

Memory Game

SEMESTER PROJECT 2018-19REPORT

Course: Principles of Software Engineering (TP323)
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➤ Game Analysis

Launching the game, the first window opens asking for the player's Information as well as the difficulty he wants to play.

Class Info extends JFrame

A screenshot of a Java Swing window titled "Memory Game". The window has a light gray background and a standard title bar with minimize, maximize, and close buttons. The main content area contains the following elements: a label "Player Name" centered above a white text input field; a label "Difficulty" centered below the input field; three radio buttons arranged horizontally, labeled "Easy", "Medium", and "Hard", with the "Easy" button selected; and a "Play" button centered at the bottom.

For this class we've used the Singleton Design Pattern which is very useful for creating single objects (static) that they're not going to be used again.

After giving his name and choosing the difficulty, the player can press the Play button to begin.

The play button creates a MainFrame instance in its ActionListener making it visible (.visible(true)).

Class MainFrame extends JFrame



In the above image you can see the MainFrame where the images, timer, score, and difficulty can be previewed. The number of images in the game as well as the timer depend on the difficulty that the player chose.

If the player chooses a higher difficulty, the number of pictures is going to be higher and he'll also have some extra time.

The above JFrame is consisted of a JPanel, containing a GridLayout (rows, cols) which contains a JLabel in every position of the matrix.

The MainFrame creates instances from two classes. The FrontBoard, responsible for the JPanel, and the BackBoard responsible for the image data behind the grid.

In addition, the FrontBoard is using the data of BackBoard in order to organize the pictures in the grid.

In the bottom part of the MainFrame we can see this bar:

Time Remaining:[02:00]	Score: [George:Computer]	Easy-Pairs: [6]
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Here we can see the number of minutes remaining until the player runs out of time, the score, as well as the number of pairs.

When the game begins, the player has some seconds to see all the cards before the cards turn up-side down.

The player goes first and after him it's the computer's turn. (The player chooses two cards and game goes on.)

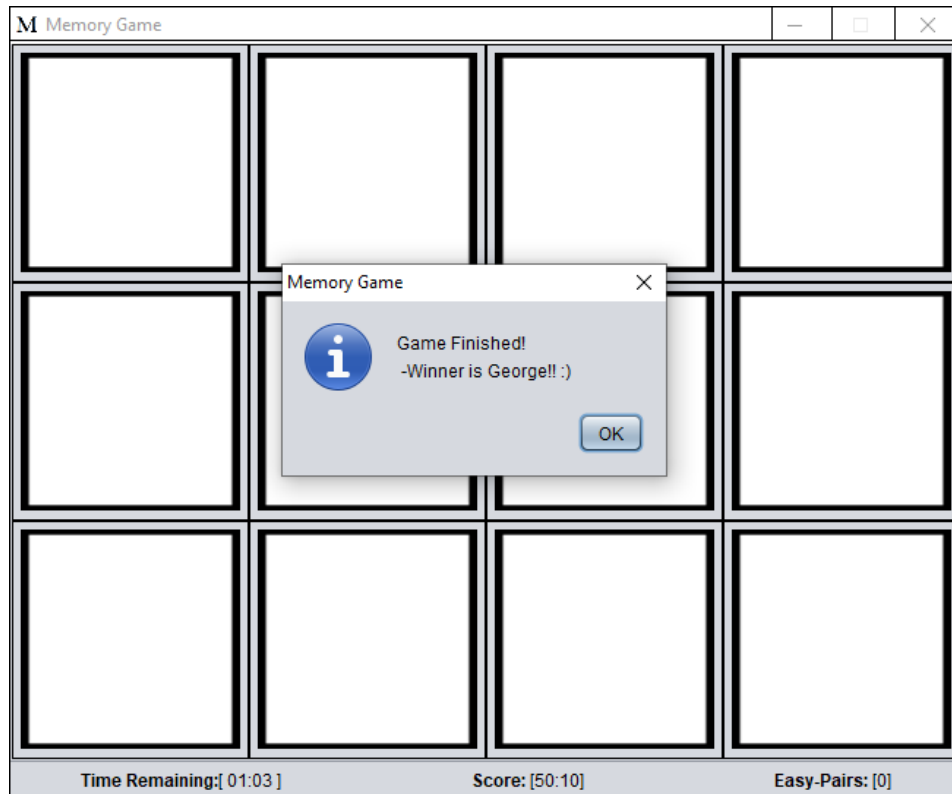


When someone finds a pair of cards, those cards disappear. (the computer cannot choose one of the cards that are already matched.)

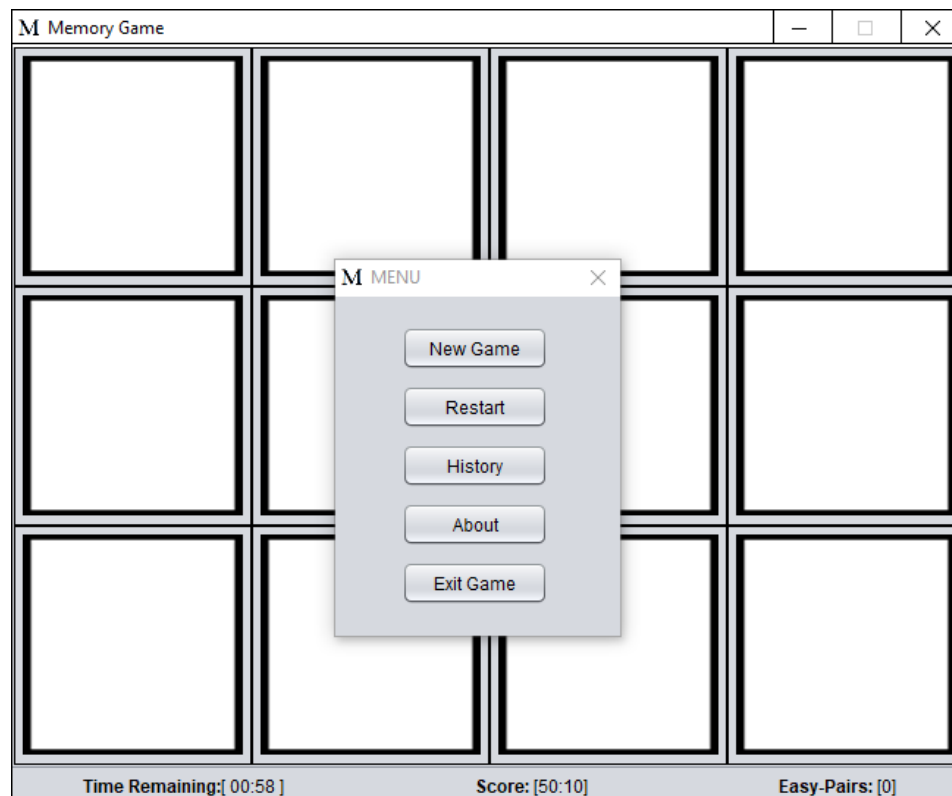


The game goes on until all the pairs are open, or the time is up.

When the game is over the player will get the following message (in case he wins. If he loses he'll get a "You Lost" message).



After clicking the OK button, the following menu will pop up.



The player is also able to access this menu while playing the game, by pressing the ESC button.



- "Restarting" the game asking for new Player Name and new difficulty.
- Restarts the game with the same name of player same difficulty.
- Showing the history of games played.
- Showing game information.
- Closing the game.