Technical Design Document –
Cross-Platform Development

Key Systems and System Interaction:

Player Controller - Handles player input

Enemy Controller - Controls enemy movement and attack patterns

Spawning - Instantiates the enemy positions in levels

Bullets - Handles the movement of bullets and all collisions that are possible

Barriers - Overall controller for the barrier, made up of cubes

Cube Script - Individual controller for the pieces that make up the barrier

Menu Script - Handles all menus

UI - Consisting of buttons on the screen, connected to scripts to perform actions

Platform Considerations:

Since we are using Android as our platform, it comes with the potential that the game can become too complicated with a small screen.

To combat this, we have chosen to keep the game within the bounds of the screen and allowing the player limited movement. This enables the player to focus on the enemies and their incoming attacks. We have also planned for the projectiles created by the player to travel in a straight line, to further simplify the gameplay, as any other aiming method would end up blocking too much of the screen.

The controls are also simplified to only three buttons, two for movement and the third to fire.

Class Diagrams and Program Flow:

Below is a rough class diagram and program flow chart illustrating how the program will operate.

PlayerScript

void Start();

void Update();

void FireShot();

public int speed;

public float fireRate;

public text scoreOutput;

private int score;

private Vector2 pos;

BarricadeScript

void Start();

void Update();

GameObject[] cubes;

CubeScript

public int health

public Vector2 position

BulletScript

private Vector2 pos

public float speed;

void Start();

void Update();

void OnCollision();

OnCollision deals with collision with Player, Enemies and Barricades

SpawnScript

void Start();

void Update();

public int SpawnTime

EnemyScript

void Start();

void Update()

public int speed;

public float fireRate

public GameObject player;

private Vector2 pos;

MenuScript

void Start();

void Update();

void DisplayEndScreen();