

Ishido

ARTIFICIAL INTELLIGENCE, PROJECT 2

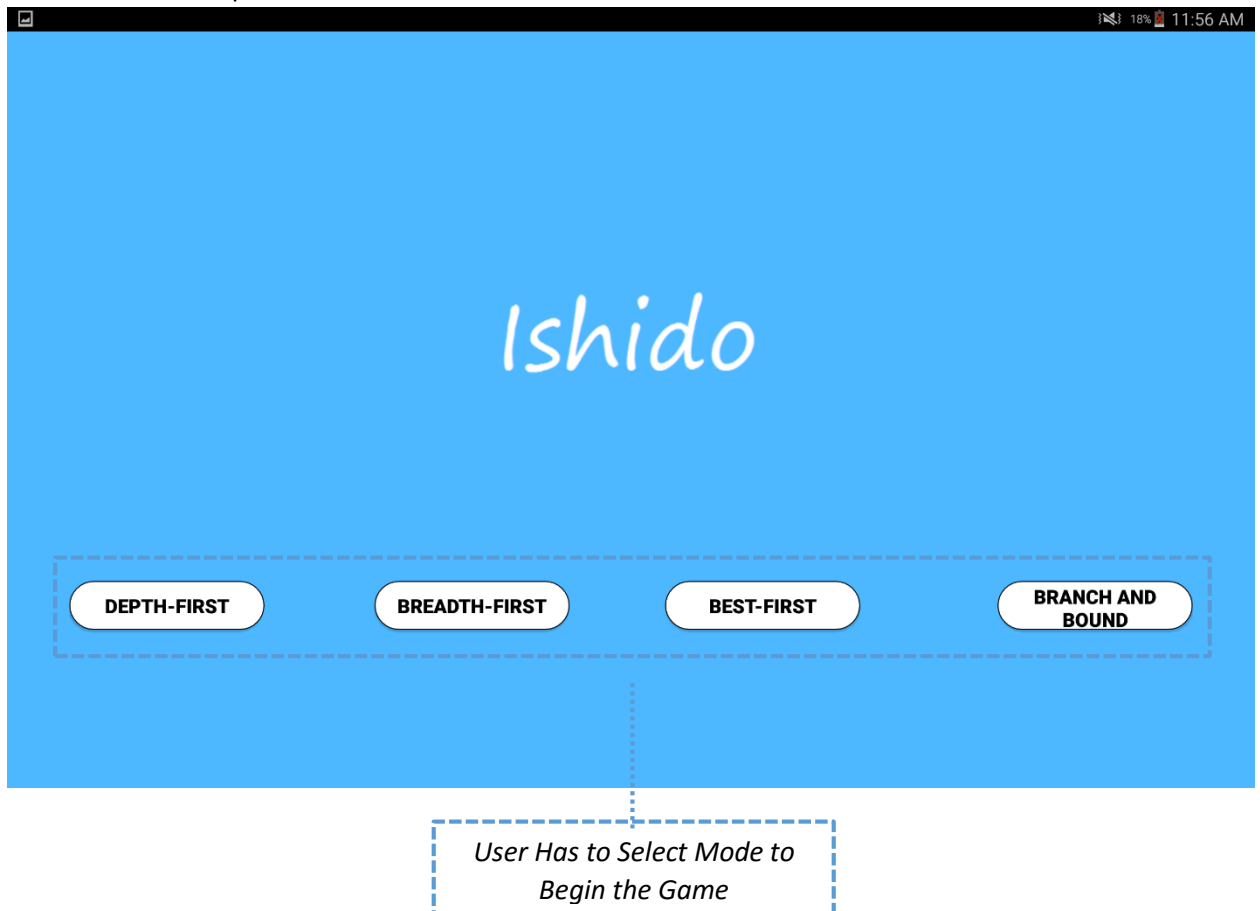
Arjun Bastola

RAMAPO COLLEGE OF NEW JERSEY |
COMPUTER SCIENCE DEPARTMENT

Activities:

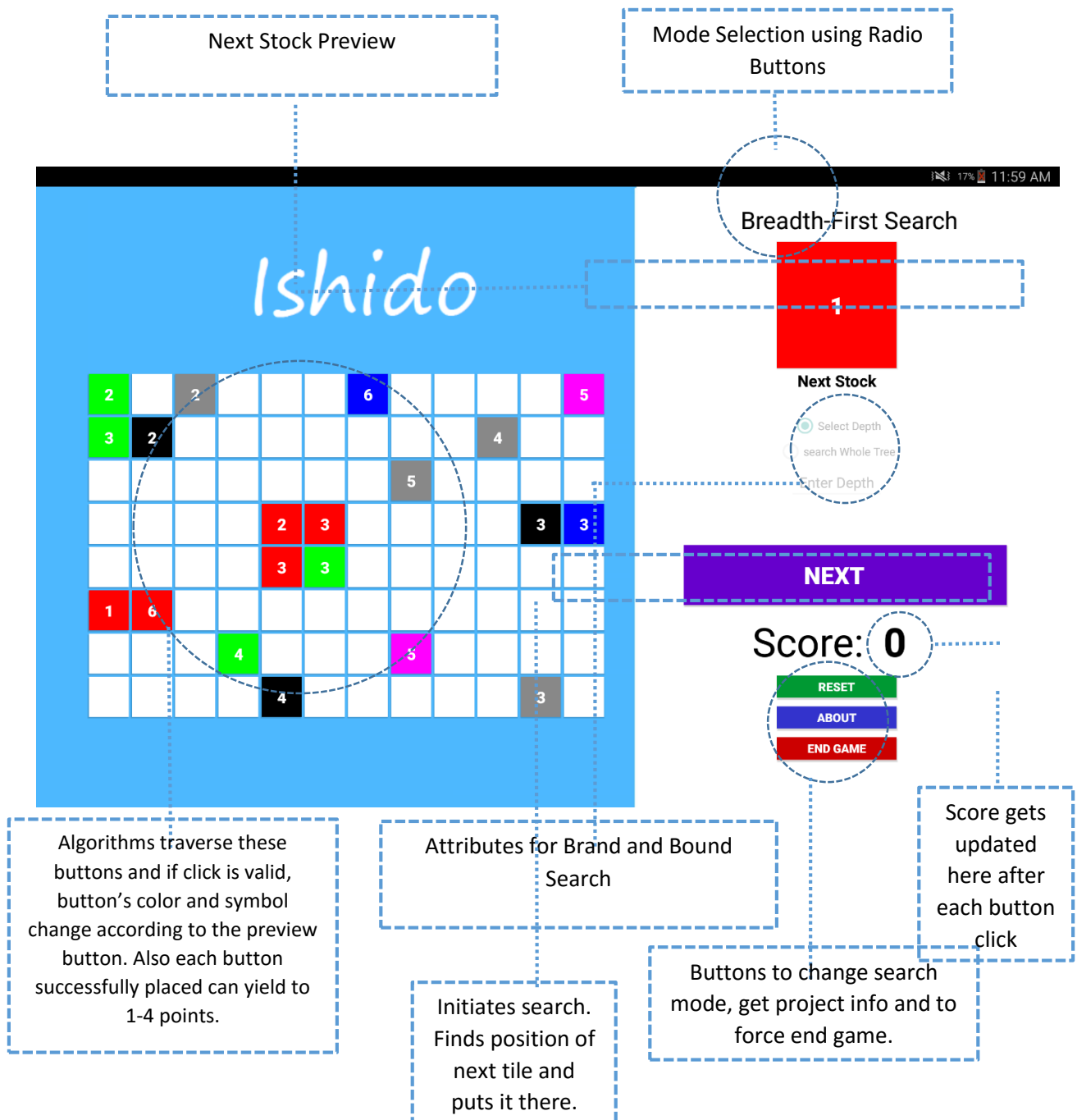
1. activity_main:

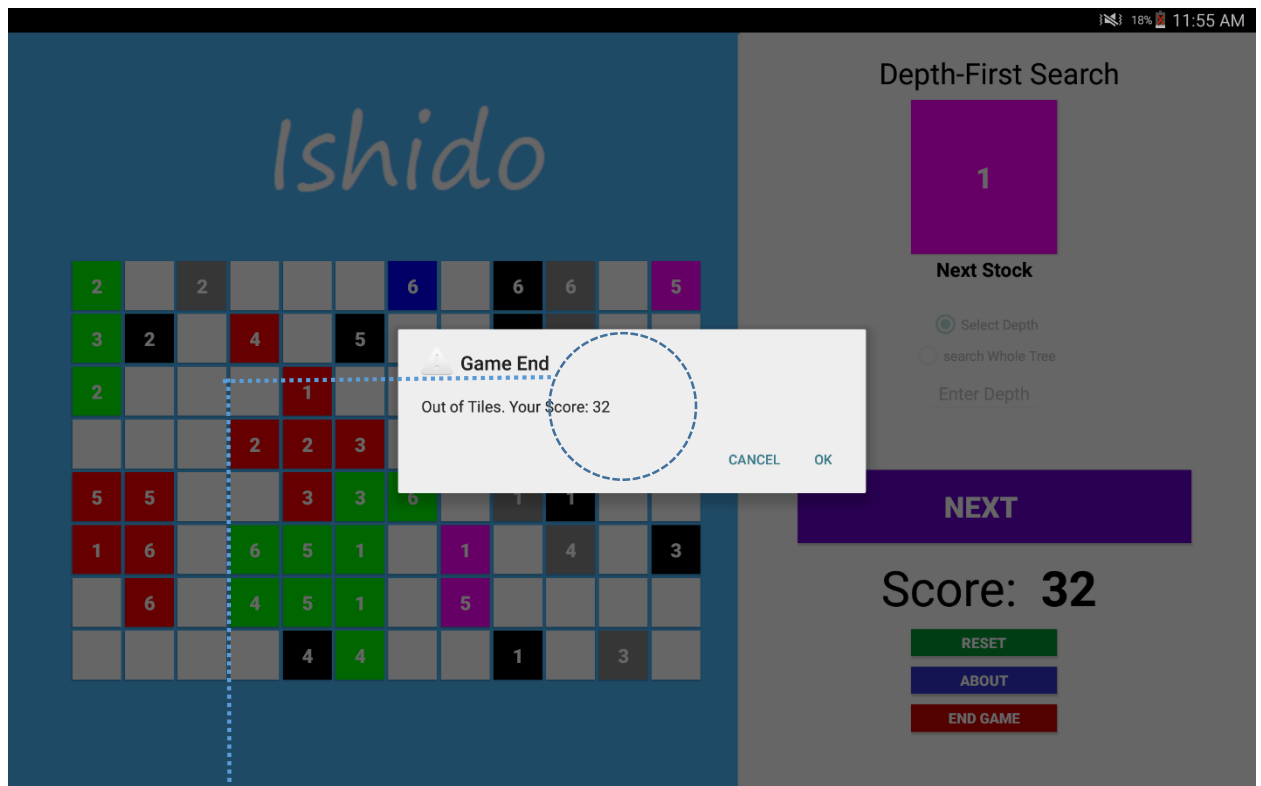
This activity has been used as a welcome screen for the app. The activity has the game logo and buttons that set up search mechanisms for each search.



2. activity_board

This activity has the most of the things and is the backbone of the app. Nested layouts have been used in this activity to place contents in right place. The screen has been divided to two vertical parts. First one has the board and second one has elements like radio buttons to select mode, drop down, score labels and generated tiles. Description of each elements can be found below.





When game ends, score is displayed here.

