CS 501-WS3 Final Project

CONNECT FOUR

Group Members:

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Introduction:

Connect four is a two-player board game in which players alternately drop colored disks into a vertically hanging grid of eight columns and six rows. The user wins if they place 4 disk's consecutively. This game helps in boosting strategic thinking capabilities.

Details of game:

In this game there will be 2 players which will be player red and player yellow in our case. First turn would be of player "red" and he/she will be asked to select a number between 0 to 7.

The goal of the game is to link four identically colored disks in a row, column, or diagonal before your opponent does so. The application instructs two players to alternately drop a red and yellow disk. The application redisplays the board on the console whenever a disk is dropped, and assesses the game's condition (win, draw, or continue).

How to play connect four:

If for example, user "red" starts and inserts 0 when the command is prompted. The letter "R" will be placed on the 0th column of the 0th row. Now, if user "yellow" selects 0 then as that position is already filled with "R", the letter "Y" will be placed on the row about it. So it will be placed on 1st row of 0th column.

This way the user "red" and "yellow" can obstruct each other from creating 4 disks consequetively.

For this project we will be implementing 5 test cases.

i.   Vertical (|): If either of "Red" or "Yellow" form four disks of their same color consecutively in vertical direction, will be declared a winner.

ii. Horizontal (--): If either of "Red" or "Yellow" form four disks of their same color consecutively in horizontal direction, will be declared a winner.

iii. Back Slash Diagonal (\): Can also be termed as Diagonal left. If either of "Red" or "Yellow" form four disks of their same color consecutively diagonally towards the left, will be declared a winner.

iv. Forward Slash Diagonal (/): Can also be termed as Diagonal right. If either of "Red" or "Yellow" form four disks of their same color consecutively diagonally towards the right, will be declared a winner.

v. Restarting game: If neither player "Red" nor player "Yellow" can form four disks of the same colour consecutively then the game will restart and both players will have to start playing the game again.

11 skills which gets developed by playing Connect 4:

1. The ability to gain firm control of the middle of the rack.
2. Planning and organizational skills.
3. Good defense mechanisms to consistently block the opponent.
4. Strategic thinking to always be one step ahead of the opponent.
5. Ability to recognize patterns.
6. Opportunistic thinking so that a possible connection is never missed.
7. Offensive thinking to ensure that the opponent's moves are less impactful.
8. The ability to learn from experience so that mistakes are not repeated.
9. Basic mathematics/counting skills.
10. Ability to consider possible outcomes so that potentially dangerous moves can be easily avoided.
11. Effective problem-solving skills to ensure that every disc inserted doesn't hinder the next move.