



Bilkent University

Department of Computer Engineering

CS 319- Object-Oriented Software Engineering

System Design Report

Project: War of Domination

Group 1-H

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1. Introduction

The main goal of the first iteration was to establish the basic mechanisms of the game. As stated in the design report the project is implemented using Java slick library. The first task to be tackled by the group was to familiarise ourselves with the slick libraries. This was done with the aid of online tutorials.

In the implementation, firstly, the main menu was setup. The task here was to make sure that all the buttons were functional.

Next, the map was created, with the support of a third party software called *Tiled Map*. Currently the map is not very detailed. A basic map was created to test all the object collisions. The map contains obstacles with restrict movement of the character and the bullets.

The character class was created and finalized to support the character animation and movement. Currently the map will only hold one character. Later on more characters will be added to support team play. The character was given bullets to shoot, the shooting can be done by point the cursor in the direction one wants to shoot and clicking. Last but not least, collisions between map and character was handled.

The settings menu was also created and all the necessary buttons were added to it. The functionality of the buttons is partly added, this will be handled in the next iteration.

2. Design Changes

As this is still the first iteration not all of the functionalities of the game are implemented. However some design changes were still made:

- ❑ Removed the MapView class in the UI subsystem and combined its functionality with the GameView class
- ❑ Removed ActionListener, MouseListener and KeyboardListener interfaces from the UI subsystem because their functionality was already provided in the Slick library.
- ❑ Removed Bush, Road and Water classes from the Model subsystem and converted them into a single enumeration class.

3. Lessons Learnt

This project has been very educational for the team. As computers scientists and engineers we have experienced first hand the importance of project management.

- This undertaking required time management in order to meet deadlines. The difficulty here was to setup meeting times where all members of the team are available. We realized mid way that for a meeting to be efficient the meeting tasks should be preplanned.
- The project experience highlighted the importance of communication in the group, as sometimes the information provided by one member was misunderstood by the other members.

- UML diagrams were a big help in the project, as we realized that a properly made diagram made the task of implementation easy. The UMLs also aided in communication.
- We also learned how to document the project, with analysis, design and implementation reports. These reports were very helpful as they were referred to whenever a complication arose, for example: what is the association between two classes?

4. Task Distribution

The project implementation task distribution was done as follows:

- Akant Atılgan: Responsible for implementing the Control subsystem
- Kazım Ayberk Tecimer: Responsible for implementing the UI subsystem and also part of the Control subsystem
- Unas Sikandar Butt: Responsible for implementing the Model subsystem

4. User's Guide

4.1 System Requirements

Survival in Bilkent is a Java based game. For this reason, Java Run Environment should be present and installed to the computer in order to start the game. Java runtime environment. More, Windows XP, 256 MB of Ram is required where as 1 GB ram and Windows 10 is highly recommended to have smooth game pleasure.

4.2 Installation

The game will not require any kind of installation. The game will be able to run via .jar file. This file can be copied and distributed. This .jar file will be created using the eclipse IDE export project function.

