Memorise IT

OS Lab Project Report
1901,1903,1921

Description:

A Game where the user has to memorise a matrix of randomly generated numbers and where they are placed in the matrix
The user is then asked where a particular number is placed and the user has to answer with the row and column numbers. If they are correct, they are awarded a point but if they are wrong a point is deducted.

The round has a timer of 2 minutes where the user is allowed to attempt gaining the most points. The round only ends once the timer runs out or once the user guesses all 9 positions of the numbers, whichever occurs first.

OS Concepts and where they were used

A Child process is used to show the user a welcome screen before main menu is showed

Signals to implement the timer in the round.

Files were used to store the scores, game info, and ANSI text art as the banner

Problems faced and their solutions

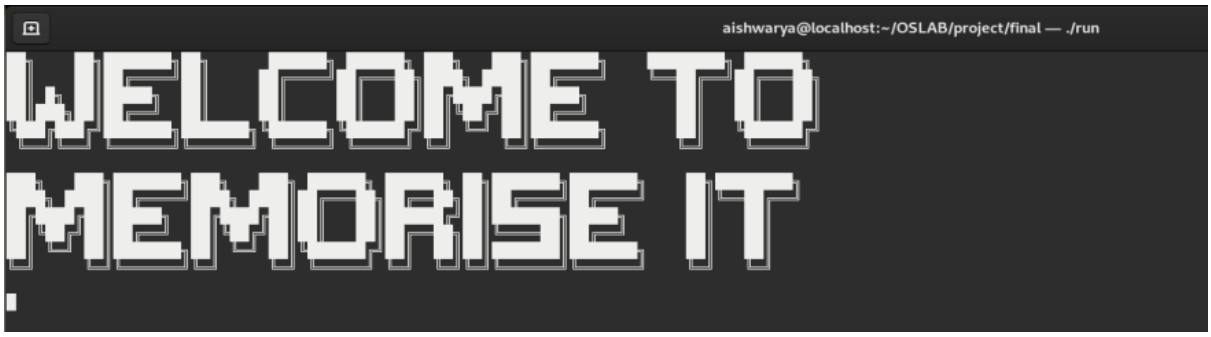
1. Since C is not real time, we could not stop the game as soon as time was over, so instead we had to accept input after time over but not give points
2. Since we could not use system("pause") before clearing screen as it Is a windows only function, we had to write our own function which waits for user to press the enter key to continue and then clear screen

Potential Improvements for the future

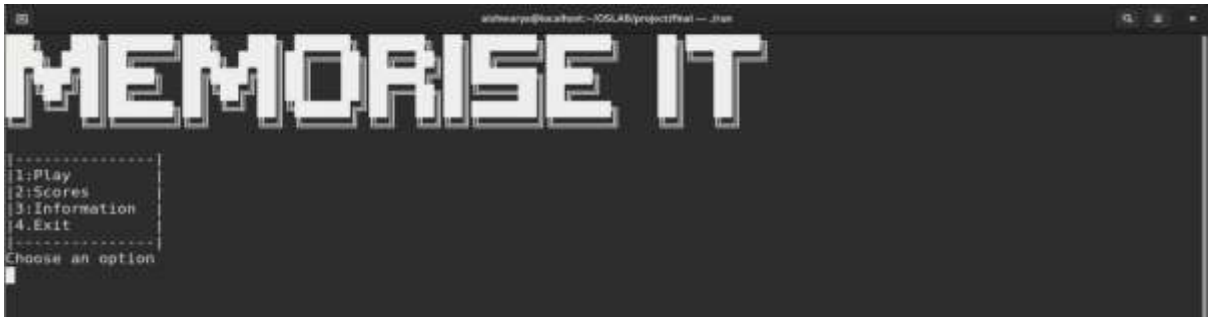
1. Let user choose how big they want their matrix to be and accordingly calculate and give them that much of a time limit
2. Make the game user profile based so that they can check their own high scores and friends high scores
3. Implement game in a language that will allow for real time changes on screen to impose proper time limit on player as well as display timer while they play
4. Calculate score with both right answers as well as time they have left if they finish it before time is over

