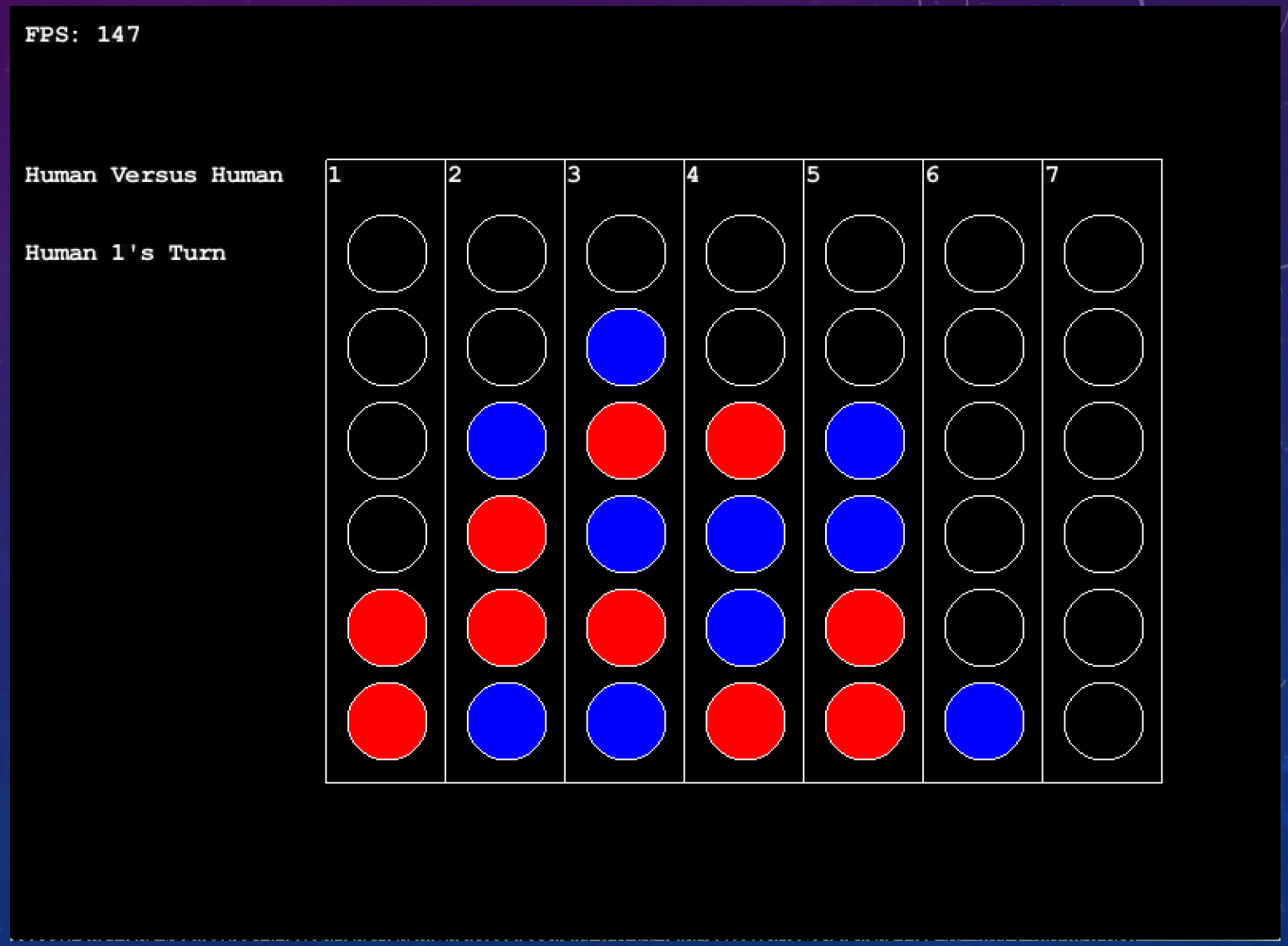
CONNECT 4 REVOLUTION

THE CONNECT 4 PROJECT

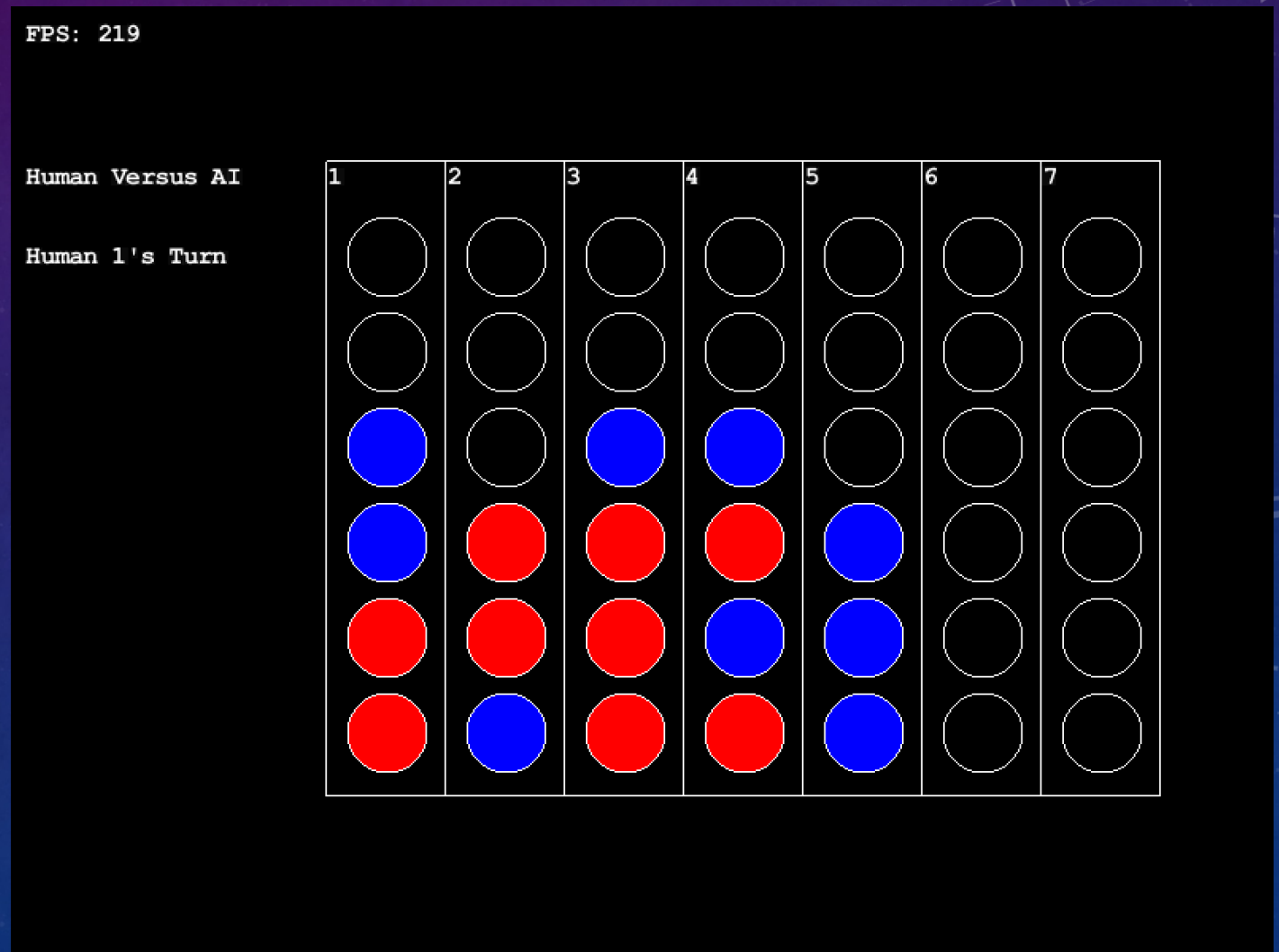
ALEXANDER ADRANLY

JAVA IMPLEMENTATION (1ST PROTOTYPE)

