The Gold Rush Game

Jaoiher Boulila

***What was implemented in* The Gold Rush Game?**

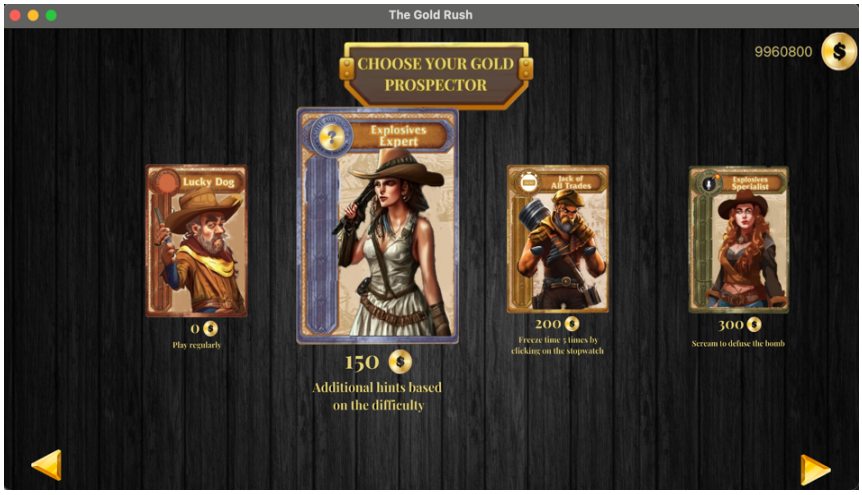
-Basic Rules

The project **TheGoldRush** is based on the game MineSweeper and is inspired by the Gold Rush of 1848. The playing field is divided into squares. By clicking on a square, it opens up. Some squares contain mines. If you click on a square with a mine, the game ends. If the clicked square does not have a mine, there are two possibilities. If a number appears, it represents the number of adjacent squares containing mines, from 1 to 8. If no number appears, it means that all 8 adjacent squares are mine-free. The player's objective is to collect all the gold by opening all the mine-free cells. Additionally, they must locate all the mines. The player aims to achieve the best possible score based on the time taken and the amount of gold collected. Each cell provides a different amount of gold. The user can choose the character, and the level of difficulty, request hints, and buy more hints. Every character has different functionalities.

-Screenshot

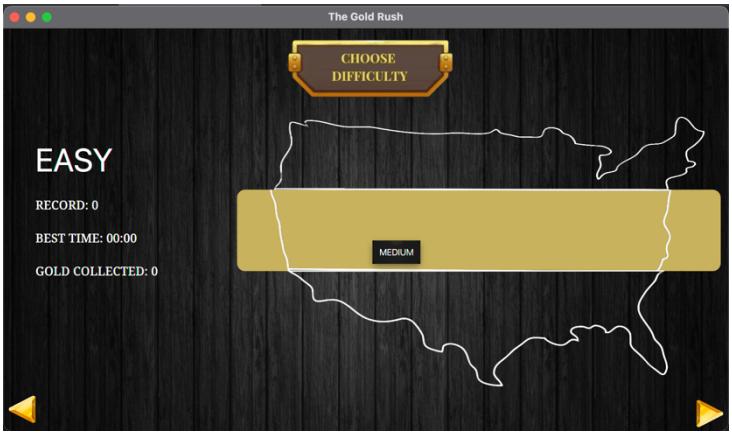
The Home screen displays three buttons: "PLAY GAME," "HOW TO PLAY," and "STORY." This allows you to navigate between different screens.

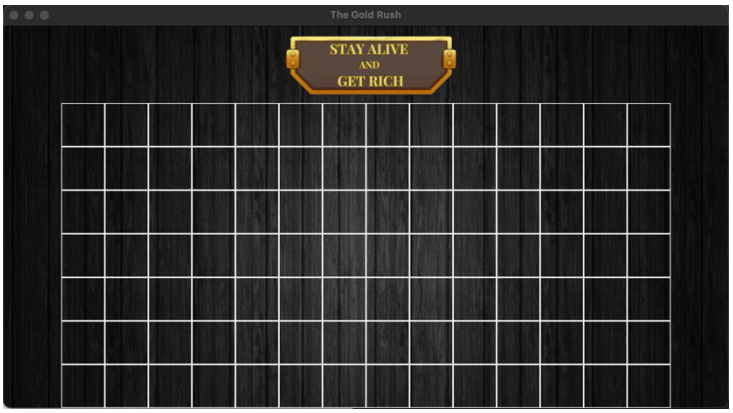
This is the screen that appears when you click the "Story" button. You can return to the home screen using the back button (arrow in the bottom left).



