COMP1110 Assignment 2

Group Number :comp1110-ass2-thu15d

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Program Summary

- **Stage1: Program Design and Structure**

After many rounds discussions, we decided to create 2 classes and a Enum class to help deconstruct the whole game into parts for modularity when constructing the game.

- Spot: Indicates the position of on the board by columns and rows and has methods to determine whether it's an exit or a center grid.

- Piece: An Enum that contains all the dice faces from A0-A5, B0-B2, S0-S5 with properties of its four orientations and center (railway, highway, station, or surpass)

- Tile: Contains the properties of the tile on the board. It has a piece variable, a spot variable, the tile's orientation as well as its properties. It also contains properties relating to the class that helps us in our methods.

Program Summary

- **Stage2: Game Logic**

All of the Game Logic is within the RailroadInk class and is used to implement the rules and logic of the game.

- Task2&3: Determine if a Tile Placement String or a Board String is well formed
- Task5: Determines if two tile placement strings are valid neighbours
- Task6: Determine whether the given placement sequence is valid
- Task7: Generates dice roll for a round
- Task8: Calculate the basic score given a Board String
- Task10: Generate random legal move given a dice roll for a round
- Task12: Calculate the advanced score given a Board String
- Task13: Integrate a more advanced computer opponent

Program Summary

- **Stage3: Visualization, JavaFX**

We completed all tasks related to JavaFX and implemented some additional features which will be reviewed in later slides.

- Task4: Implement a Board String viewer
- Task9: Implement playable RailRoadInk Game for a single human player
- Task11: Allow players of the game to play against simple computer agent