PLAYER VS. PLAYER



PLAYER VS. AI (REACTIVE AGENT – GLOBAL SCOPE)

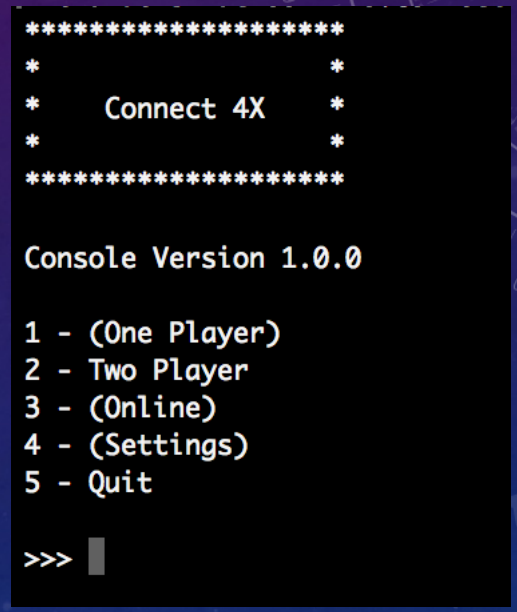


WIN/LOSE/TIE DETECTION

PYTHON REMODELING – WORK IN PROGRESS

What's New?

