The Number Game

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Java Project

Professor Gao

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Overview

When we were first assigned this project, we were extremely concerned about whether we would be able to agree on what to do for this project. However, after the first meeting, it became clear to us that we work well as a team and have successfully been able to bring to life this game that will help first graders differentiate numbers, as it is part of their mathematics curriculum. Sheharyar Alam Khan worked on the Gameplay.java class and played a quintessential role in coming up with the algorithms that are required for this game to work. Additionally, he also implemented the sound effects and animations for the game. Anjali Patel was responsible for creating the buttons that are required for the game and worked to not only design but also implement the buttons. Hence, she worked on the MathButton and AnswerButton java classes. Nishant Patel worked alongside Anjali to implement the buttons into the game, as it was a lengthy process and required a lot of the time. Sahil Rikhi and Nishant also worked together on the Gameplay class. This was responsible for the creating the stages that were necessary for the implementation and it allowed for the proper function of the game. Mansi Chudasama worked alongside Sheharyar to implement the MainMenu app as it implements all the work done by the rest of the group. Additionally, Mansi played an integral role in coming up with the app design and creating the background. Lastly, Sahil and Anjali worked on the validator class. Lastly, Sheharyar oversaw the entire process, making sure that each member of the group knew exactly what was expected of them and their responsibilities. He guided each member of the group and led us to create a successful app.

Meeting Logs: Team Project

Meeting 1: 04/26/19

Meeting Location: Newark Campus in CNET Lab

Meeting Agenda: Project Brainstorm

We met for about two hours at Newark Campus in the CNET lab to discuss on what and how we will be doing the project. We also discussed our project layout and how we want our project to look like. We also assigned each member the role they have in the project. We decided to call our game 'The Number Game'.

Meeting 2: 05/02/19

Meeting Location: Newark Campus LRC - Study Room

Meeting Agenda: Coding for Project

We met in the Newark Campus in that meeting we started our coding based on how we divided each and everyone's part in the project. We started working on our backend part of the project. Which was making separate classes for different parts of the game which was related to math. Whatever there was left to do in backend part of the project we decided to do it at home.

Meeting 3: 05/09/19

Meeting Location: Newark Campus LRC - Study Room

Meeting Agenda: Implementation of Design and Music in Project

In this meeting, we had our designs and graphics ready for our app layout. So we implemented our designs, music, button, and other necessary design related materials to our program. We planned to design our app/game which would attract the kids to play it, and have the type of music the kids would enjoy especially during playing games. So, in this meeting we mostly worked on the frontend part of the lab.

Meeting 4: 05/14/19

Meeting Location: Newark Center LRC - Study Room

Meeting Agenda: Final Touch Up

In this meeting, we wanted to make sure that our app/game was working the way we wanted it to work for everyone. We did final touch up on our project, and commenting for the parts that we had left to do for commenting. We made sure that there were no glitches in our game and all the functions and classes were working.

Class Descriptions

Main.java

This file is responsible for creating the media for the project. It creates the menu that will be used by the user and it will also launch the actual game. It will be interactive so the student can input their player name. The createMediaPlayer function will create a new media object. The start function will actually start the game. The main functions only purpose is the launch of the game.

Validator.java

This class is responsible for validating the string inputs for the player name. If there is invalid input, it will catch the exception and perform the necessary processes.

AnswerButton.java

This java file is responsible for some of the buttons that will be used in this program. Some the buttons that will be used in this program are the start, score, and continue buttons as well as the buttons that the user must select for the game. This class is also responsible for many of the essential display conditions and program display. It will set the fonts, set the format (font size, width, etc.). With this, we can create a good looking app with buttons that correctly work.

MathButton.java

This java class is responsible for the Buttons for the actual game. The previous button class, AnswerButton was responsible for all the buttons except for the buttons that are responsible for the actual gameplay. This game will ask the user to select the larger of two numbers, allowing for an infinite number of questions. Because of this, we need to buttons that will display two different numbers and the user must select the bigger of the two. In order for this to work, the number buttons that are actually relevant to the math that 1st graders do in their curriculum and thus an extremely important component of this lab.

MathText.java

This class is important because it displays the math text on each of the math buttons. This is important because it is responsible of the font, height, and width that is displayed on left and right button. It will pass different parameters for each of these conditions and use them to create the right buttons and math texts.

MathSubScene.java

This is the class that controls the pop-ups for different scenes. It is used for the "popups" such as the correct and game over panes. For this, we need multiple functions that will work together to display the subscene at the right moments.

MainMenu.java

This function is the main menu for the entire game. It displays the right screen with the right media. This class is quintessential in the success of this app. It extends level. It also uses the buttons that were created in other classes. It is responsible for the home screen of the game that displays the start, scores buttons as well as the logo for the game, the background for the game, and every other component that is displayed on the home screen. Also, we use sorted maps and treemaps to implement the player and scores.

Level.java

This class is responsible for creating levels. Since there is one simple questions asked multiple times in this game, we still need different levels of scenes to display the information.

Gameplay.java

This class is a class that extends Level and is responsible for create the path and the random numbers for the game. It will create many protected and private attributes that we are using in the functions.