Screenshots

Welcome Screen



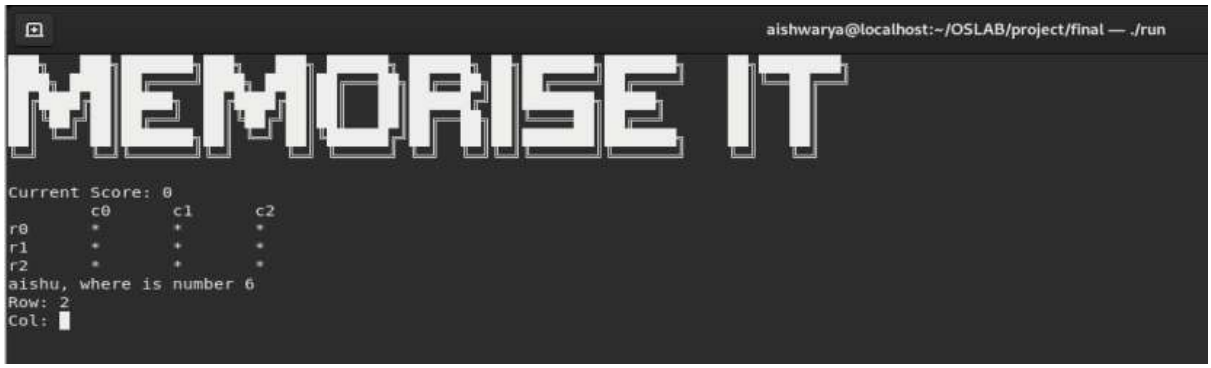
Main Game menu



1. Play game
    a. Input user name

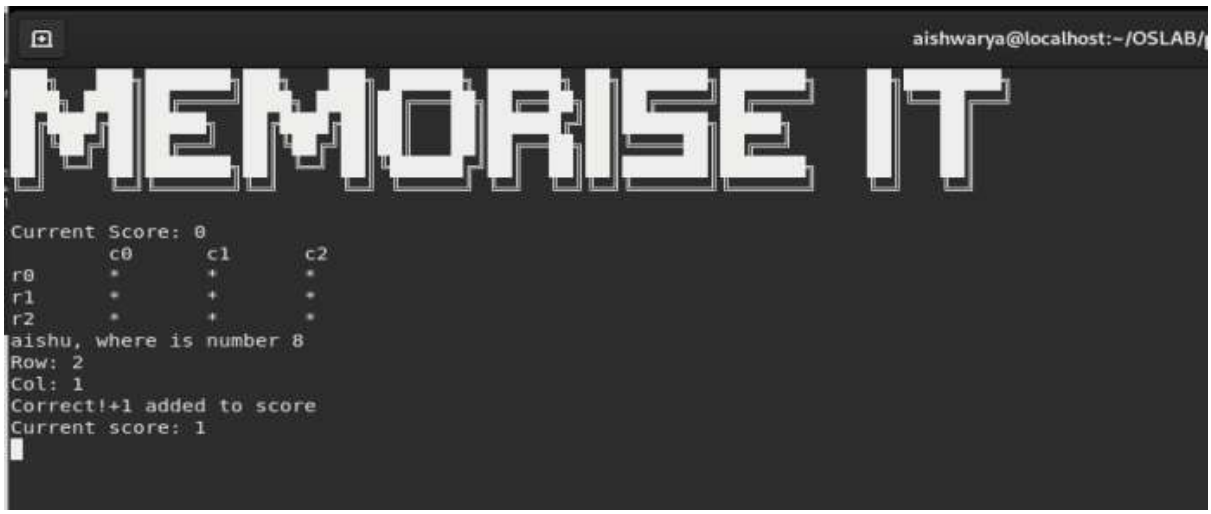
    b. Number matrix displayed for memorisation