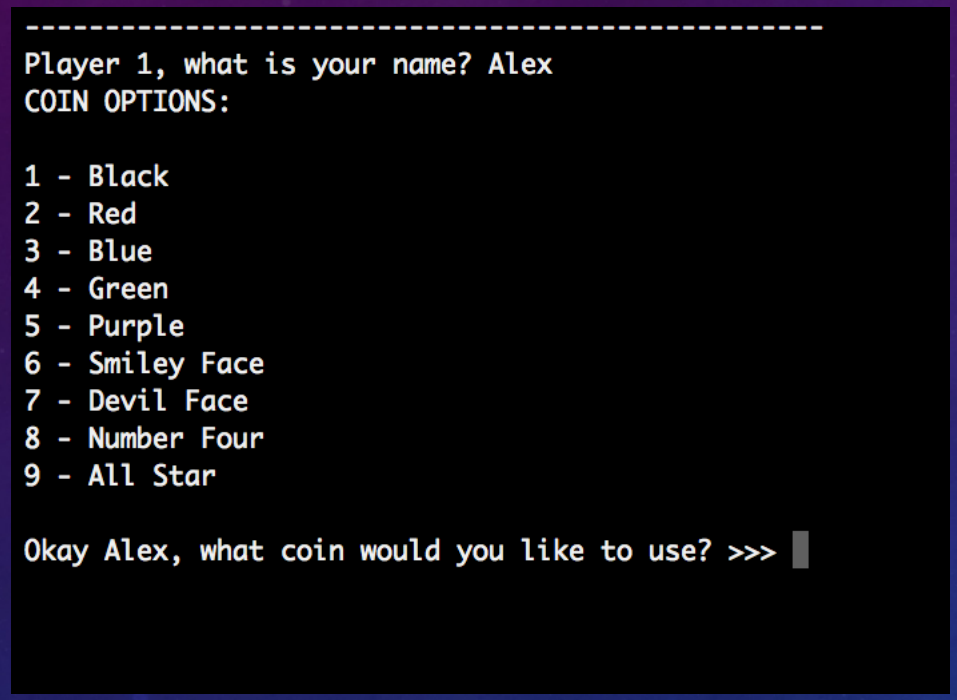
- New, modular code!
- Character selection capabilities
- Improved omniscient search algorithms
- Improved, state-driven, Game Flow!



What's In Store For the Future?

