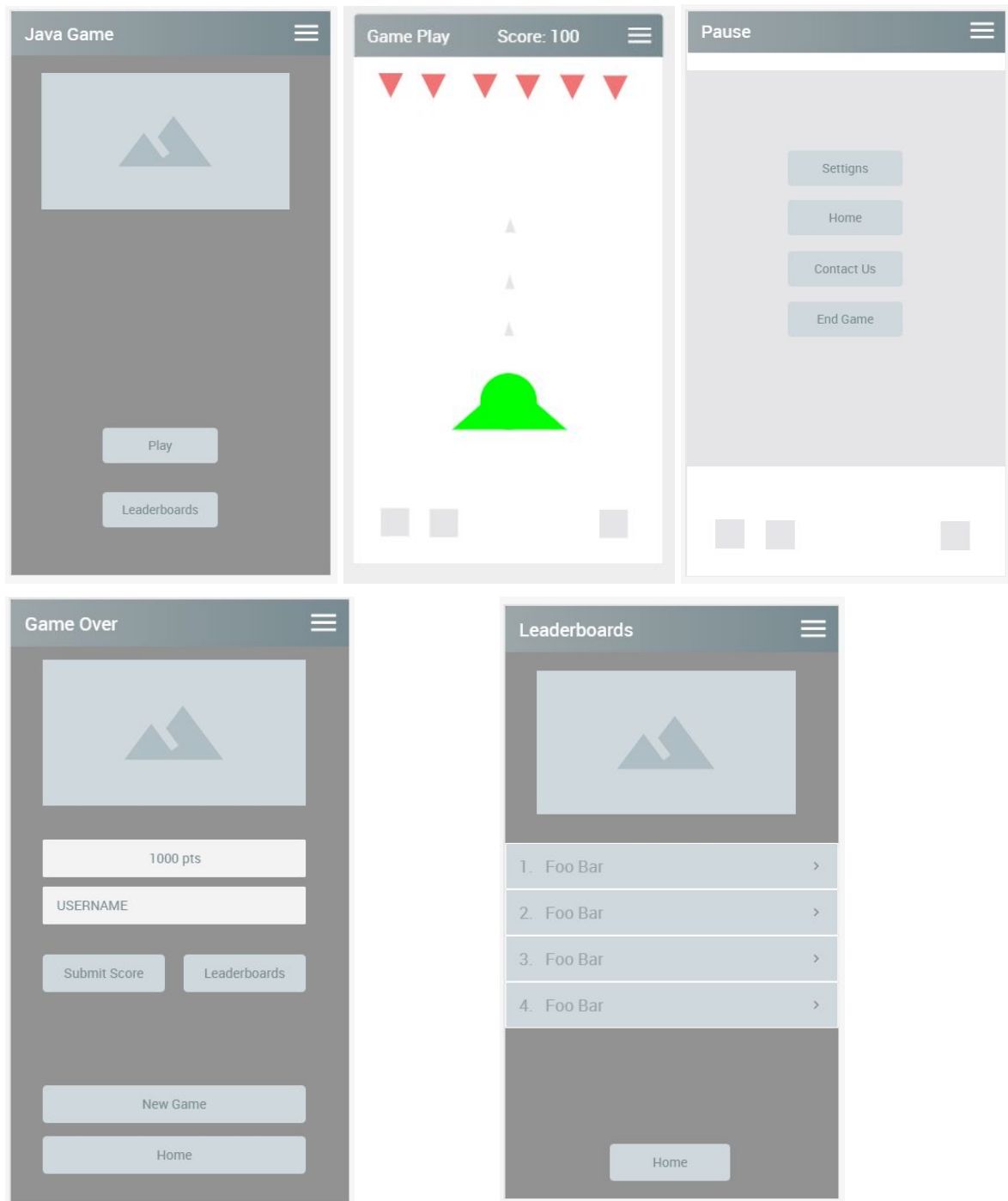
Project Summary

A Java mobile game developed in Android studio where a player will move around the screen dodging enemies and shooting them while collecting objectives to gain points. The game lasts until the player reaches zero hp, and will increasingly get more difficult. The player can pause the game and quit or resume from the pause menu. After playing the game the player has the option to put in a name to store their score on the local leaderboards. From the main menu a player can start playing, or view the leaderboards where they can search for a name to view their score.

