Department of Computer Engineering

Bilkent University

Object Oriented Software Engineering Project

CS319 Project Group 1G: Super Mario Bros.

Final Report

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Progress/ Iteration 1.

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1   Introduction

Super Mario is a classic game known to almost every person from the '90s. The main purpose of the system is to provide a similar game, with minor changes. The game can be classified as an adventure and level based game. Comparing to current standards of gaming, our system may be lacking in the graphics and complexity departments, nonetheless the game will provide a challenging gameplay which is addictive and really enjoyable. The difficulty level of the game is intentionally going to be kept hard so that the game can become a platform for gamers to compete on.

2   System Requirements and Installation

This game will require no installation. As game has been developed in a java environment, it will be distributed as a java archive (.jar) file. Thus the user will not have the hassle of going through installation wizards.

As for the system requirements, being a .jar file the system must have a compatible java environment. Also as for the hardware requirements, the game will run on any average machine, with a processor of around 1.5 Ghz and 1 GB of RAM. The game does not require a large amount of storage space on the hard disk, also it does not need a graphics processing unit (GPU) to function.

3 Major Changes to the Design

Most of the design remained same during the implementation. There was not any major design change, however there were changes due to mistakes made during design. We changed Prize abstract class into an interface. This gave us to freedom to move freely when implementing Brick and NonEmptyBrick classes. We changed UIManager class into JPanel child from JFrame due to easiness of drawing things onto JPanel. We removed Hero abstract class in first implementation because we did not get enough reward from its complexness. Although it can be brought back in second iteration in case of adding another Hero in the game.

4 User's Manual

Opening the game:

1. Navigate to the directory where the game is kept.

2. Run the Super Mario.jar file.

Starting a new game:

1. Navigate to the main Menu

2. Use arrow keys to select new game

3. Press Enter key

Select Level:

1. Navigate to the main menu.

2. Use arrow keys to select the Levels option

3. Press Enter key.

4. Use arrow keys to highlight the desired level

5. Press Enter key.

Turn on/off the sound

1. Navigate to the main menu.

2. Use arrow keys to highlight settings button.

3. Press enter key.

4. Use arrow keys to highlight the sound icon.

5. Press enter key to toggle sound on/off.

Looking at the configurations menu

- **While playing the game**

    1. Press the Pause key (ESC)

    2. Use arrow keys to highlight the configurations button.

    3. Press Enter key

- **From the main menu**

    1. Use arrow keys to highlight the configurations button

    2. Press Enter key

Exit the game

- **While playing the game**

    1. Press the Pause key (ESC)

    2. Use arrow keys to highlight Exit button

    3. Press enter to go to the main menu

    4. Follow the steps given below

- **From the main menu**

    1. Use arrow keys to highlight the Quit option

    2. Press Enter key.

5 Expected improvements

Graphics:

Comparing to the current standards of the gaming industry, our game is heavily lacking in the graphics department. Modern games today have splendid graphics as they use complex game engines to engineer their games. In the future we hope to increase the graphics quality of the game to make it seem more competent in the aesthetics department.

Game complexity:

In the future to make the game more complex and competitive we would like to add enemies and game modes in the game. For example one of the game modes we would like to add would be an endless runner kind of game mode where the user would have to keep going until death. We think that this game mode will make the game more competitive and appeal to games as they would want to put their name on the world leadership boards.

Score Leadership Boards:

We would like to implement leadership boards where all the players of the game would be able to see other peoples score and their rank in the world. This would require an internet connection, so that the game could fetch other players' score.

6 References

To find out more about the original super mario game follow this link:

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiC1ayh5qXXAhXEHpoKHaGkDsoQFggnMAA&url=https%3A%2F%2Fwww.mariowiki.com%2F&usg=AOvVaw118448ODQDiYuls7nGlnVy

To access the GitHub repository for this project follow this link:

https://github.com/CS319-Group1G/1G.Super-Mario-Bros