c. User asked to enter answer

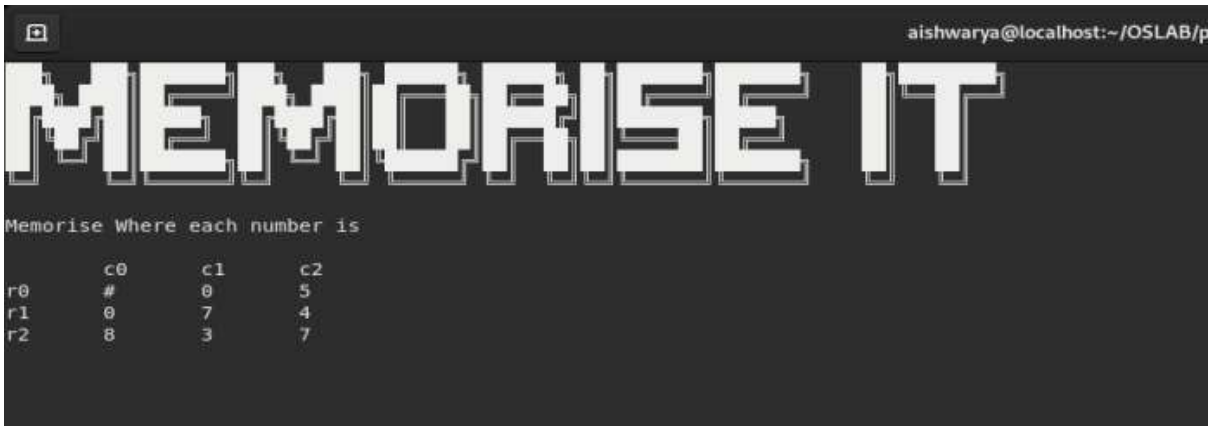


d. If guess is correct

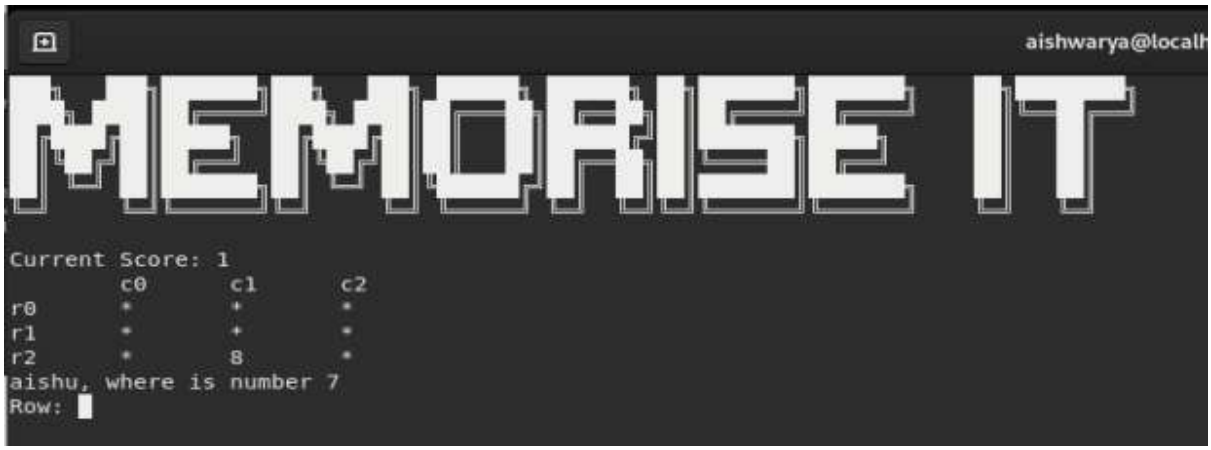
i. Score change and message



