COMP20050 – Software Engineering Project II

GAME INSTRUCTIONS

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GROUP 20

Game Instructions

Software Specifications: JDK20 | J-UNIT4 | JavaFX | SceneBuilder | CSS

Note: Game works fine when jar file is clicked or when run on IntelliJ, however some aspects of the game appear to be missing when running the jar file from command line.

Launching the Game

Download the jar file as submitted under assignments.

Playing the Game

After clicking the JAR file, a UI window would pop up. User has the option to play against 'computer' or play against 'player'.

- If play against 'computer' is chosen, atoms are placed randomly and experimenter view is shown to the user. The player plays the role of the **experimenter**.
- If play against 'player' is chosen, setter view is shown to the user. The idea is for one player to set the atoms and for another place to guess where the atoms have been placed. This option incorporates the idea of having both a **setter** and an **experimenter**.

The two roles are described below:

Role of Setter:

The setter begins the game round by placing atoms on the board. Atoms can be placed anywhere on the board by clicking a hexagon. If unhappy with the placement of the atoms, press the 'reset' button and all the atoms will be reset to their original position. When finished placing all 6 atoms, press the 'finish' button. This will switch the game view to the experimenter screen to allow the experimenter to guess the placement of the atoms.

Role of Experimenter:

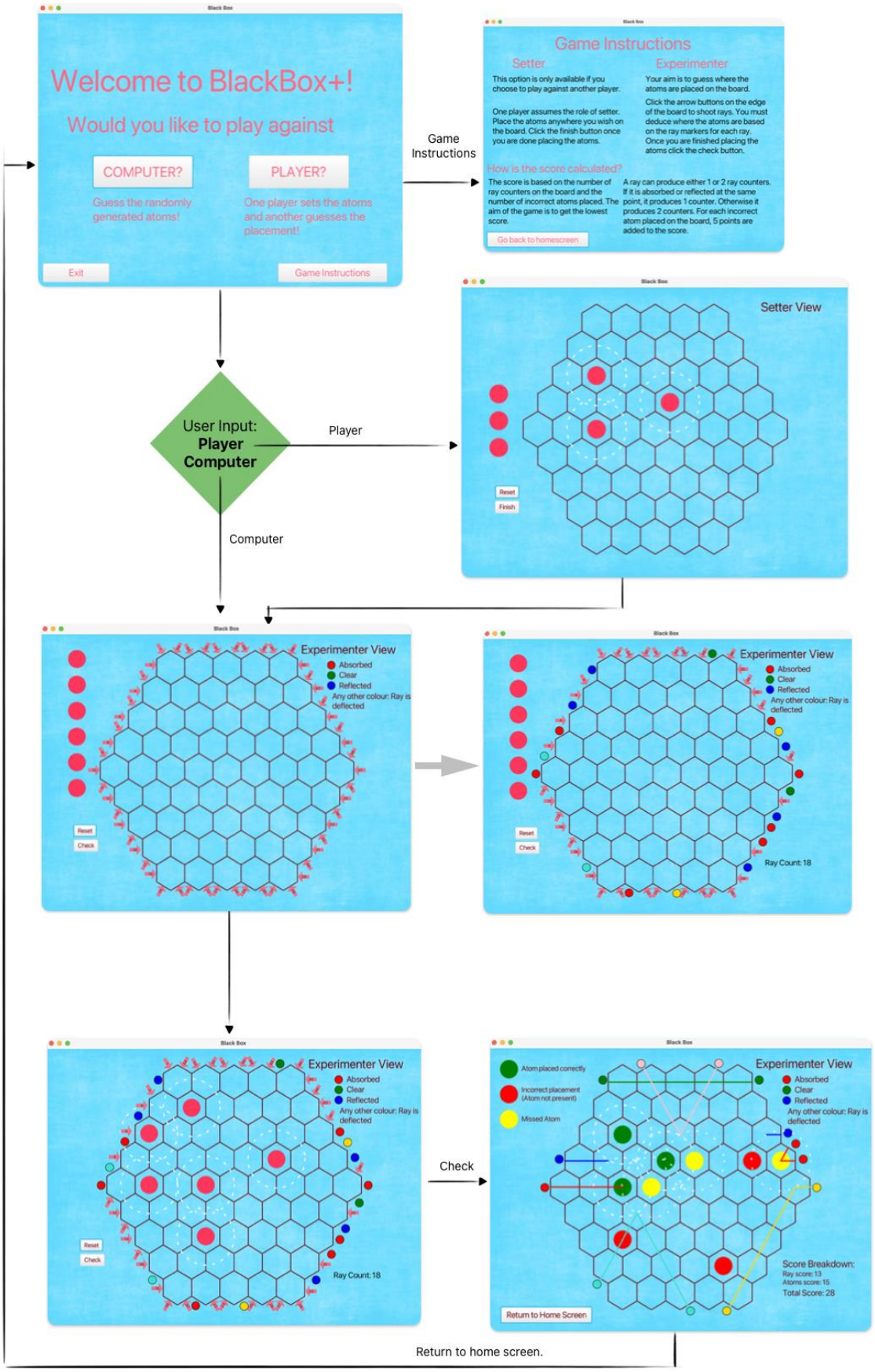
The experimenter's aim is to where the atoms have been placed. To determine this, the experimenter clicks any of the arrows surrounding the hexagon board to indicate where they would like a ray to be shot. Ray markers are placed at the entry and exit arrow points of the ray. There is a key on the side indicating the colours for the different types of ray: *Red = absorbed*; *Green = clear path*; *Blue = reflected ray*; *all other colours = ray path is deflected*. For every ray, its entry point and exit point are marked with the same coloured markers.