Project Requirements

1. As an admin, I want to edit the leaderboards
2. As a player, I can start the game
3. As a player, I can pause the game
4. As a player, I can shoot projectiles
5. As a player, I can gain points by collecting objectives
6. As a player, I can lose the game
7. As a player, I can gain points by killing enemy
8. As a player, I can quit the game
9. As a player, I can move my character
10. As a player, I can be able to save my score with my name
11. As a player, I can be able to view other peoples highest scores
12. As a player, I can search the leaderboard for a specific name
13. Performance, the game should load in under 5 seconds
14. Performance, the game should run at least 60fps
15. Reliability, the leaderboard will always save and is always available

UI Mockups



Note: the website used will not let the user upload pictures without paying for a premium service. The placeholders represent a logo, or teaser video of the game.

As the user plays the game as seen in the second picture, they will be able to move and shoot with the buttons. As they score points, they will be able to see their score go up in the menu bar.

An interactive prototype can be found at:

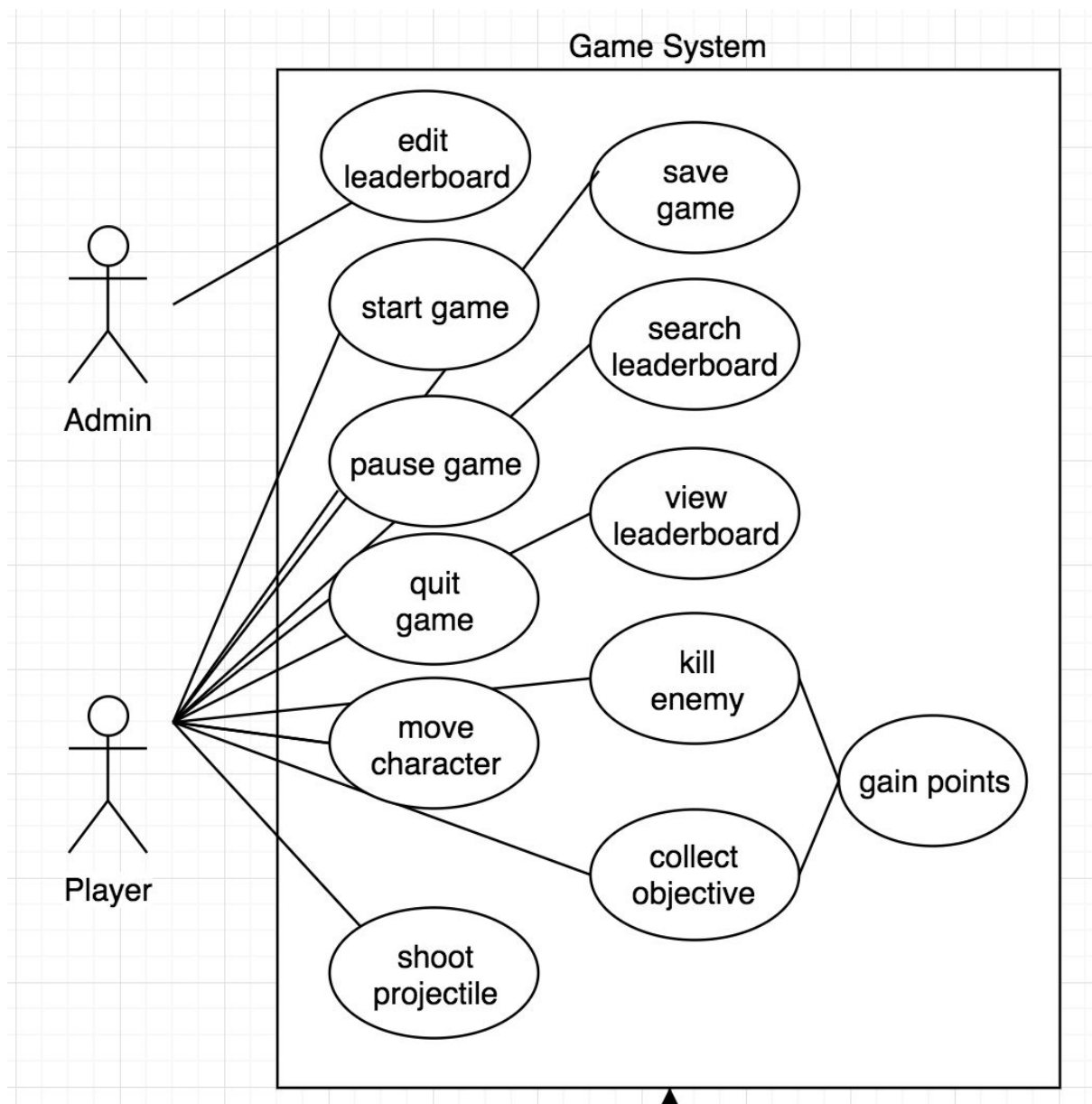
<https://www.fluidui.com/editor/live/preview/cF9WWIRyU2FOZDVMemdaY0ljT0hQelhNbTN2YzFzbnNuWg==>