ii. Change in Number matrix

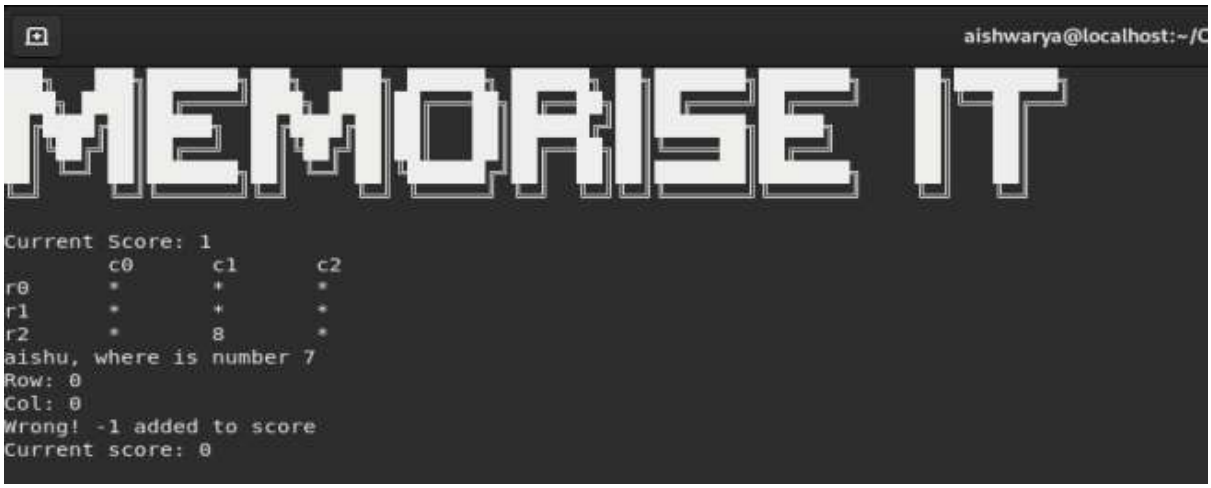


iii. Change in star matrix



e. If guess is wrong

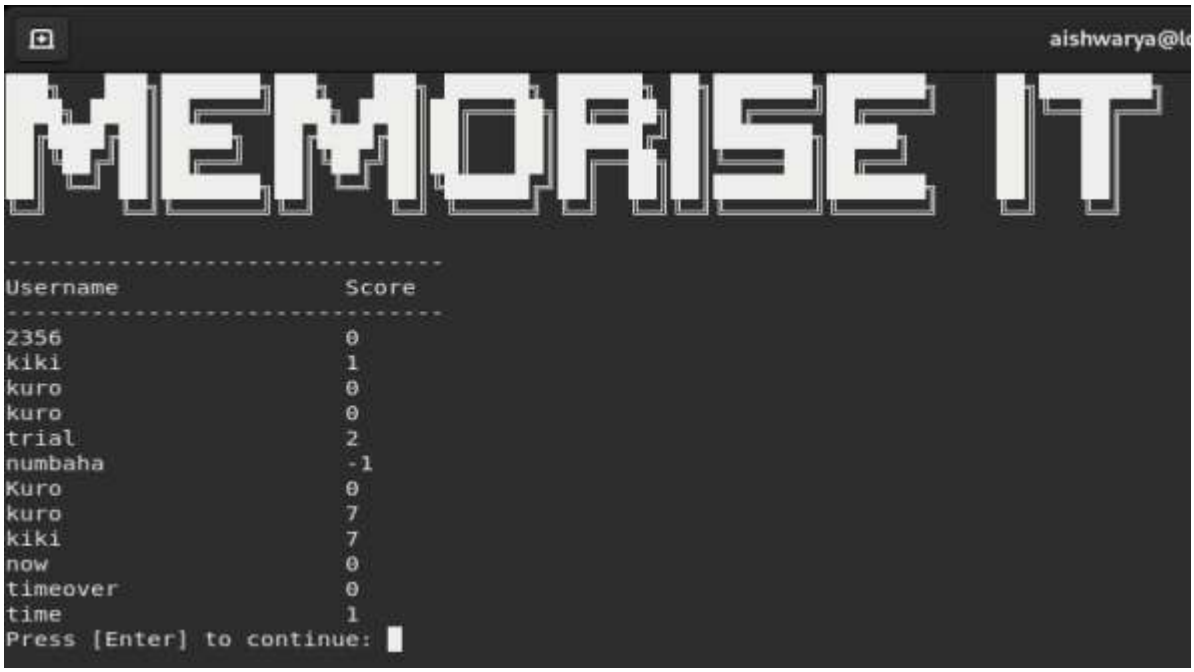