Screenshots of the Project

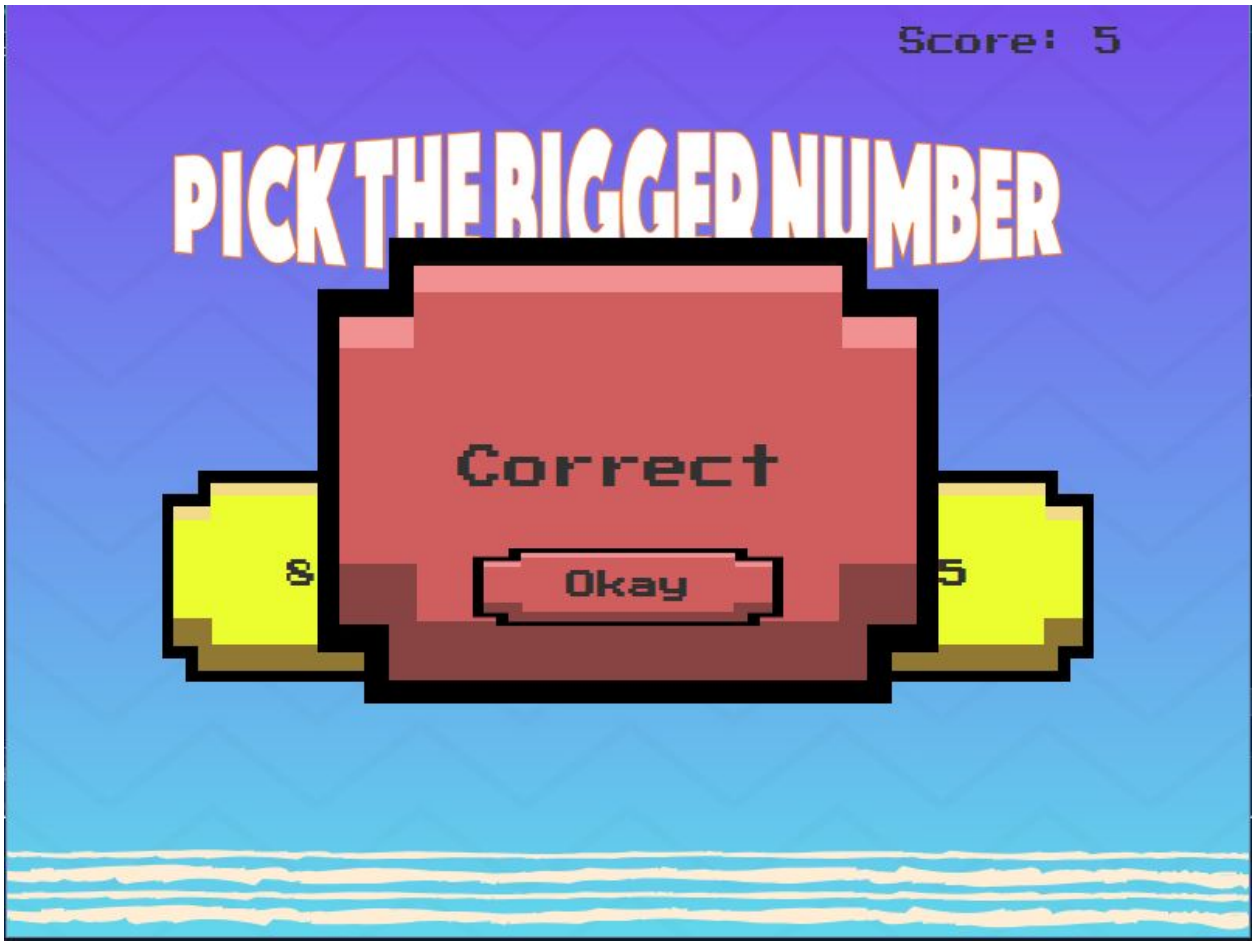
This test case represents the main menu. When the user executes the program it will show the user this main menu. Then the user will insert their name in the text box inputting the player name. Once the user inputs their name, then they have two options/button they can select and move on. They can either press the start button which will take the user to the game. If they

select scores it will show them the scores if they are available.

This test case will show the user the scores of top five players who played the game. If the user played the game with many different players, then when the user goes to main menu and selects scores, it will show them the scores for top five players. But if no one played and if the user selects scores, then it will be empty as no user input has been entered.

The user is given two options, and is directed to select the larger number of the two that are shown. When the user hovers over an option, the color changes to signify to the user that it is selectable. The visual cue of the button changing color is user friendly, and is a feature used in many popular web browsers, therefore allowing for familiarity and smooth transitions.

When the correct option/number is chosen, a message is displayed. In text box, either “correct” or “incorrect” is displayed, depending on whether on not the answer chosen was the right answer. Once the user pressed ‘Okay’, the next two options appear on screen, and the game continues.



This test case will show the game over sign which will also give them their scores. The user will get game over sign when the user selects wrong answer or the smaller number from the options given.

Bugs

There are some bugs in the runnable jar file including:

- The background music does not play
- The scores are not displayed

All of these bugs are not present when you run the code from eclipse. To run the code, you need to install JavaFx in eclipse. To do this, go to help -> install new software and then search for the e(fx)clipse plug-in and install it. If you want, we can come to the class and show you that the code runs perfectly fine on Eclipse.