Through swapping, the user chooses the character they want and proceeds to the next screen by clicking the "continue" button. The user's selected character appears larger than the others.

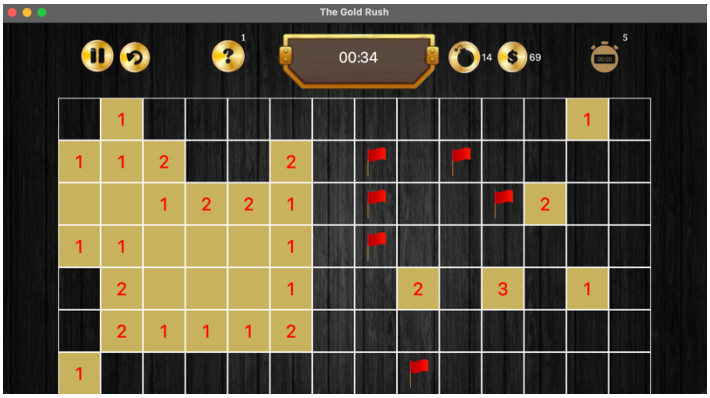
Choose your gold prospector: Here, the user can select from four different characters. Each character has their unique ability, displayed at the top left of their image. Each character comes with a cost. The user can only play once with a character and must have sufficient gold. With the first character, you can play normally and for free. By selecting the second character, the user can access extra assistance based on the chosen difficulty level. Choosing the third character allows the user to stop the timer for 5 seconds, 5 times during the game! A red line around the timer will indicate these 5 seconds to the user. Opting for the fourth character enables defusing bombs by shouting. Simply shout, and the bomb won't explode.

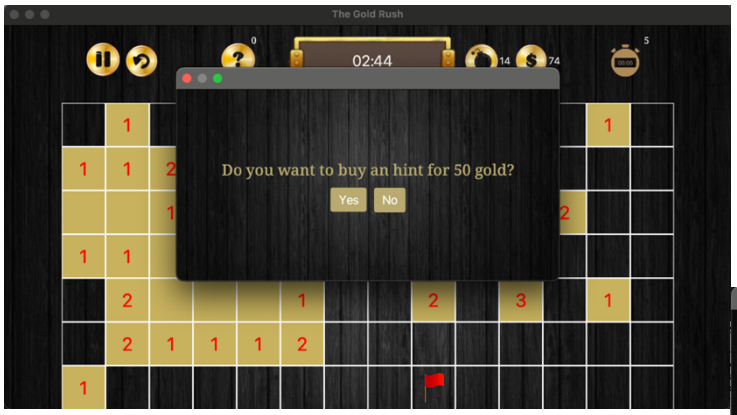




In the next screen, you can choose the difficulty level. There are three different difficulty levels: EASY, MEDIUM, and HARD. A map of the USA is used, and each region represents a different area to explore. Each area is characterized by a different difficulty level. By selecting the desired area, you can view the record, the best time, and the gold collected so far on the left. When you hover the mouse over the desired region, it turns yellow.

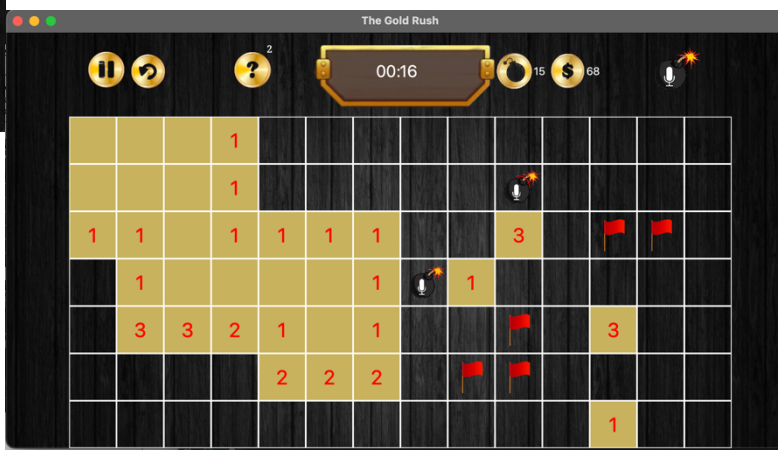
In the next screen, a grid appears, and to start playing, you need to click randomly on the grid. Depending on the chosen difficulty level, bombs are randomly placed and the size of the grid varies.