Fig: Layout of Depth First Search when game ends

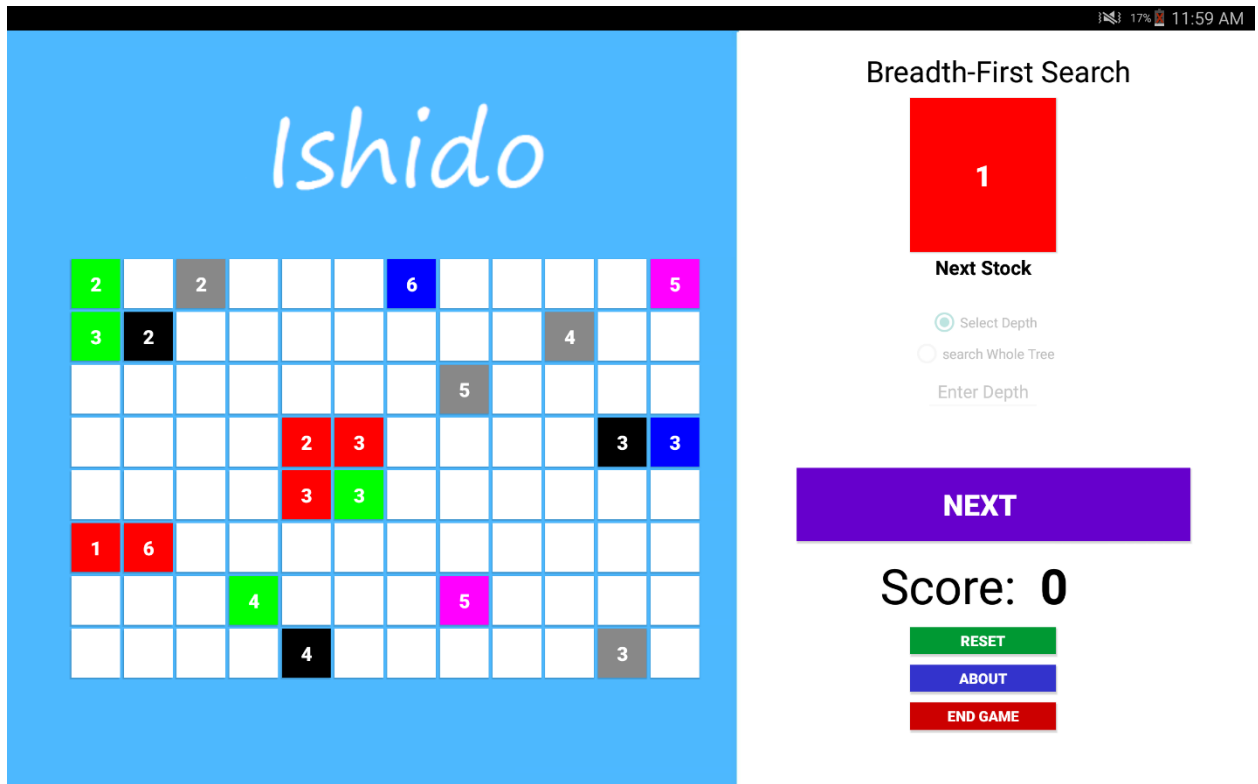


Fig: Layout of Breadth First Search

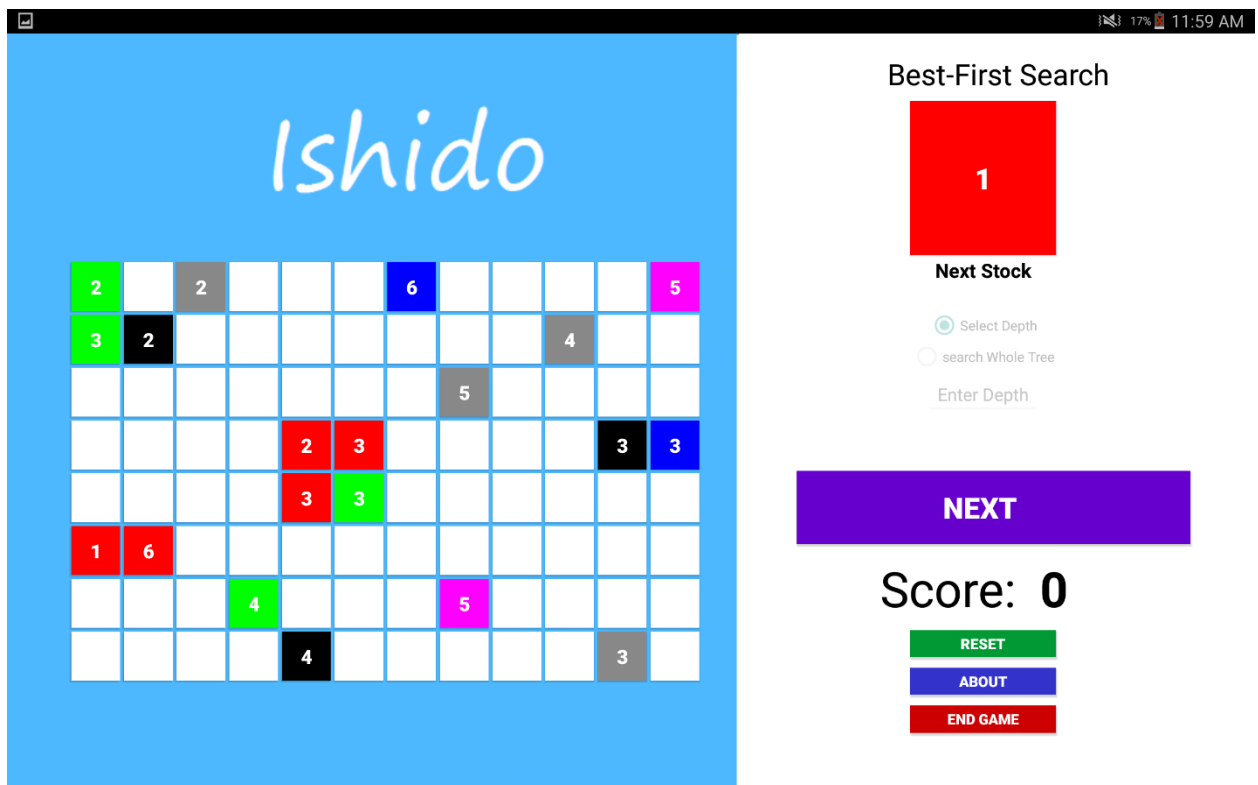


Fig: Layout of Best First Search

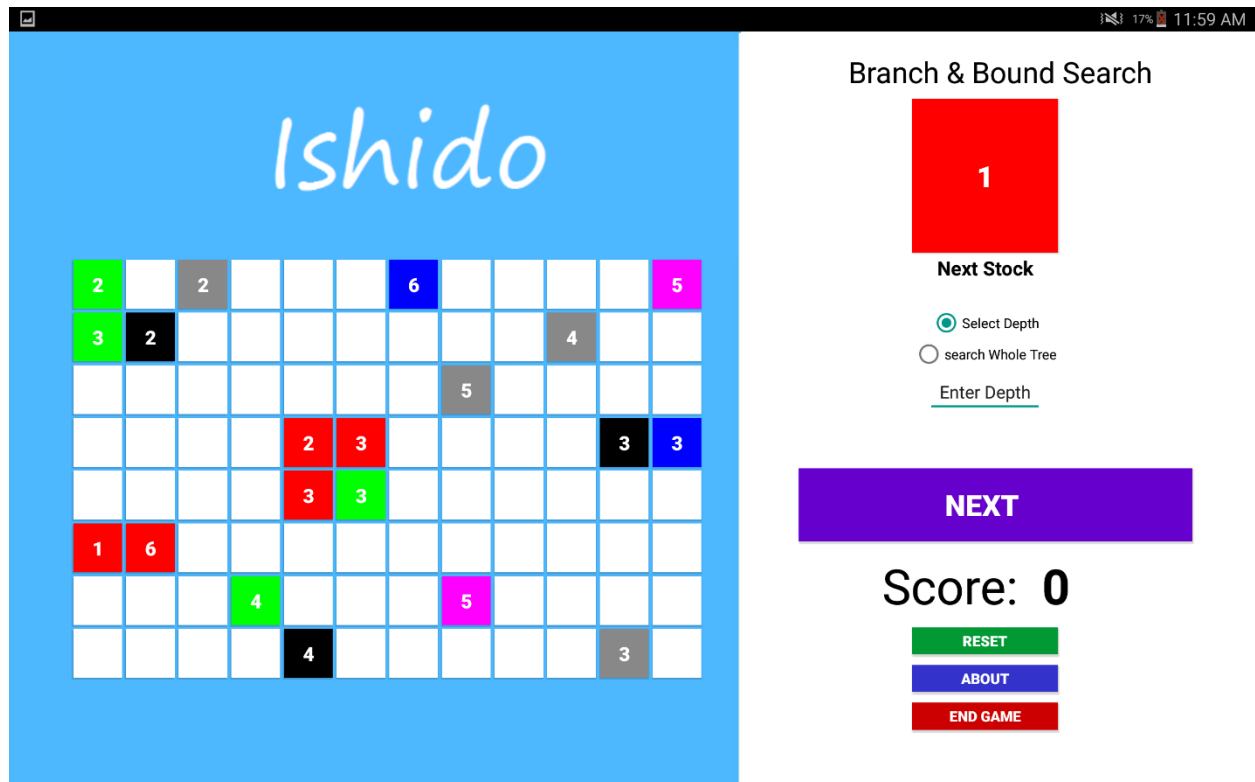


Fig: Layout of Branch and Bound

Classes/Java Files:

1. Mainactivity

- Handles onClick Intent and redirects user to board activity and initializes search algorithms based on user's mode selection.

2. Board

- Holds tiles as 2D array
- Changes the preview button according to next Stock.
- When user presses next, this class finds out next appropriate tile where the stock can be placed and puts it there.
- Blinks the tiles.
- Handles button click for end game, app info and change mode.
- Updates score accordingly to button placements.
- Ends the game if conditions are fulfilled.

3. Deck

- Holds stock's information
- Also has setters and getters for stock values.

4. Tiles

- Stores information about each tiles' like grid values, whether or not it is filled up.
- Stores tiles' color and symbol/shape of the tile
- Also has setters and getters to above mentioned variables

5. Player

- Holds player's score