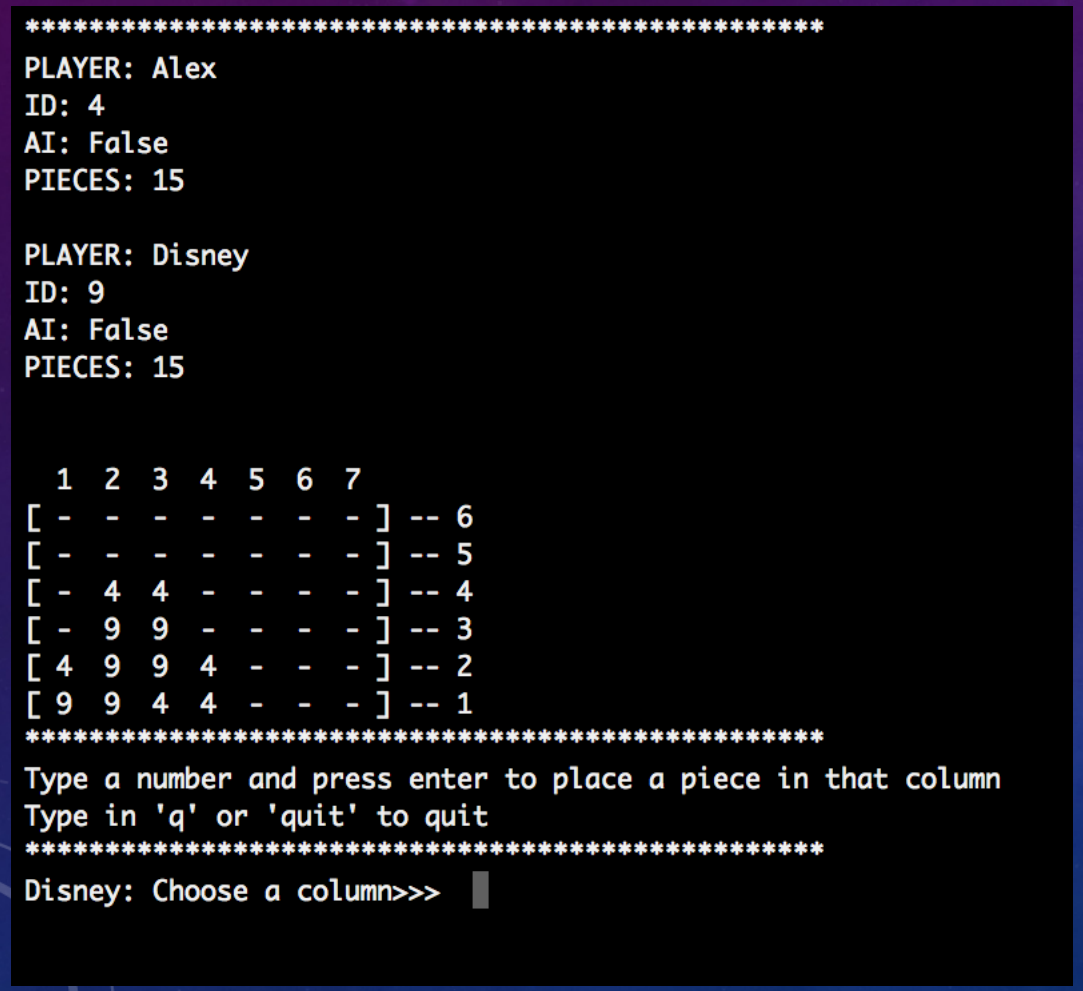
- 3D graphics for gameplay
- Game State API that integrates game controller with graphical interface
- Improved AI
  - Transitioning from a purely reactive agent to a hybrid (reactive and planning)
- Artificial Intelligence Player Feedback
  - (Having the AI Player respond strategically and vocally to whatever move was played
- Much, much, more!