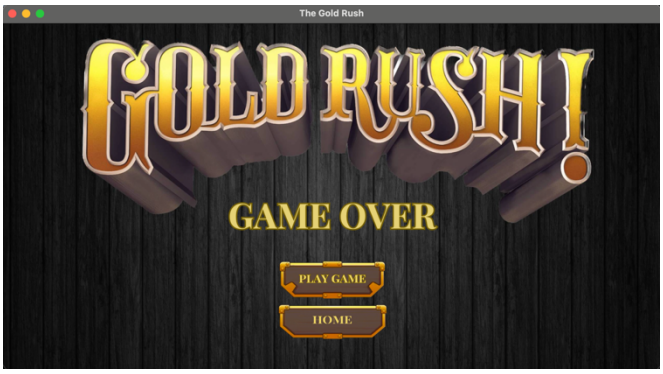




The game starts. To indicate the time, there's a timer. With a left-click, the user can open cells, and with a right-click, they can place flags. At the top, you can see the collected gold and the remaining bombs. The user can restart the game (restart button), click on pause (or press backspace on the keyboard). Additionally, they can request a hint. To do this, the user must drag and drop the "question mark" onto the cell they want to uncover. If the cell contains gold, it turns yellow. If it contains a bomb, a flag is placed. The number of hints available varies based on the chosen difficulty level: Easy mode (3 hints), Medium mode (2 hints), Hard mode (1 hint).
Every time a bomb is located and a flag is placed, the number of bombs at the top decreases. Each time you click on a cell with gold, a different amount of gold is collected. This depends on how valuable the cell is. Cells closer to the bombs result in a higher amount of gold being collected.

The user can buy more hints. It’s indicated the number of hints and you can play differently based on the character functionalities, you chose.





If the user collects all the gold present and locates all the bombs, they win, and the "YOU WIN" screen appears.

If the user clicks on a cell containing a bomb, they lose, and the "Game Over" screen appears. They can choose to play the same difficulty level again or return to the home screen.

Setup and Launch:

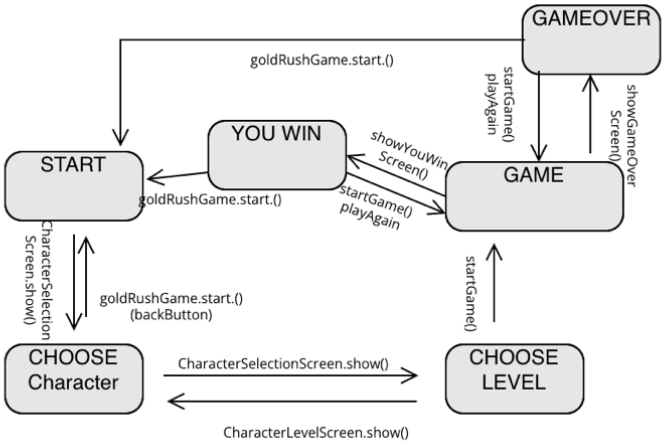
- Open IntelliJ IDEA.
- Navigate to File.
- Open the TheGoldRushGame.java file.
- Click the play button to launch the game.

Functionalities Implemented:

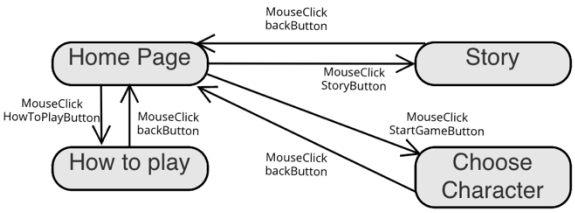
- **Basic Mouse Interaction:** Players can navigate between scenes, open tiles, and pause the game by left-clicking.
- **Pause:** Users can pause the game, preventing any further moves. They can resume by clicking the same button labeled "resume." Additionally, the user can pause the game using a keyboard input (backspace key).
- **Mine Generation:** The number and location of mines are randomly generated for each game.
- **Timer:** A timer is implemented.
- **Mouse Press Event:** The event occurs only when the mouse is pressed.
- **Restart:** Users can restart the game by pressing the restart button.
- **Character Selection:** Users can choose their character by swapping between options and selecting their desired character.
- **Hints:** Users can request hints by clicking and dragging a "question mark" onto the cell they want to uncover. The number of available hints varies based on the chosen difficulty level.
- **More Hints:** The user can buy more Hints
- **Flag Placement:** Users can place flags using the right mouse button.
- **Game End Screen:** After completing the game, a screen announces either victory or defeat, and the player can start a new game.
- **Score:** Updating and calculating the score based on collected gold and time taken. In the "YOU WIN" screen, players will be able to view their score. Additionally, the record, gold collected, and best time will be updated.
- **Grid Size for Difficulty Levels:** Each difficulty level, in addition to determining a different number of available hints, will determine a different number of cells. In the medium mode, the grid has a medium size(98) and a medium number of bombs (20). In the hard mode, the grid has a larger size (162) and there's a higher number of bombs(30).
- **Character Selection:** Players can choose a character only if they have collected enough gold. Each character has a different cost. Every Character has a different functionality!
- **Different Functionalities:** Each character has different abilities. There are four characters. Selecting the first one allows you to play normally. Purchasing the second character allows you to play with more hints (the number depends on the chosen difficulty). Buying the third character allows you to stop the timer for 5 seconds, 5 times. Buying the fourth character allows you to defuse bombs by shouting (in 5 seconds).