Data Storage

We are using a local database stored in a HashMap for each score and name on the leaderboard.

Use Cases

Use Case Diagram



Use Case Documents

Use Case ID:	#01
Use Case Name:	Move Players Character
Description:	The player can move the character in order to move towards treasure, move away from enemies, or whatever direction the player chooses.
Actors:	Player
Pre-Condition:	Player has started game. Player has not died. Player is not trying to move in a direction obstructed by a wall or off the edge of the map
Post-Condition:	System moved the player to its new location and displays it
Frequency of use:	Almost constantly by player while in-game
Flow of Events:	<div>Actor:</div> <div>System:</div>
	1. View UI to decide where to move Move the player in the correct
	2. Press button to move in desired direction direction and update the display
Variations:	
Exceptions:	If moving will hit a wall or edge of the map, do not move
Notes:	

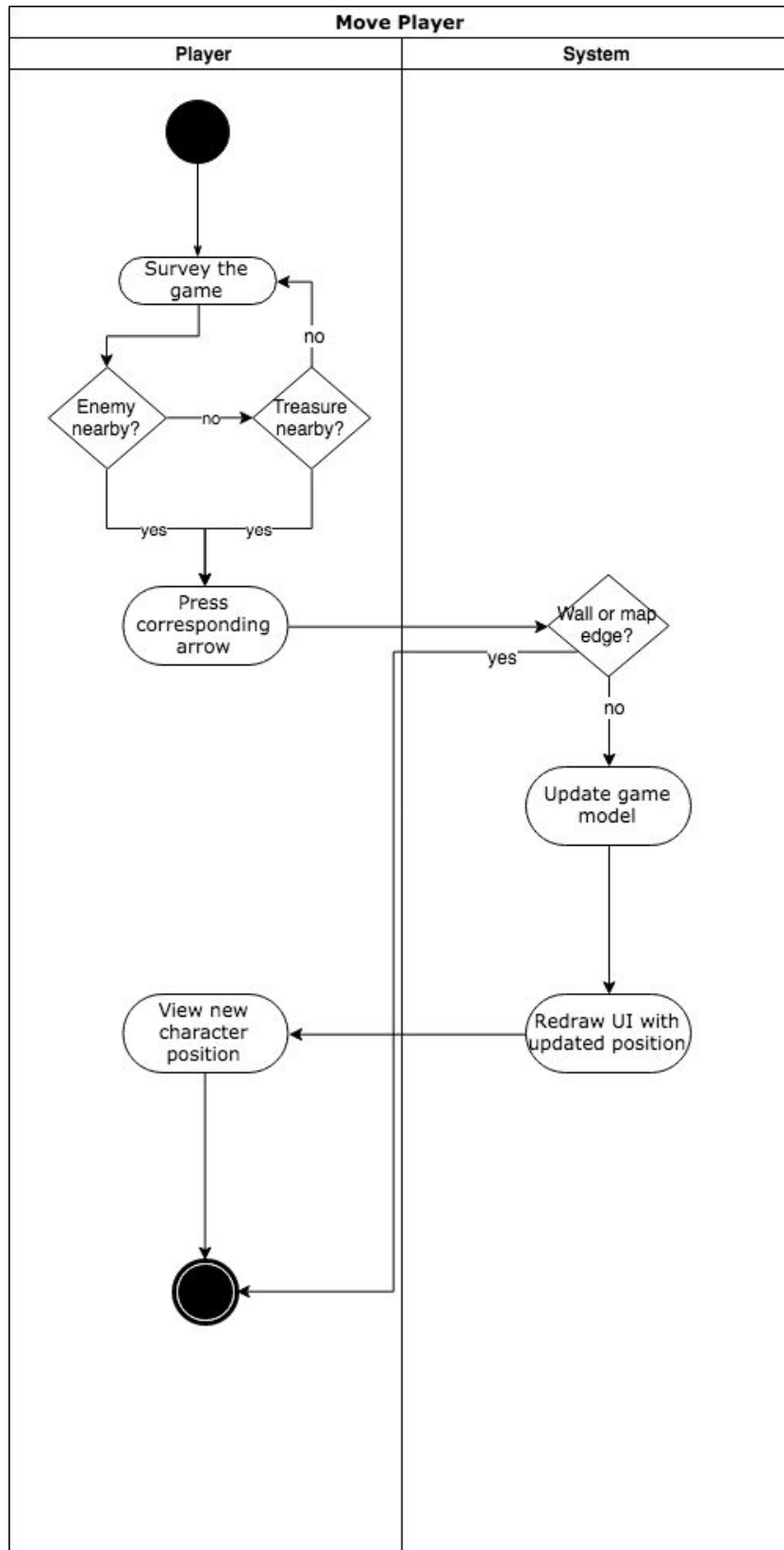
Use Case ID:	#02
Use Case Name:	Player kills enemy to gain points
Description:	The player shoots and the projectile hits an enemy
Actors:	Player
Pre-Condition:	Player has started game. Player has not died. Player is able to shoot and the projectile can hit an enemy
Post-Condition:	System updates score and the enemy disappears
Frequency of use:	Very often by player while in-game
Flow of Events:	<div>Actor:</div> <div>System:</div>
	1. View UI to decide where to shoot Display projectile in right direction
	2. Press button to shoot in desired direction enemy gets hit and is removed
	update the score on display
Variations:	Hit a wall, projectile disappears
Exceptions:	If projectile misses enemy then do nothing
Notes:	The projectile can be fired in any direction and can hit anything