- Has setter and getter for player's score.

6. State

- Gets state file from sdcard
- Reads the file and sets existing tiles' state, stock values and current score.
- Also has getters to above mentioned variables

7. MoveTile

- Holds the row and column of the made move in the board
- Holds tile combination of the move (symbol/string)
- Holds previous Move or Parent Move
- Also has getters to above mentioned variables

AI Algorithms used:

The following algorithms were initially used however folder override resulted to override of board class and all algorithms were lost.

1. Depth First Search
Used In: board class
2. Breadth First Search
Used In: board class
3. Best First Search
Used In: board class
4. Brand and Bound
Used In: board class

Bug Report:

1. Bug when changing mode.
 - Mode can't be changed within the program.
 - Program has to be restarted in order to Select new search mode.

Features:

1. Added: welcome Screen, toast Messages to inform users about events like button clicks, errors etc.

Log:

Date:	Work Completed	Time Spent
Wednesday, Feb 10, 2016	<ul style="list-style-type: none"> Completed the homescreen (activity_main.xml) Added 4 button modes. Set up mode functions for each AI algorithms (Not the actual algorithm but just some function redirect) 	1.5 Hours
Thursday, Feb 11, 2016	<ul style="list-style-type: none"> Set Up Layout Added Preview Button, Score Display Text, Next Button and Branch and Bound Attributes 	2.0 Hours
Saturday, Feb 13, 2016	<ul style="list-style-type: none"> Tried Setting up Tiles from stateFile Failed Wasn't able to access the file. Configured logcat to check where error was. Error was with permission to access sdcard. Fixed manifest and was able to access file. 	2.5 Hours
Tuesday, Feb 16, 2015	<ul style="list-style-type: none"> Worked on Depth First Search Created MoveTile class to trace moves along the node. 	4.0 Hours
Saturday, February 20, 2016	<ul style="list-style-type: none"> Implemented Depth First Search and Best First Search. Best First Search was just little modification of DFS. 	3.0 Hours
Sunday, February 21, 2016	<ul style="list-style-type: none"> Implemented Breadth First Search. Implemented Branch and Bound. Made Game End Alert Box 	4.0 Hours
Sunday, February 21, 2016	<ul style="list-style-type: none"> Finished documentation 	2.0 Hours
	Total Hours	19.0 Hours