AI              LAB ASSIGNMENT - 2

AIM:- To solve tictactoe using minmax algorithm.

OBJECTIVE:- To study and implement min-max algorithm for tictactoe.

THEORY:- Adversarial search:-
This is the search when these is an enemy changing the state of problem every step in a direction you don't want. eg. chess etc.
Tic Tac Toe solving steps:-
1) Check if game has reached terminal state & return a value depending on the outcome.
2) Generate all available moves
3) Call the minmax fun. on every available step more recursively to reach terminal state.
4) Evaluate collection of sorted moves.
5) Return optimal move.

MINMAX :- It is a kind of back tracking i.e. used in decision making & game theory to find optimal value of player.

INPUT :- Initial stage
OUTPUT :- Final stage.

FAQ's

Q.1 compare informed search & adversial search?
→ Adversial search is a search where we examine the problem which arises when we try to plan ahead of world and other agent are planning against us.

→ Informed search is more careful for large search spaces. It used concept of heuristics

Q.2 what is Alpha-beta pruning?
=. Modified version of min-max algorithm.
· Optimization technique for min-max algorithm.
- Can be applied at any depth of true sometime is only prunes entire sule tree.

Q.3 Min Max Algorithm.

```
function MinMax( node, depth, maximizing player):
    if depth =0 or node = terminal node then
        return static evaluation of node.
    if maximizing player then
        return max. Eva = ∞;
    for each child mode do
        eva = min max ( child depth -1, false)
        max eva = max ( max Eva , eva)
    return max Eva
    else
        min Eva = infinity;
        for each child of node;
            eva = minman( child, depth -1, true)
            min eva = min (min eva, eva)
        return min eva,
```