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**Part 2 :**

Programming language: Java

Code Structure:

I implemented the agent that plays the max connect 4 using A\* Search Algorithms in interactive and one-move mode and measured the time execution.

Classes :

AiPlayer.java

GameBoard.java

Maxconnect4.java

Node.java

Instructions to run the code:

Once the files (AiPlayer.java, GameBoard.java, Maxconnect4.java, Node.java,input.txt,output.txt ( empty file)) have been added to Omega machine, compile the code by running javac maxconnect4.java , javac AiPlayer.java, javac GameBoard.java, javac node.java

Having successfully compiled the code, run the following code to run the game in interactive mode.

java maxconnect4 one-move input.txt output.txt 7

Run the following to run the game in one move mode :

java maxconnect4 interactive input.txt computer-next 7

java maxconnect4 interactive input.txt human-next 7

For time :

time java maxconnect4 one-move input.txt output.txt 7

Interactive mode :

Argument interactive specifies that the program runs in interactive mode.

Argument [input\_file] specifies an input file that contains an initial board state. This way we can start the program from a non-empty board state. If the input file does not exist, the program should just create an empty board state and start again from there.

Argument [depth] specifies the number of moves in advance that the computer should consider while searching for its next move. In other words, this argument specifies the depth of the search tree.

One-move mode :

Read the input file and initialize the board state and current score, as in interactive mode.