What was coded in The Gold Rush Game?

Game

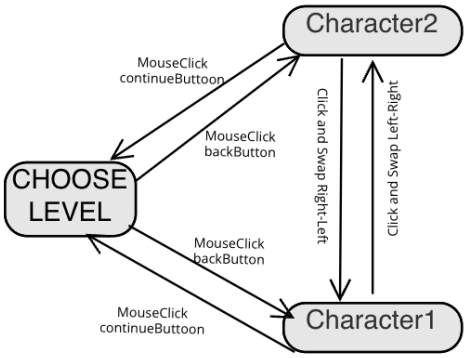


Home Page

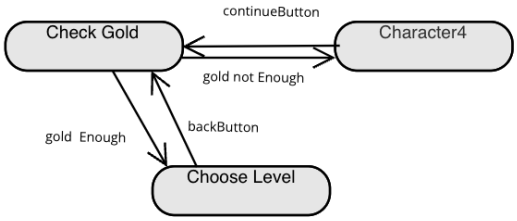


The project comprises eight classes that enable the control and definition of the characteristics of the game screens. The main class and starting point is **TheGoldRushGame**, which provides the game introduction and the initial button. The "**intro**.css" files manage the colors, backgrounds, and fonts for the game's introduction.

Swap Character1-Character2

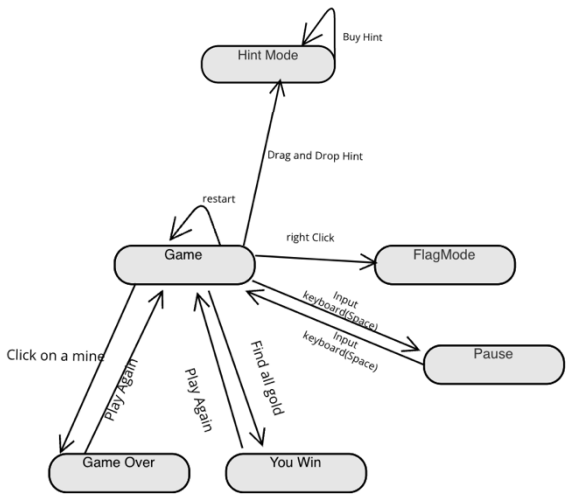


Buying a character

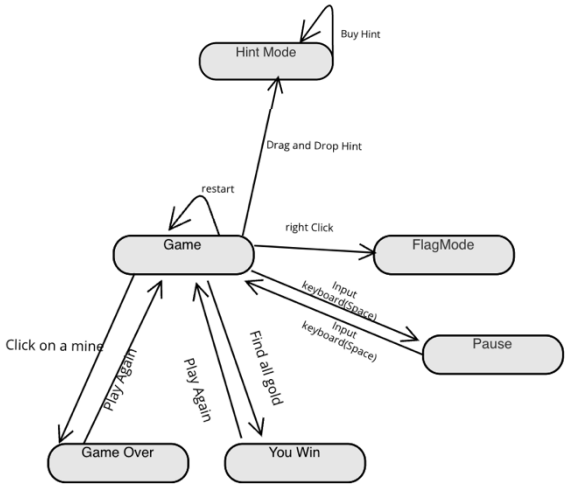


- **CharacterSelectionScreen** class manages the character selection screen in "The Gold Rush Game" application, allowing users to swap between characters to choose one. Users can select a character only if they have enough gold. The "**characterSelection**.css" files handle the colors, backgrounds, and fonts for this screen.
- **ChooseLevelScreen** class allows users to choose the game's difficulty level. This class allows users to see their records. The "**chooseLevel**.css" files handle the colors, backgrounds, and fonts for this screen.
- **GameView** (View) and **GameModel** (Model) class represent the core logic of "The Gold Rush" game. **GameModel** initializes the game by randomly placing a specific number of mines in random positions on the grid. The player's objective is to find all the gold by selecting all the tiles without bombs. The game ends when the user has found all the gold and correctly placed the flags. The amount of gold in each cell varies, with cells closer to the bombs offering higher rewards. The "**grid**.css" and "**pre-game**.css" files handle the colors, backgrounds, and fonts for the game.
- **SoundRecognizer** class allows sound detection. It is essential for character 4, who can defuse bombs by shouting.

