

Objectives

- Practicing 2D lists using Connect Four
- Course Evaluations

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Game Board for Connect Four

- 6 rows, 7 columns board
- Players alternate dropping red/black checker into slot/column
- Player wins when have four checkers in a row vertically, horizontally, or diagonally
- How to represent board in 2D list, using graphical representation?

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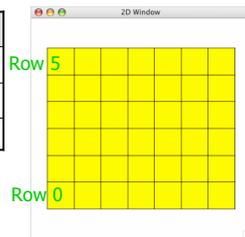
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Game Board for Connect Four

- How to represent board in 2D list, using graphical representation?

Number	Meaning	Color
0	Free	Yellow
1	Player 1	Red
2	Player 2	Black



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We're Making a Connect Four Class

- Data
 - Board
- Methods
 - Constructor
 - Display the board
 - Play the game
 - Repeat:
 - Get input/move from user
 - Check if valid move
 - Display board
 - Check if win

Group Work

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Code Base

- In **/home/couress/cs111/handouts/120507** directory
- **games.py**
 - Module containing ConnectFour class
 - Could add others
- **connectfour.py**
 - Driver for ConnectFour class
 - Executable as is, but doesn't do much
- **csplot.py**
 - Module for displaying 2D lists

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What To Do

- Start filling in the holes in ConnectFour class in **games.py**
 - Checking valid moves
 - Making moves
- As you implement the methods, uncomment the appropriate code in the **play** method
- Next steps:
 - Creating a basic AI for the computer to make moves
 - Determining win, draw

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Determining Best Move

- Idea: Select the best “column” to place your checker
- Simplest: pick a column at random
- More sophisticated:
 - Assign a “score” to each column that says how good that column is for you
 - Implementation: list of scores for the columns
 - Function that assigns scores to columns after each move
 - Progressively make function “smarter”

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Rules for Group Work

- 1 or more people
- Everyone must be engaged in the project
 - Assignments: driver, navigators
 - Driver: types at the keyboard
 - Navigators: give feedback, finding errors, thinking of next steps, algorithms for other parts
 - Periodically switch roles
- Discuss ideas on paper

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For Extra Credit

- Up to 15 points, included in lab grade
 - 7 points for checking valid, making moves
- Submit one version of your game for your group
 - Include a README file that says
 - Who the group members are
 - What you implemented
 - “We implemented the following methods...”
 - Copy code to turnin directory

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