

Institiúid Teicneolaíochta Cheatharlach



At the Heart of South Leinster

Computer Games Development CW208

Software Functional Specification

Year IV

Michał Krzyzanowski

C00240696

28/04/2022

Contents

Acknowledgements	2
Functional Specification	2
References	2

Acknowledgements

I would like to thank my project supervisor, Martin Harrigan of IT Carlow for supervising this project and helping me greatly with ideas and directions.

Functional Specification

The application will feature a physics simulation, handled by Box2D. The user will be able to place shapes anywhere on the screen except on top of any UI elements. The user will be able to select different shapes to place and start the simulation and gameplay phase by pressing the Space key. The gameplay phase only triggers when certain conditions are met (player object & at least one target object preset). In the gameplay phase, the player is able to aim their shots using the mouse, change shot power using the left & right keys, and shoot a bullet using the Left Mouse Button. The goal is to shoot all of the targets in the level using the limited bullets (limit of 3). Pressing space in the gameplay phase will bring the user back to the editor phase and reset the level. Pressing the 'S' key allows the user to save a level and pressing the 'L' key will bring up a list of saved levels that the user can reload. Lastly, the user can run the difficulty estimation application by pressing the 'G' key, this will run through possible shots a player could make and returns a difficulty rating for a level.

The User Interface will be minimalistic, at the bottom will be a row of shapes the user can select. In the top-right corner, there will be text showing the user in which phase he currently is (edit phase, simulation phase, etc.). There will be a togglable help text giving the user the most important controls. The box of the currently selected shape will be highlighted red and the shape will have its shadow displayed at the cursor's position.

