
Connect-Four

[Programming-1 Final Project]

BY:

Ahmed Ashraf

Saifullah Mousaad

FACULTY OF ENGINEERING, ALEXANDRIA UNIVERSITY

Important Links:

The full source code [GitHub](#).

The Game [Demo](#) on youtube.

1 Introduction

Connect-Four is a popular game. The winner is the one who can space more four discs of the same color adjacently -either in a vertical, horizontal, or even a diagonal row- than his opponent.

For more informations about the game [Connect 4](#).

This game is developed by the C programming language.

2 Features

-The player can select the Top X Players, the width and the height of the game using the XML file.

-The player is free to choose between two game modes -Human Vs Human OR Human Vs Computer- .

-Vs Computer mode was upgraded to be more difficult

.

-An Algorithm for the computer (personal effort) was implemented to make a progress and stop the player from making a progress.

-The player can save up to 3 games whenever he want.

-Undo and Redo the player moves.

-Displaying the player rank.

3 Design Overview

4 Assumptions

[1]In case of game loading:

-if the loaded file was corrupted or not found, Ask the player to select another file.

[2]In case of a tie in vs human mode:

-ask the two players to insert their names.

[3]In case of a vs computer mode:

-ask the player to insert his name whatever the result is.

[4]In case of XML file corruption:

-set the default values.

5 Data Structure

-Board array

-player structure

-configuration structure

-Column free spaces array

-position array

-turn array

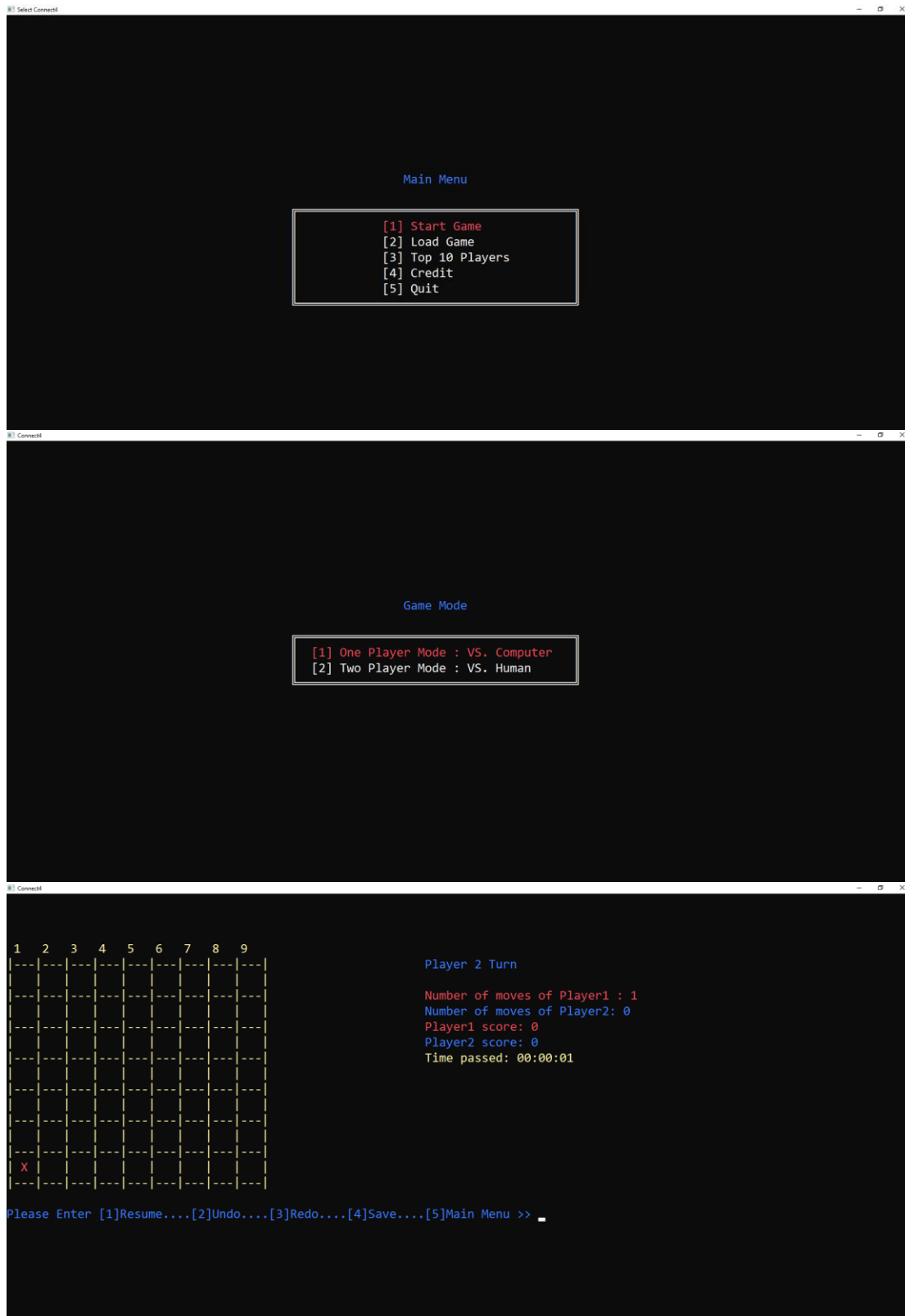
6 Important Functions

- Undo and Redo*
- Save and Load*
- Check score*
- Check free spaces*
- Check winner*
- player move*
- computer move*
- print board*
- xml*
- Top players*

7 User Manual

- first you have to choose game mode.*
- then you have to insert the column you want to play in.*
- you should try to make more 4 adjacent disks than the other player.*
- you can select (resume...undo...redo...save...main menu)during the game.*
- finally insert*

8 Sample Runs



9 References

-[gotoxy](#) function.