

The background is a deep blue gradient with a subtle pattern of white dots, resembling a starry sky. On the left side, there are several concentric circles and a large circular scale with degree markings from 140 to 260. Some of the circles have arrows indicating a clockwise direction. The overall aesthetic is technical and futuristic.

CONNECT 4 REVOLUTION

THE CONNECT 4 PROJECT

ALEXANDER ADRANLY

JAVA IMPLEMENTATION (1ST PROTOTYPE)













































PLAYER VS. PLAYER

FPS: 147

Human Versus Human

Human 1's Turn











































1	2	3	4	5	6	7
						
						
						
						
						
						

PLAYER VS. AI (REACTIVE AGENT – GLOBAL SCOPE)

FPS: 219

Human Versus AI

Human 1's Turn

1	2	3	4	5	6	7
						
						
						
						
						
						

WIN/LOSE/TIE DETECTION

FPS: 195

You Win Player 1!

Try Again? (y/n)

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!

```
*****
*                                     *
*      Connect 4X      *
*                                     *
*****

Console Version 1.0.0

1 - (One Player)
2 - Two Player
3 - (Online)
4 - (Settings)
5 - Quit

>>> █
```

CHARACTER SELECT

```
-----  
Player 1, what is your name? Alex  
COIN OPTIONS:
```

- 1 - Black
- 2 - Red
- 3 - Blue
- 4 - Green
- 5 - Purple
- 6 - Smiley Face
- 7 - Devil Face
- 8 - Number Four
- 9 - All Star

```
Okay Alex, what coin would you like to use? >>> █
```

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

CONSOLE GAMEPLAY

PLAYER: Alex

ID: 4

AI: False

PIECES: 15

PLAYER: Disney

ID: 9

AI: False

PIECES: 15

	1	2	3	4	5	6	7	
[	-	-	-	-	-	-	-	] -- 6
[	-	-	-	-	-	-	-	] -- 5
[	-	4	4	-	-	-	-	] -- 4
[	-	9	9	-	-	-	-	] -- 3
[	4	9	9	4	-	-	-	] -- 2
[	9	9	4	4	-	-	-	] -- 1

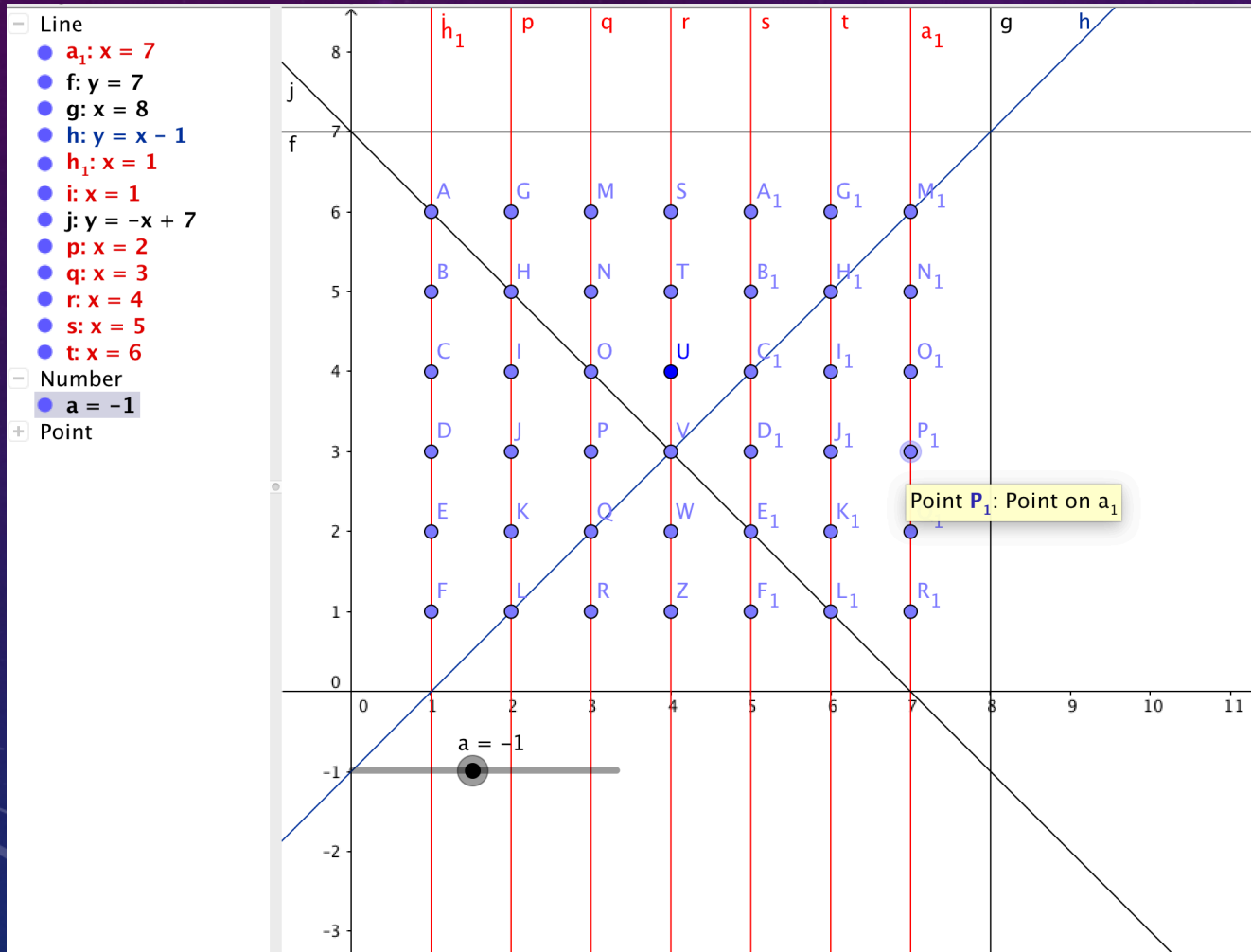
Type a number and press enter to place a piece in that column

Type in 'q' or 'quit' to quit

Disney: Choose a column>>> █

- 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 - - - ] -- 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!