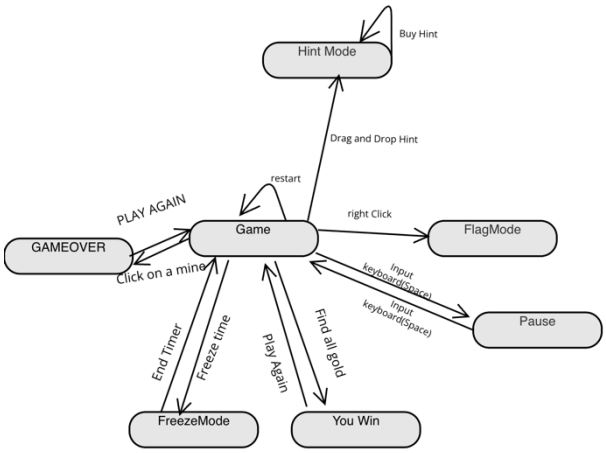
Game Character 1



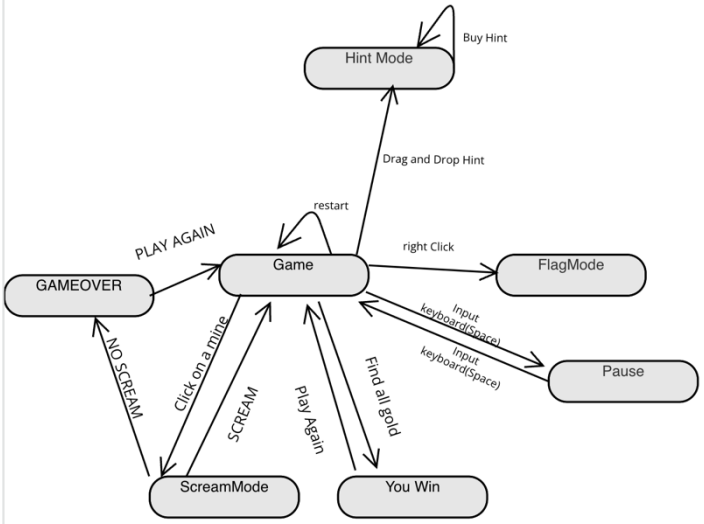
Game Character 2



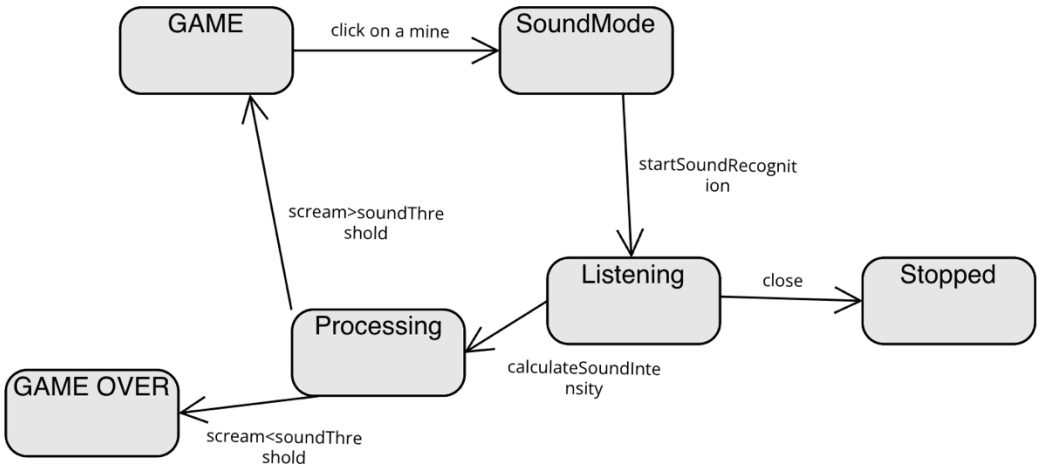
Game Character 3



Game Character 4



Sound Recognizer:



- The **YouWinGame** class manages the screen that appears when the player wins the game. The "youWin.css" file handle the colors, backgrounds, and fonts for the game.

- The **GameOver** class manages the screen that appears when the player loses the game in "The Gold Rush." The "gameOver.css" file handle the colors, backgrounds, and fonts for the game.

The project was developed using IntelliJ IDEA and is made available through a .jar file. It's needed only JavaFx.