PEAS and ODESDA

PEAS and ODESDA for connect four game

- PEAS
  - **Performance**
    In the case of the Connect4 game, the performance measure can be the number of games won by the agent against a human opponent or the average number of moves required to win a game.
  - **Environment**
    The environment in this case is the Connect4 game board, which is a 6x7 grid of cells. The game is played by two players, with one player using red disks and the other using yellow disks. The objective of the game is to connect four disks of the same color in a row, column, or diagonal.
  - **Actuators**
    The actuators for the Connect4 game agent would be the moves made by the agent, which involve dropping a disk into one of the seven columns on the game board.
  - **Sensors**
    The sensors for the Connect4 game agent would be the information about the state of the game board, including the positions of the disks played by both players and the number of disks in each column.
- ODESDA
  - **Observable**
    The Connect Four environment is fully observable. The environment consists of the board, which has constant dimensions, and the pieces, which belong to either the player or the opponent. The agent has access to all of this information.
  - **Deterministic**
    This environment could be considered deterministic, as there are no random elements at work here. The only unknown is the actions of the opponent. Therefore, the environment can be classified as strategic.

- **Episodic**
  The environment could be either episodic or sequential, depending on the algorithm the agent uses. If the algorithm calls for random placement of a piece, then the environment is episodic. However, if the algorithm is more sophisticated, calling for prediction of the opponent’s moves, then the environment is sequential.
- **Static**
  The environment is unchanged while an agent is deliberating , we started with a set of pieces that will not increase or decrease.
- **Discrete**
  A limited number of district, clearly defined percepts and actions ,
  The possible possibilities are specified.
- **Agent**
  Number of agent in the environment
  ...Multi not static
  Because there are two players
  ... Competitive
  Two players compete for the win .