i. Score change and message



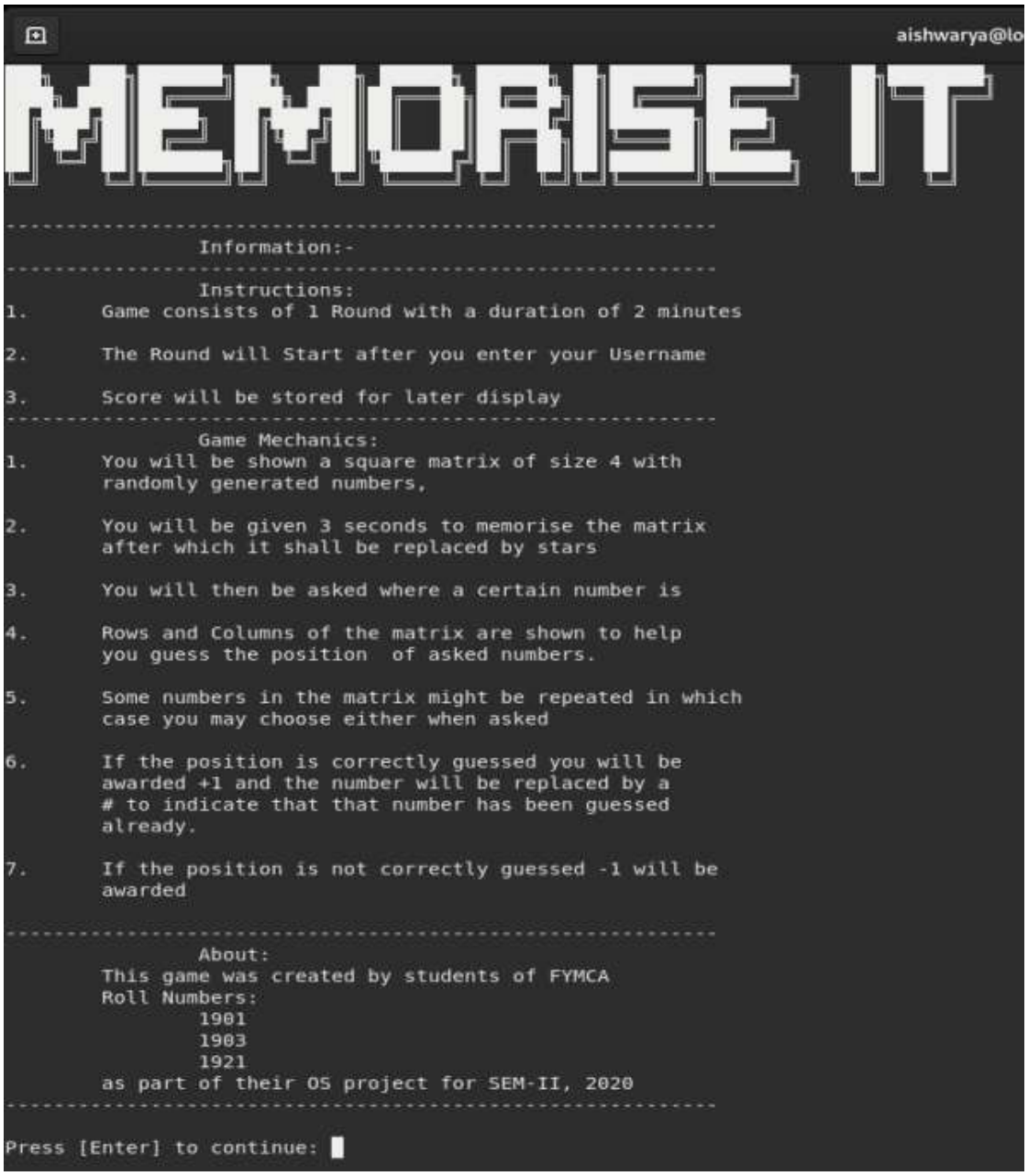
f. If time over

g. End of game screen

2. Scores



3. Information



4. Upon exit