

The Spelling Game

CS-170-01

Professor GAO

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Abstract

This project was important for our group as it taught us deeply about Java. During the first meeting we got together and brainstormed many ideas for the project. We finally decided to settle on the spelling game. We started working on the game and writing the code.

We divided ourselves to different parts of the code. Zhexian worked on the GameFrame.Java and the GUI design. Jose and Moksh worked on the Player.Java, TextReader.Java and TextWriter.Java classes. Nicholas worked on the audio for the whole game.

Objective

The objective of this project was to create a friendly and educational game for the kids as well as learn important techniques to use in the Java environment.

Meeting Logs

Meeting 1 November 05 2019

Brainstorming for the project, discussing different game ideas. We finally decided to set on the idea of a spelling game because it is educational as well as fun for the kids.

Meeting 2 November 10 2019 This meeting was brief. We divided the workload among ourselves and decided a date to present the rough code for the project.

Meeting 3 November 17 2019

During this meeting we decided to draw outlines for the classes that we will use in the code. This helped us to visualize our code and we started writing down the logic.

Meeting 4 November 22 2019

This meeting we started coding the GameFrame class and the player class. It took us a few days to write the GameFrame.java class.

Meeting 5 November 30 2019

This was the final meeting. During this meeting we went through the final design and the code for the game. Doing many test runs before we finalize the code for submission. There were some errors but, nothing major. Luckily, we did not find any bugs in the code.

TextReader.Java

Function

This method helps in picking up the letters chosen by the player. With the help of Linked Lists, it helps to stack different strings and character in the code. This enters the letter in a stack and then check for the spelling and compares it with the spelling of the image. So, if the players clicks on the wrong button, this class throws an error along with an IOException.

TextWriter.Java

Function

This class uses Exception to help in finding out the error in the input of the player. For example if the player input the wrong alphabet, this class helps in detecting if they entered the correct alphabet or wrong.

GameFrame.Java

Function

This file sets up all the components in the app. It extends JFrame and uses components like button, textFields and JLabels. This class defines the whole structure of the game like the display output and the various buttons. It has many private attributes that are essential for the game. This file also turns on and off the background music in the game. This class handles all the layout type in the code, the button selection and it implements the ActionListener. The ActionListener helps in all the input which comes in from the button.

Player.Java

Function

This file sets up the profile of the player. This class handles all the getters and the setters of the game. Setting up the player name and the score to each player that plays it. This class also uses the toString() method to display the player name.

Validator.Java

Function

This class helps in validating the name of the player. If the player name is wrong or not written with the accepted characters, it will throw exceptions like `StringIndexOutOfBoundsException` or `IncompatibleClassChangeError`. These exceptions give the player certain bounds in which the player name can be written in. These bounds are the name should be only 3 letters and it cannot be empty.

SpellGame.Java

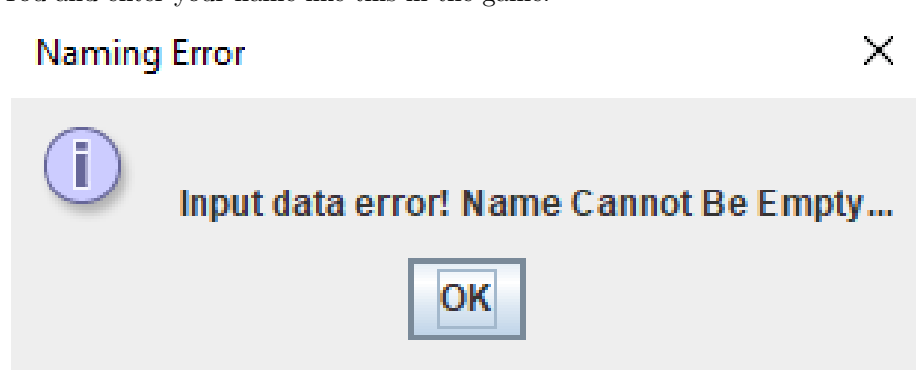
Function

This file holds the Main method for the whole and game is responsible to run and execute every method in the code. This method creates the frame and different buttons for the game. This sets the window to visible and calls the object for `GameFrame.java`.

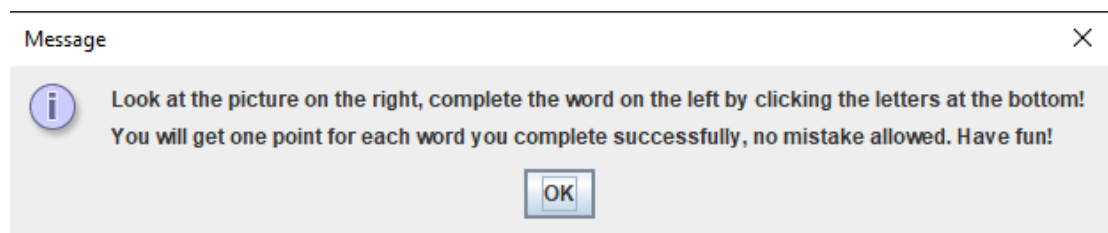
Screenshots of the Game



You and enter your name like this in the game.



If you enter the name wrong or not correctly, you will get an error like this.



A small description of the game shows up.

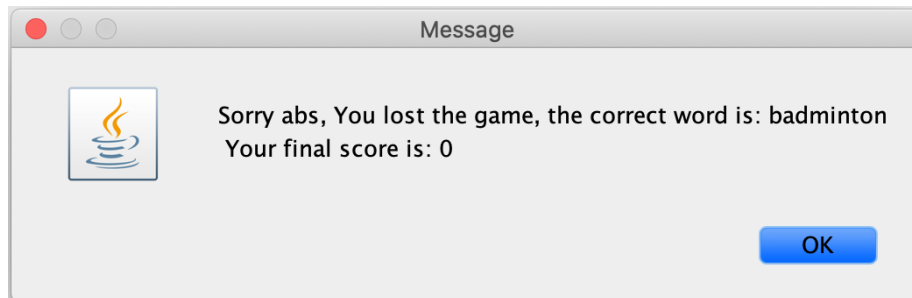
This is how the game looks like.



When you win the game you get a pop up message like this.



If you lose, you get a message like this.



The Score board looks like this