Game Screen Shots

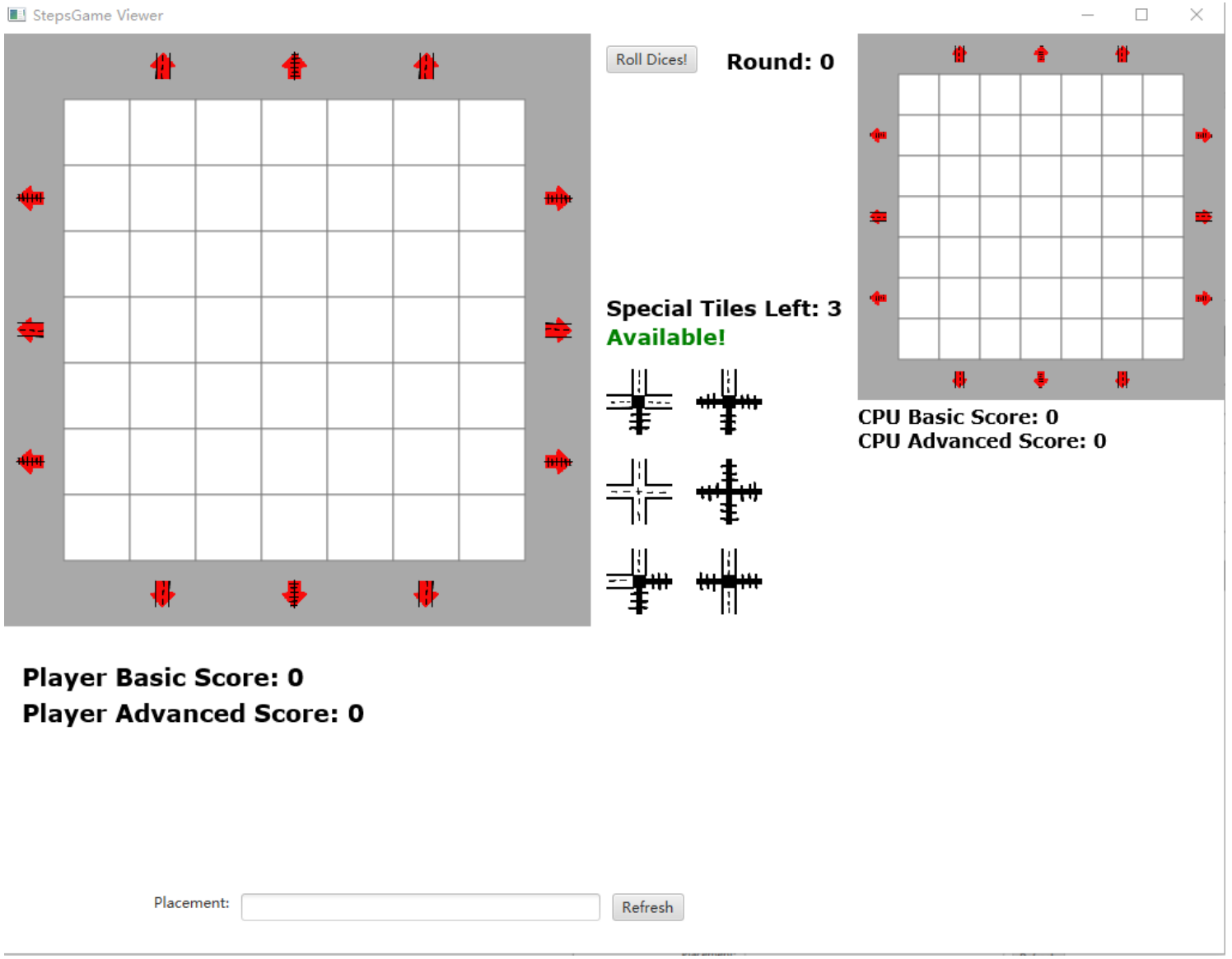
(1) Initialization

Features:

***Included real time basic score and advanced score for both player and computer**

*** Included a Round counter to show the current round of the game**

*** Implemented a Special Tile counter to show the number of Special Tiles Left for the whole game.**



Game Screen Shots

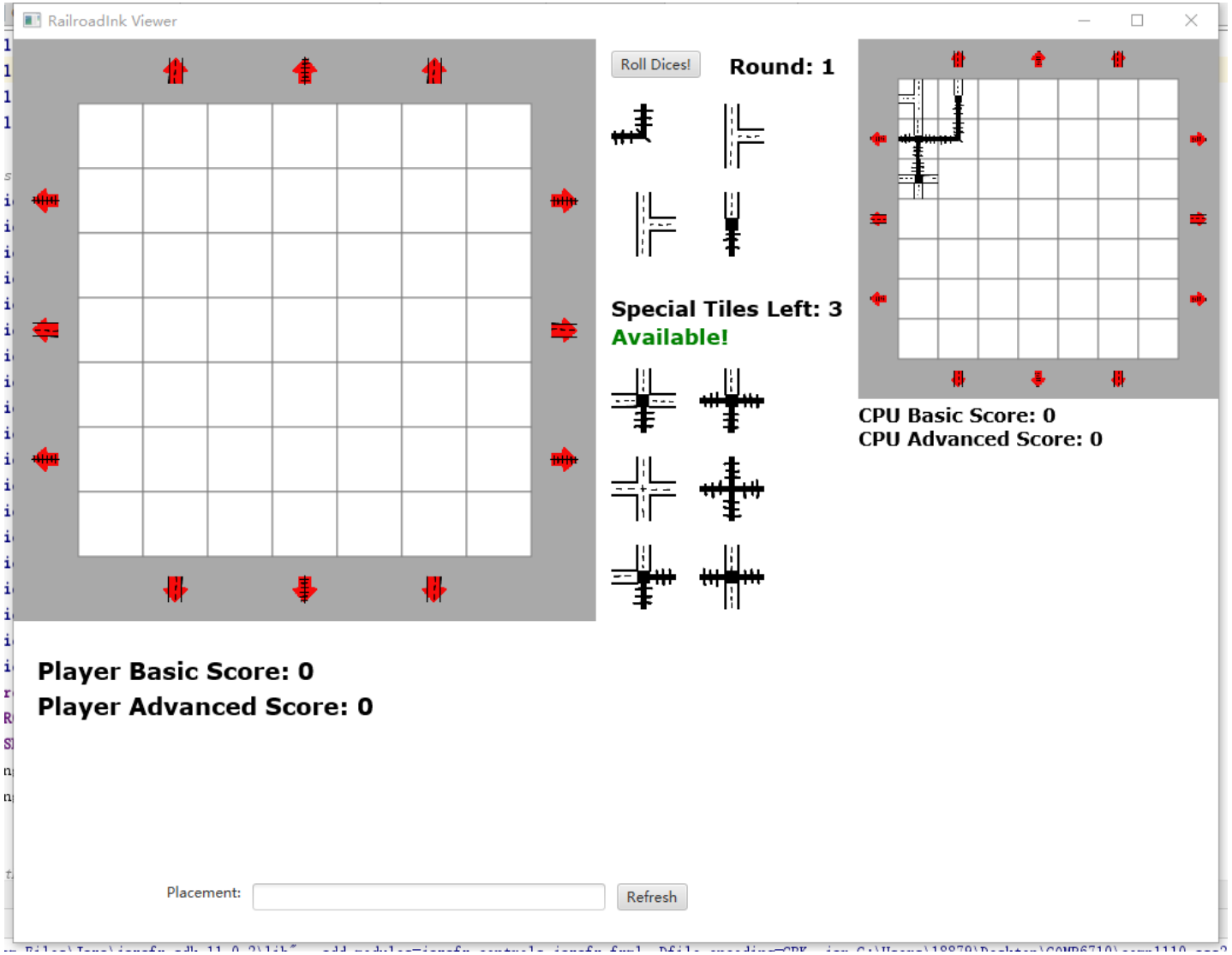
(2) Generate dices

Features:

