Nahom Haile May 1st, 2020

Test Cases

1. **File Reading Tests:**
   1. Can read easy, medium or hard game from file
   2. If no file name is entered, then the default game should get printed out: “sudoku.txt”.
   3. The game files shouldn’t exceed 9 row and columns
   4. If the files are missing, then:
      1. Error: cannot find easySudoku.txt, mediumSudoku.txt, hardSudoku.txt or sudoku.txt
   5. If the files aren’t in the right format, then
      1. Error: “filename” does not have the correct file format
   6. If a player wants to resume a game, then it reads from currentGame.txt
   7. If the rows and columns in the file are not enough then this gets printed:
      1. Error: invalid # of rows or/and columns.
   8. If the rows and columns in the file are incorrect data, then this gets printed:
      1. Error: incorrect date in file.
   9. The delimiter in the file is incorrect:
      1. Error: incorrect date in file.
2. **Basic Game play:**
   1. When player enters filename, it should print out the options the save, quit or undo anytime during game and the board should print out.
   2. If a player enters a row that is out of bounds:
      1. Enter Square number(row, column): 33, 2
         1. Error display: Invalid row number. Please try again.
            1. Enter Square number(row, column):
   3. If a player enters a column that is out of bounds:
      1. Enter Square number(row, column): 2, 22
         1. Error display: Invalid column number. Please try again.
            1. Enter Square number(row, column):
   4. If a player enters a value that is out of bounds:
      1. Enter Square number(row, column): 4, 4
      2. Enter value: 10
         1. Error display: Invalid value. Please try again.
            1. Enter Square number(row, column):
   5. If a player enters characters as row:
      1. Enter Square number(row, column): a, 4
         1. Error display: Invalid row number. Please try again.
            1. Enter Square number(row, column):
   6. If a player wants to quit:
      1. Enter Square number(row, column): q
         1. Sorry to see you leave. See you next time
   7. If a player enters characters as column:
      1. Enter Square number(row, column): 4, a
         1. Error display: Invalid column number. Please try again.
            1. Enter Square number(row, column):
   8. If a player enters nothing for row and column:
      1. Enter Square number(row, column):
         1. Error display: Please enter a row and column for your guess.
            1. Enter Square number(row, column):
   9. If a player wants to save:
      1. Enter Square number(row, column): s
         1. Game saved in filename Thanks for playing Heritage Sudoku
   10. If a player enters row and column, and the location already has a value:
       1. Enter Square number(row, column): 4, 4
          1. Error display: Invalid move. That location already has a value. Please try again
             1. Enter Square number(row, column):
   11. If a player enters a value that is already in the same row:
       1. Enter Square number(row, column): 3, 2
       2. Enter value: 10
          1. Error display: Invalid move. There is already a 10 in the row. Please try again.
             1. Enter Square number(row, column):
   12. If a player enters a value that is already in the same column:
       1. Enter Square number(row, column): 3, 2
       2. Enter value: 10
          1. Error display: Invalid move. There is already a 10 in the column. Please try again.
             1. Enter Square number(row, column):
   13. If a player enters a value that is already in the same square:
       1. Enter Square number(row, column): 3, 2
       2. Enter value: 10
          1. Error display: Invalid move. There is already a 10 in the square. Please try again.
             1. Enter Square number(row, column):
   14. If a player wants to u:
       1. Enter Square number(row, column): 3, 2
       2. Enter value: u
          1. The updated board prints and the user enters another guess
   15. If a player enters a row, col and value correctly:
       1. Enter Square number(row, column): 4, 4
       2. Enter value: 7
          1. The board will then display the board with its updates and will then prompt for another guess:
             1. Enter Square number(row, column):
   16. If a player completes all the missing space the this will be prompted:
       1. Congratulations : “Players name” you have completed the sudoku puzzle. Want to play again?
3. **File Writing Tests(save functionality):**
   1. When you save a current game, it gets saved to the file they read in from
   2. If the file isn’t there, then this gets printed:
      1. Error: cannot find file “filename”
4. **Undo Tests:**
   1. If the players undo’s a move before making a move, then an error should be reported
   2. If a player types undo after first move, then the move is undone
   3. If a player types undo twice then an error should be reported:
      1. Error: Cannot undo twice
   4. If a player types undo during a random point in the game for example:
      1. Enter value: U
         1. It should read it as an undo and execute the command
   5. If a player resumes a game and they undo the first move, then an error should be reported
   6. If a player resumes a game and undo’s on the second move, then it should undo
   7. If the sudoku game is solved and the player undo’s, then the user is prompted:
      1. Game is complete already! No need to undo
5. **Quit Tests:**
   1. If a player quits on the first move, then it should quit the game and it is saved in currentGame.txt
   2. If a player quits while the game is in progress, then it should quit and the game saves in currentGame.txt
6. **Frame Specific Tests:**
   1. When a player enters their name, it should validate and set Name
   2. Start easy, medium or hard game and displays the game in progress
   3. If a player selects a button on the board it should be click a number in the number panel
   4. The button’s text should display the number selected in the number panel
   5. Quit button functions
   6. Resume button functions
   7. New game button functions
   8. Undo button functions
7. **Game Play:**
   1. Sudoku board is a 9x9 playing board
   2. If a player clicks a button the row, column and the square should be highlighted
   3. When a user places a number as the buttons text then it should highlight all the same number in the board
   4. The number Panel should display the number 1 through 9
8. **Game start up tests:**
   1. Player can start an easy, medium or hard game
   2. Player can resume a saved game