4.3 How to Play

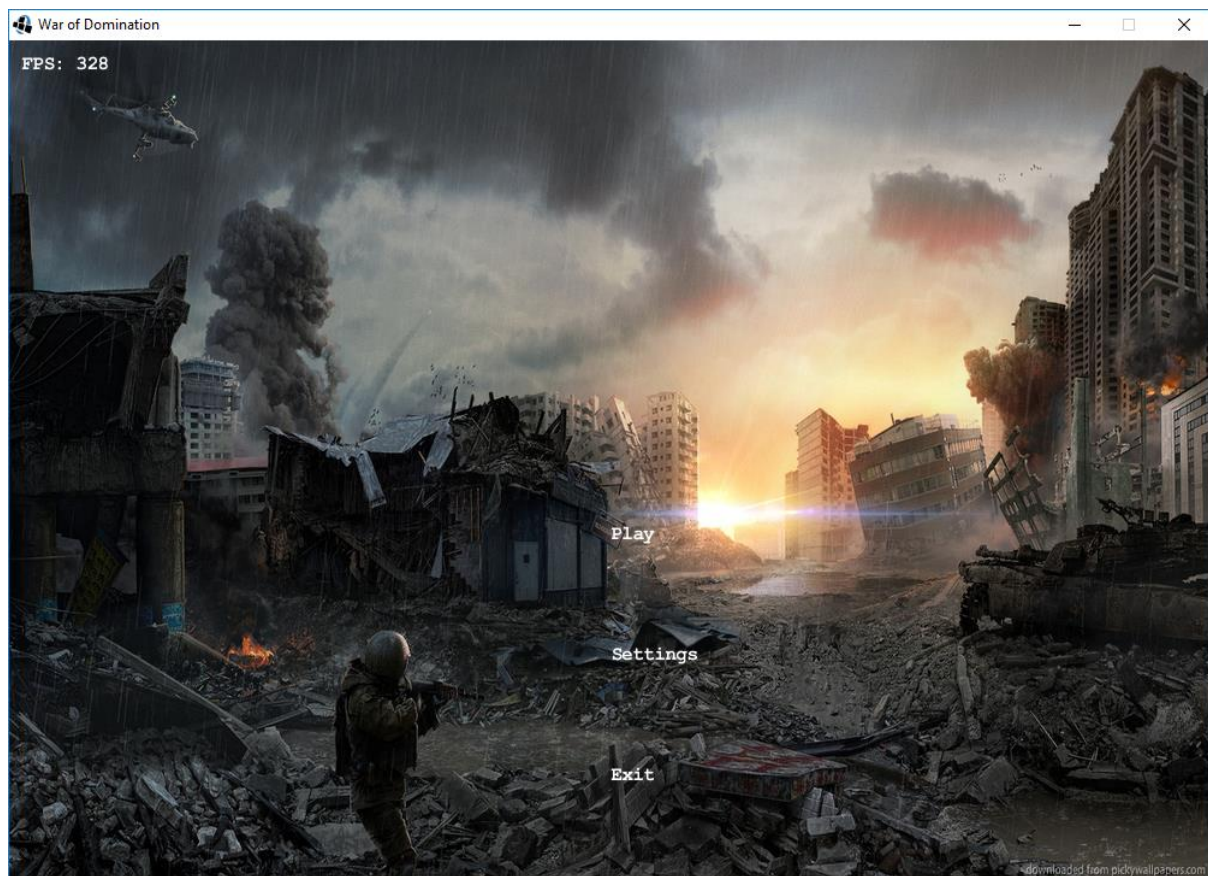


Figure 1: Main Menu

As the game is started the user is greeted by a Main Menu screen. This menu contains 3 buttons: Play, Settings and Exit. The User can use the arrow keys or the mouse to navigate through the Main Menu options.

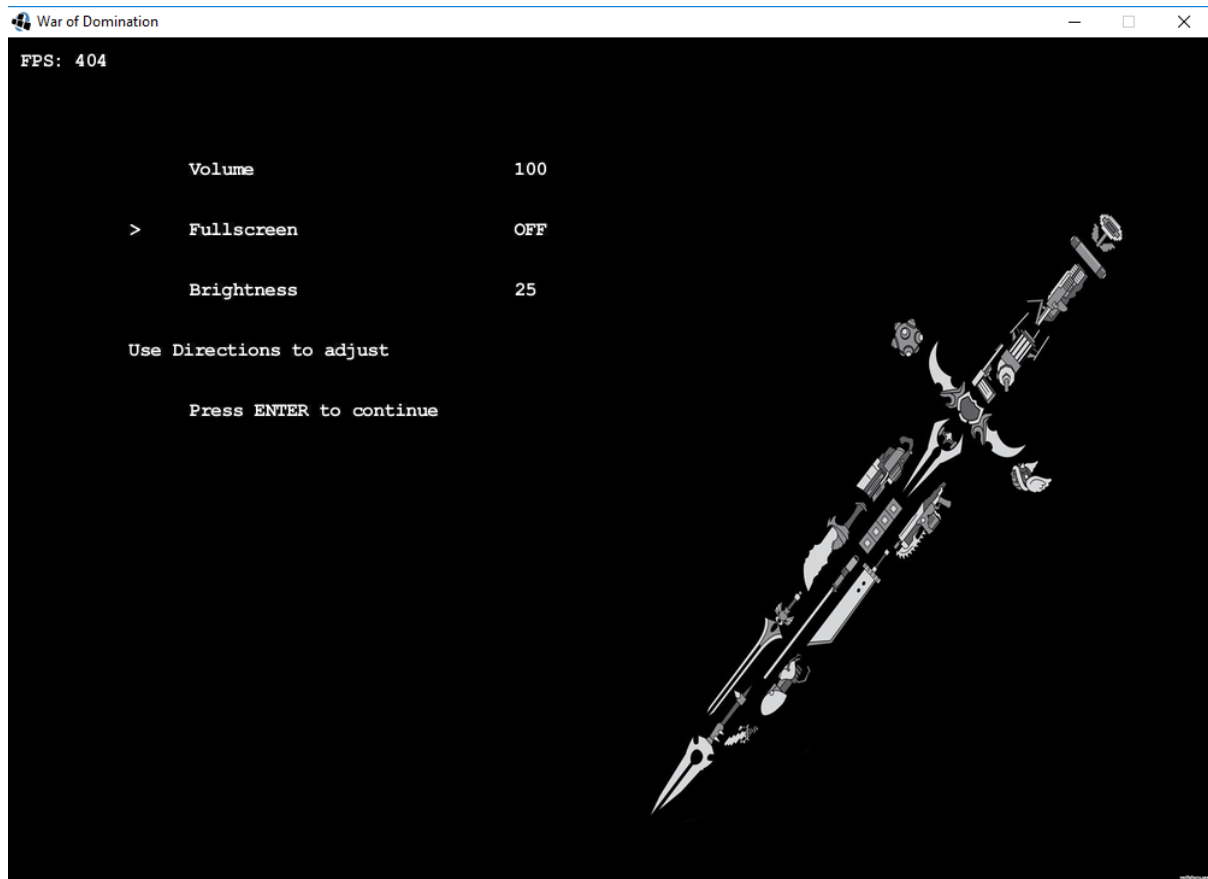


Figure 2: Settings Menu

Settings Menu appears when the user selects the Settings button from the Main Menu. Here the user will be able to adjust volume, screen brightness and screen size. The up and down arrow keys will be used to switch between different settings and the left and right arrow keys will be used to adjust a particular setting.



Figure 3: Game Play

When the user selects the Play button from the Main Menu the game will start. The Player will see his character on the map wearing a red hat. The map will consist of green areas which will allow the character unrestricted movement, and the map will have gray blocks which will act as obstacles for the player.

The player will be able to move his character using the arrow keys. Right mouse click will be used to shoot. When the mouse is clicked the character will shoot a

bullet in the direction of the mouse cursor. These bullets are visualized by small black squares.

The user will be able to exit the game by selecting the Exit button from the Main Menu. Alternatively the game can be closed by clicking the cross button on the corner of the game window.

5. References

Tiled Map editor: <http://www.mapeditor.org/>

Slick library documentation: <http://slick.ninjacave.com/>