Observing those entry/exit points, the experimenter tries to evaluate where the atoms could lie. The experimenter has the option to place atoms by clicking a hexagon at any stage of the game. If unhappy with the placement of the atoms, press the 'reset' button to reset atoms to their original position. Once confident with the guess by placing all six atoms, click the check button to submit guess. Pressing the check button, ends the round and the complete board is displayed with all rays, atoms, circle of influences and the score for that round. Press the 'return to home screen' button to return to the welcome screen of the game, where they can either start a new round of the game or press 'exit' to exit game.

Scoring:

The scoring off the game is based on the number of ray counters on the board, as well as the number of atoms incorrectly placed. A reflected or absorbed ray type will produce one ray counter, and all other rays produce two ray counters. Any atom that is incorrectly placed incurs 5 points. For example, 3 incorrect atoms would be 15 points. The aim of the game is to get the lowest score possible.

Game Model


Welcome to BlackBox+!
Would you like to play against
COMPUTER?
Guess the randomly generated atoms!
PLAYER?
One player sets the atoms and another guesses the placement!
Exit
Game Instructions
Game Instructions
Setter
This option is only available if you choose to play against another player.
One player assumes the role of setter. Place the atoms anywhere you wish on the board. Click the finish button once you are done placing the atoms.
Experimenter
Your aim is to guess where the atoms are placed on the board.
Click the arrow buttons on the edge of the board to shoot rays. You must deduce where the atoms are based on the ray markers for each ray. Once you are finished placing the atoms click the check button.
How is the score calculated?
The score is based on the number of ray counters on the board and the number of incorrect atoms placed. The aim of the game is to get the lowest score.
A ray can produce either 1 or 2 ray counters. If it is absorbed or reflected at the same point, it produces 1 counter. Otherwise it produces 2 counters. For each incorrect atom placed on the board, 5 points are added to the score.
Go back to homescreen
Game Instructions
User Input:
Player
Computer
Player
Computer
Setter View
Reset
Finish
Experimenter View
Absorbed
Clear
Reflected
Any other colour: Ray is deflected
Reset
Check
Experimenter View
Absorbed
Clear
Reflected
Any other colour: Ray is deflected
Reset
Check
Ray Count: 18
Experimenter View
Absorbed
Clear
Reflected
Any other colour: Ray is deflected
Reset
Check
Ray Count: 18
Check
Atom placed correctly
Incorrect placement (Atom not present)
Missed Atom
Experimenter View
Absorbed
Clear
Reflected
Any other colour: Ray is deflected
Score Breakdown:
Ray score: 13
Atoms score: 15
Total Score: 28
Return to Home Screen
Return to home screen.