Activity Diagrams

Requirement ID: 9

Use Case ID: 1

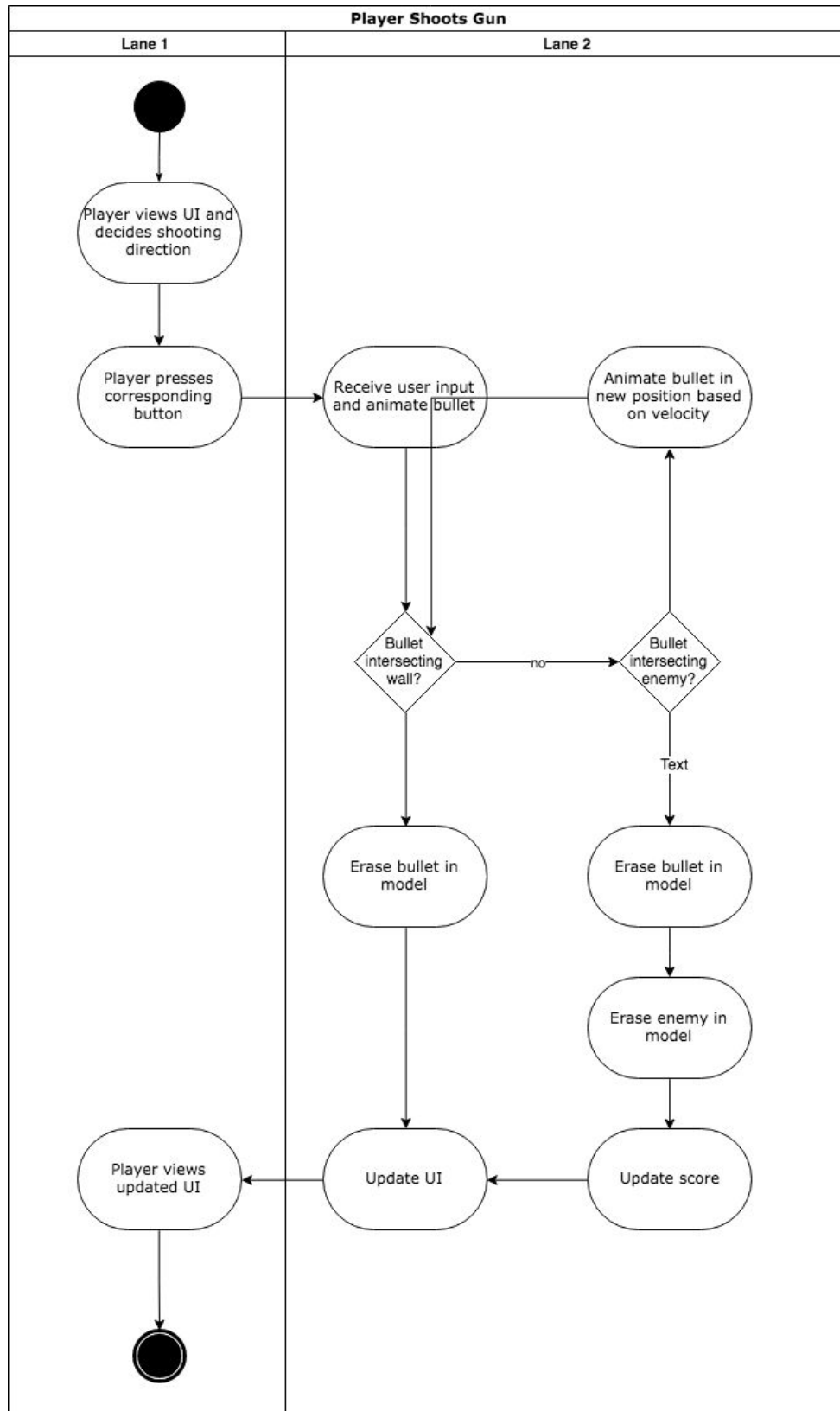
Description: Player moves character in game