***A button was implemented to generate placement tiles for the round on a click.**

***Prevents player from generating new dice rolls if all tiles for the round are not yet placed.**

***Allows up to only 7 dice rolls, as the game only consists of 7 rounds.**



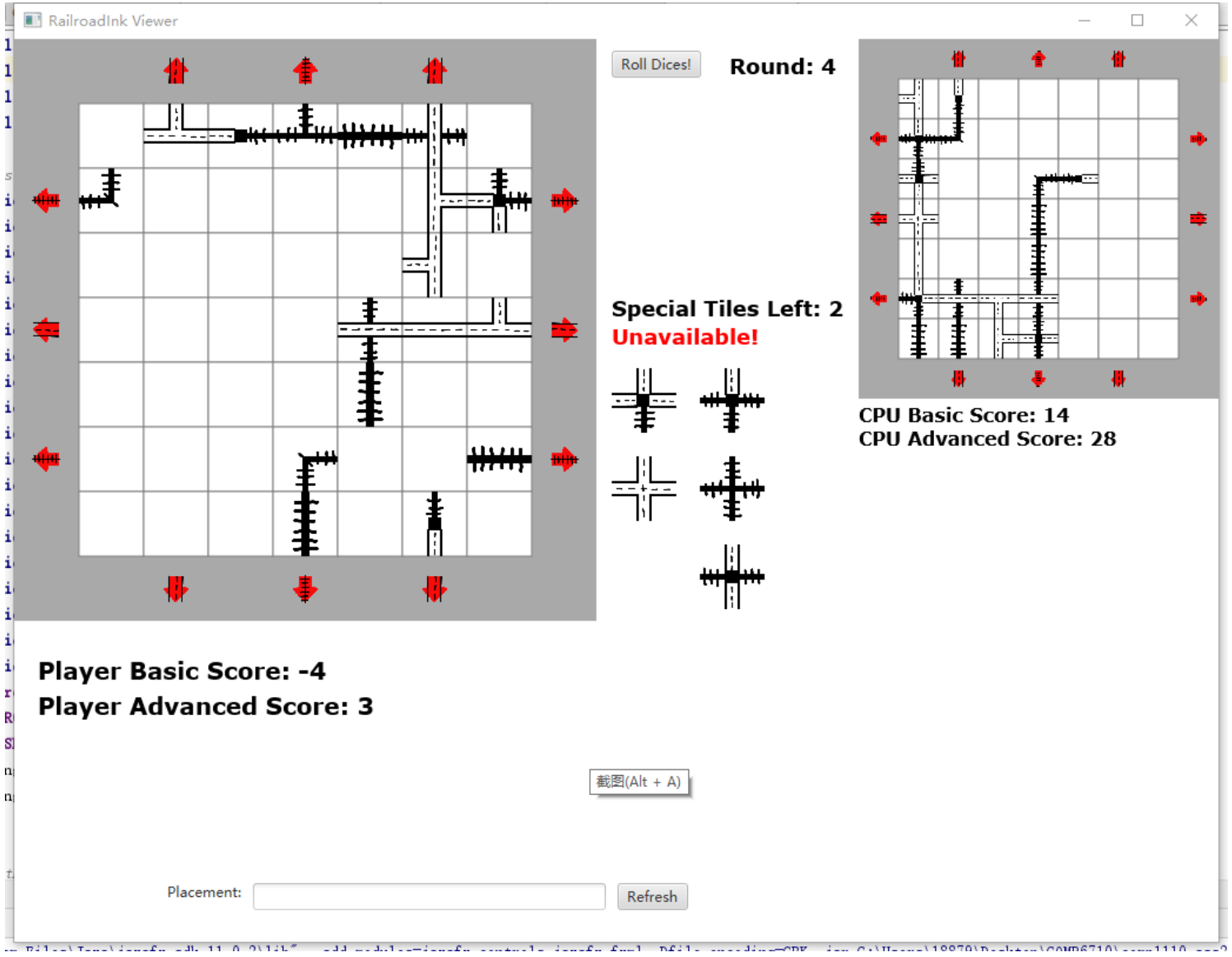
Game Screen Shots

(3)Place the Tiles

Features:

***Prevents a player from removing an already placed tile on the board**

*** Implemented a colored indicator to show the player if a special tile was used in the current round (Green Representing Available & Red representing Unavailable).**



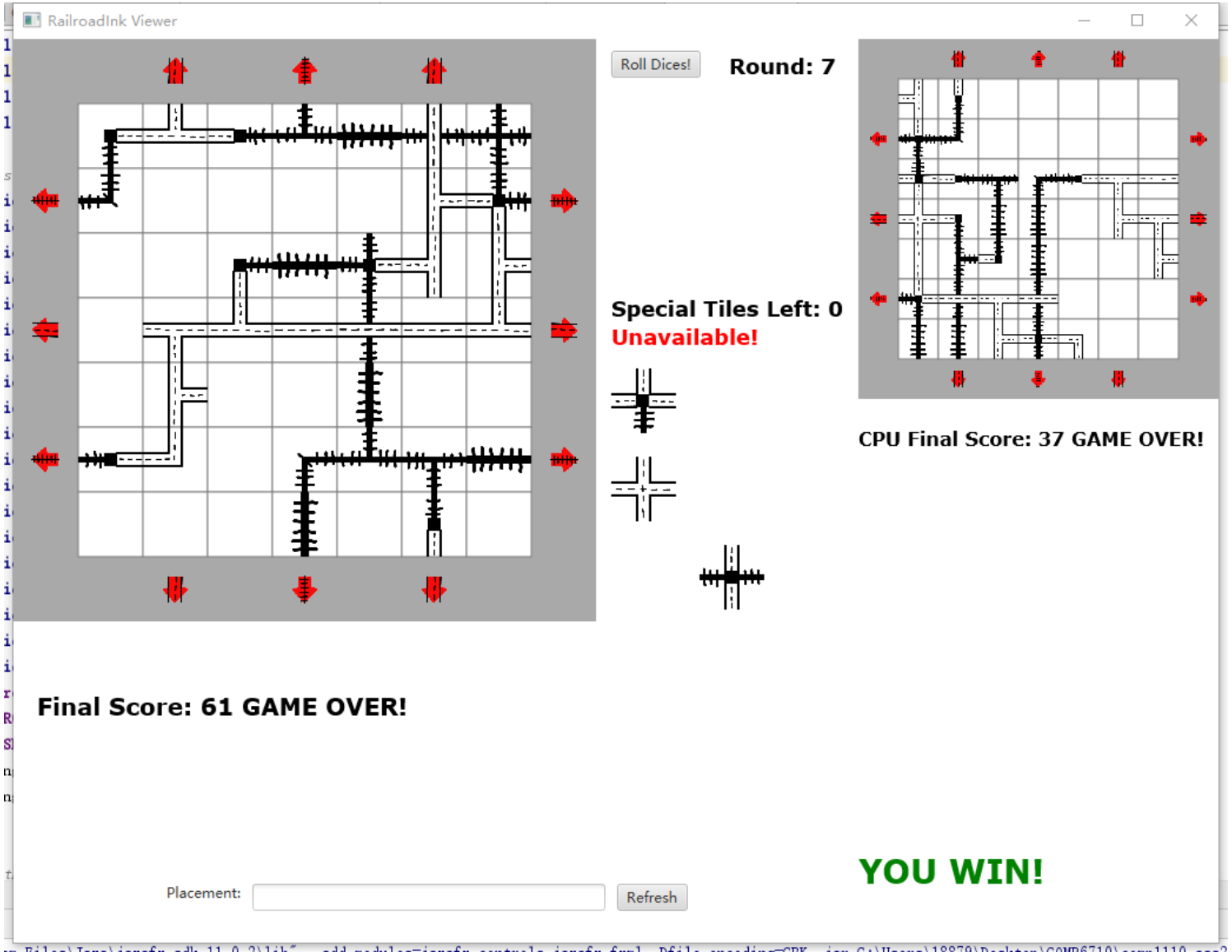
Game Screen Shots

(4) End Game

Features:

***Implemented a Game Over popup text and a colored win/lose/draw popup text**

***Implemented an advanced computer opponent (if we use random placement, we usually only get 15-20 score, but for our advanced CPU opponent, the average score is above 30)**



Thank you!