

# CSE366: Game Based Assignment

## Necessary Knowledge Required

Game Tree, Backtracking, State Saving in games, Alpha Beta Pruning.

## Team Formation

There will be at most three members in each group. More than that will not be allowed.

## Game 1: Tic Tac Toe

You need to implement the famous two player game Tic Tac Toe using your preferred language. Here the main change is that, the board of the game is not 3 x 3 but 5 x 5. A player wins if he can match his drawn symbols **in consecutive three cells either vertically or horizontally or diagonally**, the generic winning constraint of the traditional 3 x 3 tic tac toe game.

You will be given an initial configuration of the current status of the board including the human player's last move. From that position, you need to make the game interactive between the PC and the human player by alternating their moves. Pc will give a move, then you will take input from the human player and again pc will give a move and so on. Pc will apply AI knowledge to pick up the move that will give him the best result.

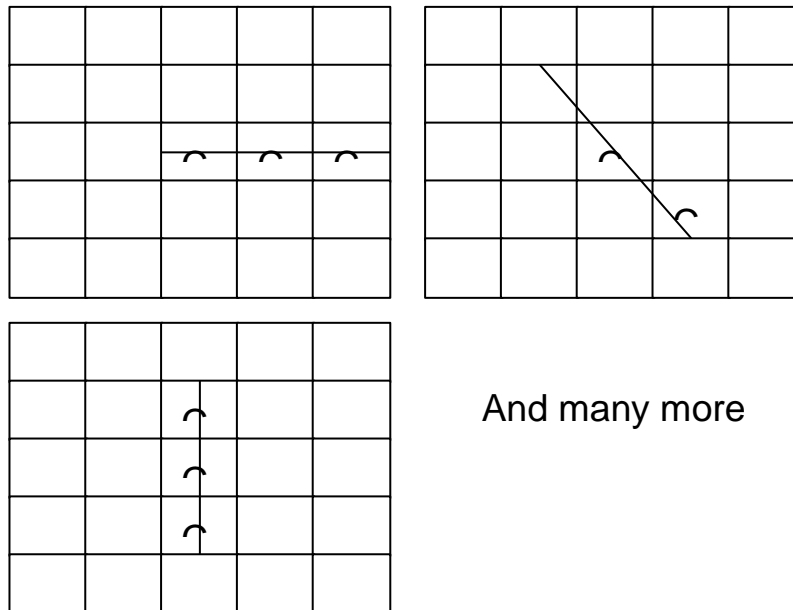


Figure: Some Winning Conditions in the 5x5 board matching horizontal or vertical or diagonal consecutive three same characters.

## Report Criteria

During submission, you need to submit both the report and the code. From each group there will be one submission. You can choose any one of the following as the project to complete your task. The content of the report needs to follow,

1. The problem statement
2. Formal algorithm writeup and discussion how the problem is approached
3. Conclusion that will state the challenges that you have faced and the topics that you have learnt during implementing the idea.