Requirement ID: 4

Use Case ID: 2

Description: Player can shoot bullets in order to kill enemies

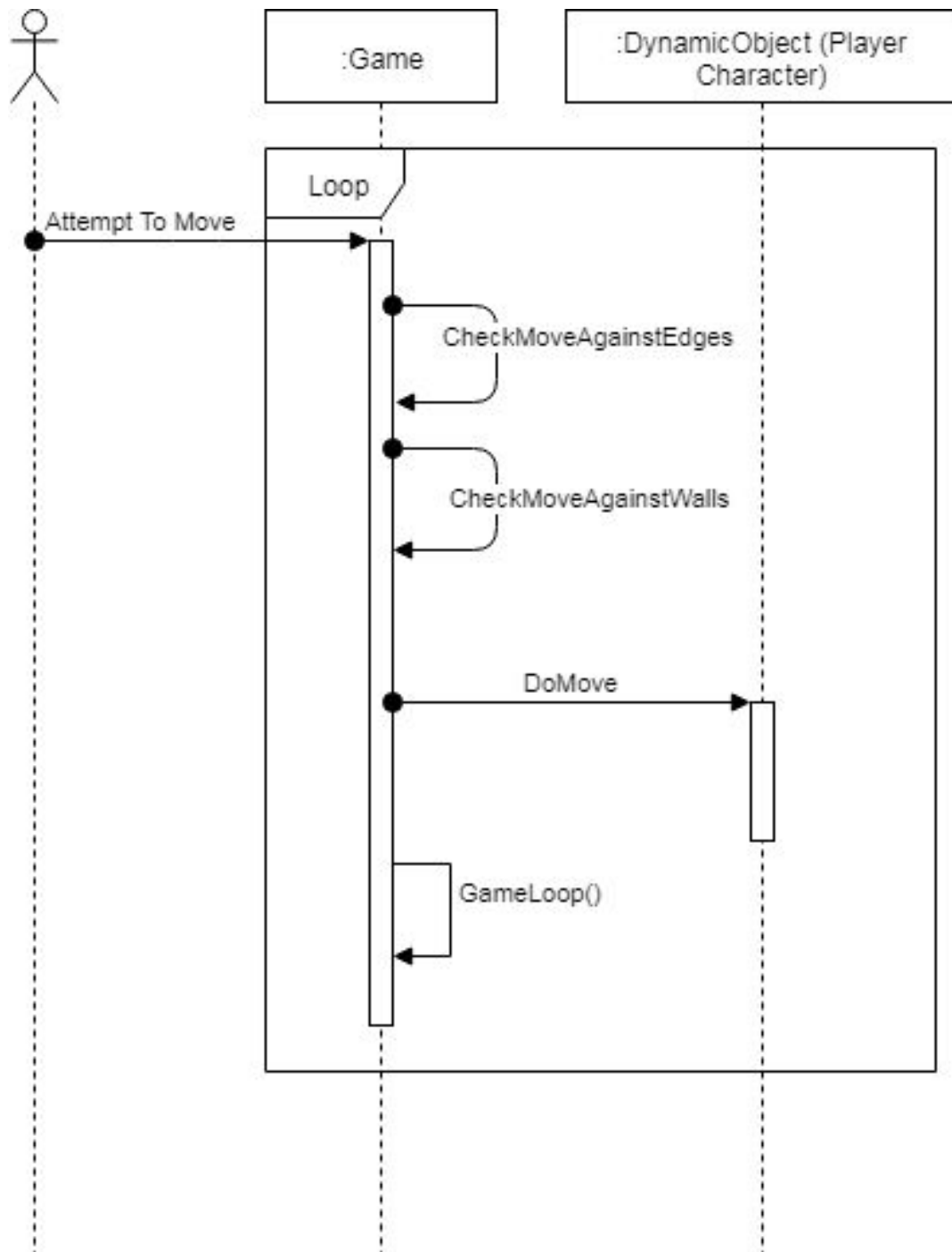


User Interactions / Sequence Diagrams

Use Case #01:

Move Players Character

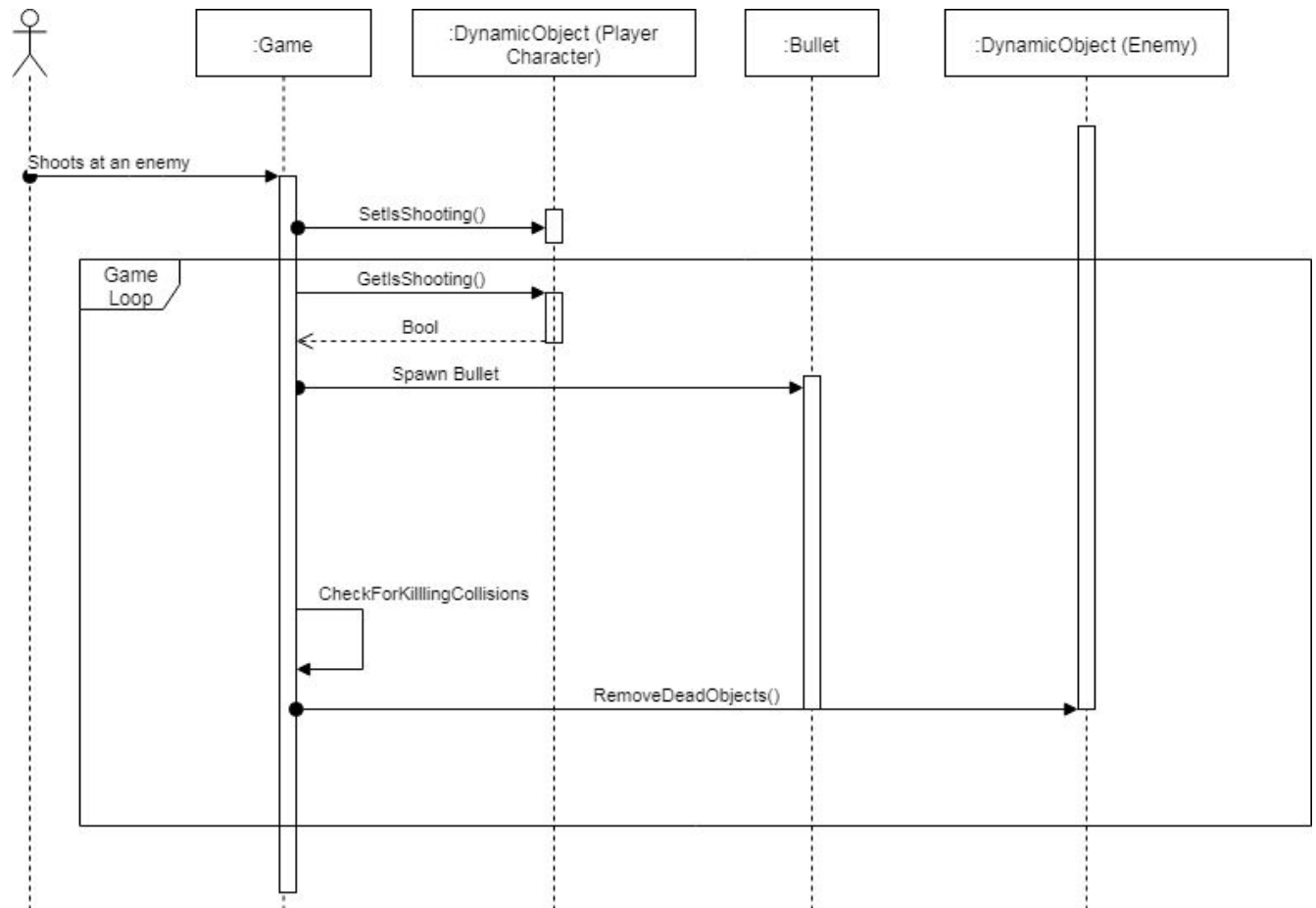
The player can move the character in order to move towards treasure, move away from enemies, or whatever direction the player chooses



Use Case #02:

Player Kills enemy to gain points

The player shoots and the projectile hits an enemy.



Class Diagram -- full diagram can be seen in a single image at:

https://drive.google.com/file/d/1CLHY_TZK2KPSFxiV0nIrfOoSah3tEiW-/view?usp=sharing

