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Connect 4 project

COSC 405

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**Important: to run this application you will need pygame and numpy installed.**

**CLI:**

**pip install pygame**

**pip install numpy**

**to uninstall simply change ‘install’ to ‘uninstall’**

**python driverAI.py**

I used Python, for the project. This project was probably a little easier for me, for one python is a more forgiving language than java. I also had experience developing a game before using Python(Space Invaders) so I was pretty familiar with the basics.

For the design I started by creating the board, a 2 dimensional array, (6 wide 7 tall), developing the rule set, and defining the win conditions. I then built the gui as if it was a two player game.

The hardest part was figuring out how to implement the heuristics and spent a good chunk of time on just that part. I defined my heuristics in using pieces in a scope of three by three The AI checks the scoring possibilities after a new piece is dropped on the board.

Depending on the what pieces are row it will score a move as 100 for four in a row, 8 for three, 4 for two, and -8 for only one piece in a row.

The depth of the search is 5.

I spent a lot of time on this, around 20 hours on development and 12 hours trying to package the program as an executable . The biggest down fall is that I could not figure out how to package this project as an exe. I believe it because Pygame uses c++ libraries to communicate with the OS and those libraries would not package with the executable. I tried all kinds of way to package it, from using tools from py2exe, installer cx\_freeze, to try generating a pex. And had no luck.

If you need anything regarding the project email me at qmqv@iup.edu