

PROJECT IRON CURTAIN

Joona Väänänen, Lauri Aunio, Tero Nikula, Laura Tikkanen, Joona Hautala
Oulu University of Applied Sciences, Bachelor of Engineering, Information Technology, Software Engineering

Introduction

The aim of Project Iron Curtain was to create a 2D side-scrolling mobile game for Android. The concept of the game is that the character attempts to survive crossing a border in a war zone. On the character's way there are various obstacles such as mines, watchtowers and attack dogs. The game is based on actual historical events.

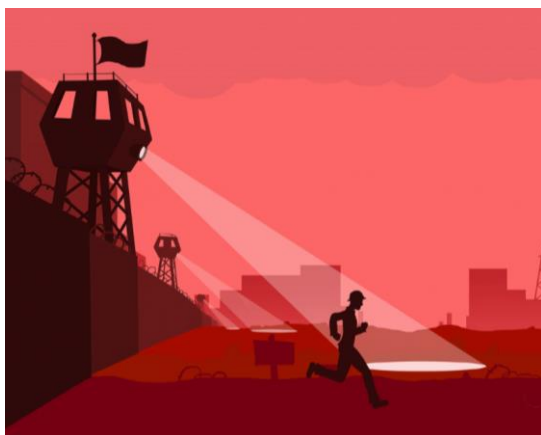


FIGURE 1. Game intro

Objectives

The main goal of the project was to create a visually appealing fun-to-play mobile game for Android. Also qualities such as responsive controls and reliable in-game physics were highly pursued for.

The game were to offer quick entertainment which would however require skill and practice. Programming-wise the game were to be written in Java language.

Methods

The project was done in collaboration between software developer and visual designer students. The visual designers created the graphics and animations which were implemented in the game by the software developers. LibGDX game-development application framework was utilized to provide the game with such basic features as input handling, physics and graphical rendering. The physics engine used was Box2D. The project was entirely written in Java language.



FIGURE 2. LibGDX project setup

Results

The game was successfully finished as the project ended with the planned features and functionality. The game features obstacles that the character must avoid or else its health points are decreased and the player is provided with haptic feedback. Each successful border crossing is scored based on elapsed time and remaining health points. A menu screen is also included in the game along with comprehensive setting options.

```
public void drawMap(SpriteBatch batch) {
    for (int i = (sprites.length - 1); i > -1; i--) {
        sprites[i].draw(batch);
    }
}

public void animateBackground(Camera camera, float old_cameraX) {
    for (int i = (sprites.length - 2); i > 0; i--) {
        if (camera.position.x > old_cameraX) {
            sprites[i].setPosition(× sprites[i].getX() + ((sprites.length - i)), sprites[i].getY());
        }
        else if (camera.position.x < old_cameraX) {
            sprites[i].setPosition(× sprites[i].getX() - ((sprites.length - i)), sprites[i].getY());
        }
    }
}
```

FIGURE 3. Java code snippet

Conclusions

The project objective was achieved as the Iron Curtain game got completed. The collaboration between the software developer and visual designer students resulted in an all-round quality Android game.

Project

Authors: Joona Väänänen, Lauri Aunio, Tero Nikula, Laura Tikkanen, Joona Hautala

Date of publication: 2018, Spring

Instructor: Eino Niemi, Raija Westerlund, Karoliina Niemelä