CHARACTER SELECT



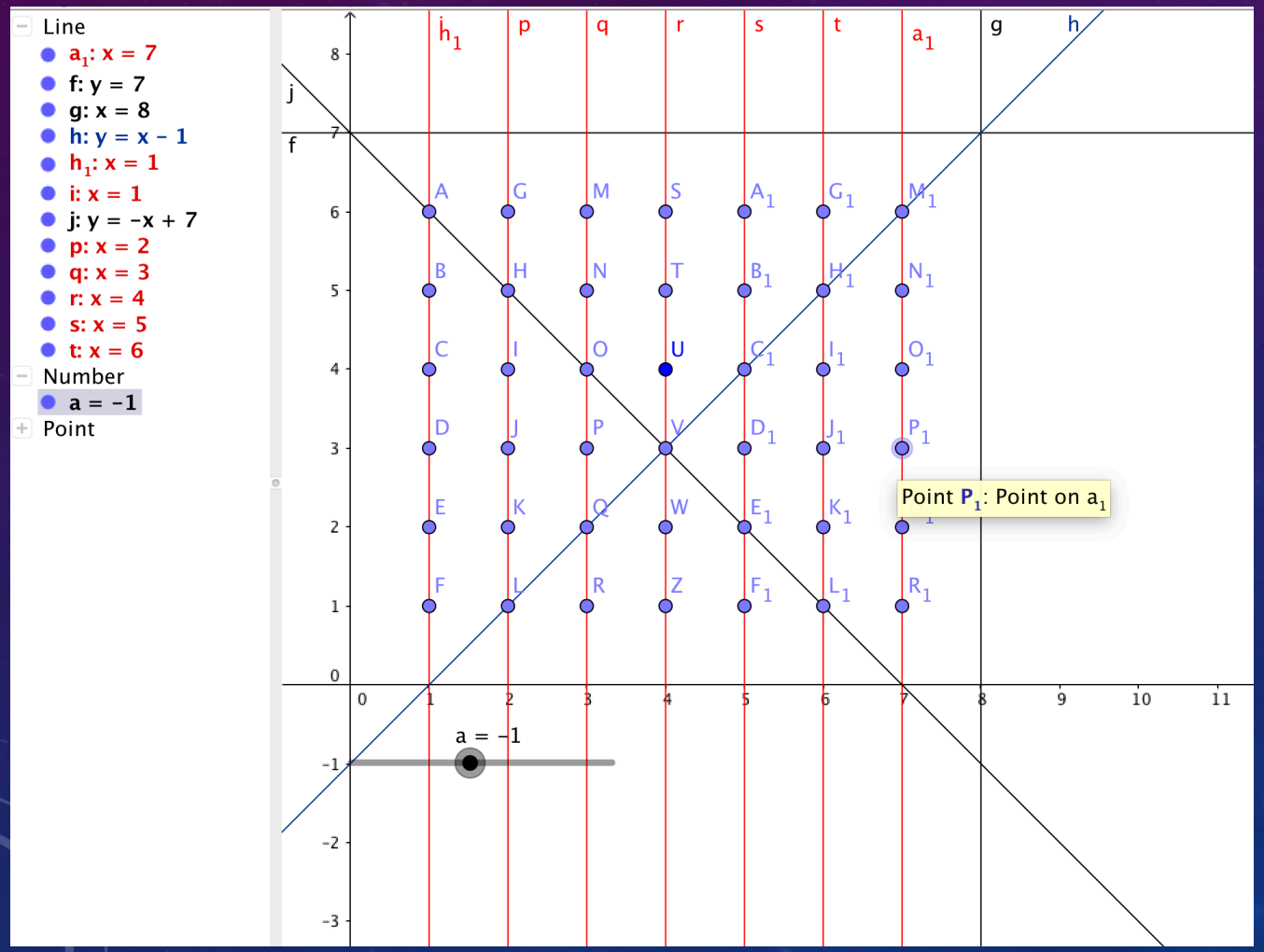
- Character creation is starting to be driven by the user.
- Hoping to eventually have a nicer looking character select screen

CONSOLE GAMEPLAY



- clean, easy to see how both players are doing
- Console clears after each move so only one board is seen on the screen

NEW OMNISCIENT DIAGONALS SEARCH



Nicknamed: Rising Slash Algorithm

- Iteratively scans diagonals for possible solutions
- Easier solution to read than previous solution
- More flexible feedback for AI analysis

WIN/LOSE/TIE DETECTION (GAME HISTORY)

```
**********************************************
PLAYER: Alex
ID: 4
AI: False
PIECES: 14

PLAYER: Disney
ID: 9
AI: False
PIECES: 13


  1  2  3  4  5  6  7
[ -  -  -  -  -  -  - ] -- 6
[ -  -  4  -  -  -  - ] -- 5
[ -  4  4  -  -  -  - ] -- 4
[ 9  9  9  9  -  -  - ] -- 3
[ 4  9  9  4  -  -  - ] -- 2
[ 9  9  4  4  -  -  - ] -- 1
**********************************************
Type a number and press enter to place a piece in that column
Type in 'q' or 'quit' to quit
**********************************************
GAME FINISHED!

RECEIPT:

WINNER: Disney
LOSER: Alex
GAME LENGTH: 15


--------------------------------------------------
HISTORY
MOVE 0: Disney --> COL 1
MOVE 1: Alex --> COL 4
MOVE 2: Disney --> COL 2
MOVE 3: Alex --> COL 3
MOVE 4: Disney --> COL 2
MOVE 5: Alex --> COL 1
MOVE 6: Disney --> COL 3
MOVE 7: Alex --> COL 4
MOVE 8: Disney --> COL 2
MOVE 9: Alex --> COL 2
MOVE 10: Disney --> COL 3
MOVE 11: Alex --> COL 3
MOVE 12: Disney --> COL 4
MOVE 13: Alex --> COL 3
MOVE 14: Disney --> COL 1
--------------------------------------------------
Press Enter To Continue...
```

- Detects wins, losses, ties and distinctly says who wins, who loses, and who ties at the end of the game
- The game instance keeps a history of the entire game
  - Useful for AI learning algorithms for pattern detection in playstyle

- Rematch option for determined or salty players

THANK YOU!