

Class: B.E (Computer), Sem – VI

Subject Name: Artificial Intelligence

Student Name: Sumit Sanjay Rai

Roll No:9570

Practical No:	1
Title:	Tic Tac Toe game implementation by a) Brute Force Method b) Heuristic Approach
Date of Performance:	29/01/2024
Date of Submission:	05/02/2024

Rubrics for Evaluation:

Sr. No	Performance Indicator	Excellent	Good	Below Average	Marks
1	On time Completion & Submission (01)	01 (On Time)	NA	00 (Not on Time)	
2	Logic/Algorithm Complexity analysis (03)	03(Correct)	02(Partial)	01 (Tried)	
3	Coding Standards (03): Comments/indentation/Naming conventions Test Cases /Output	03(All used)	02 (Partial)	01 (rarely followed)	
4	Post Lab Assignment (03)	03(done well)	2 (Partially Correct)	1(submitted)	
Total					

Signature of the Teacher:



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Post Lab Assignment:

1. What is the easiest trick to win Tic Tac Toe?
2. What is the algorithm to follow to win a 5*5 Tic Tac Toe?
3. Is there a way to never lose at Tic-Tac-Toe?
4. What can tic-tac-toe help you with?

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Class : TE COMPSA

Post Lab Assignment: Experiment-1

1. What is the easiest trick to win Tic Tac Toe?

Ans: The easiest trick to win Tic-Tac-Toe is as follows:

1. Start by placing your first mark in the center square.
2. If your opponent doesn't place their mark in a corner square, place your second mark in any corner.
3. Otherwise, place your second mark in a corner opposite to your first mark.
4. From your third move onwards, prioritize completing rows, columns or diagonals while blocking your opponent's moves.

2. What is the algorithm to follow to win a 5*5 Tic Tac Toe?

Ans: Algorithms:

1. Control the center square.
2. Create two-in-a-row, three-in-a-row, or four-in-a-row combination horizontally, vertically or diagonally.
3. Secure adjacent corner square to create multiple winning paths.
4. Control edge squares to add flexibility to winning combinations and block opponent's moves.
5. Anticipate opponent's moves and block potential winning moves while advancing your own strategy.
6. Be flexible and adapt strategy based on the current state of the board and opponent's moves.

3. Is there a way to never lose at Tic-Tac-Toe?

Ans: 1. Start in the center: Always begin with the center square for more winning opportunities and board control.

2. Create and block: Prioritize forming winning combinations while blocking your opponent's moves to maintain control and increase your chances of winning.

3. Adapt strategy: Adjust your approach based on the board state and opponent's moves to stay ahead and maximize your winning potential.

4. What can tic-tac-toe help you with?

Ans: 1. Strategic Thinking: Planning and executing moves to outmaneuver your opponent.

2. Problem-Solving: Analyzing the game state and finding optimal moves to achieve victory.

3. Pattern Recognition: Identifying patterns and potential winning combinations on board.

4. Score good grade: Studying tic-tac-toe will help to gain marks in AI.

5. Decision-Making: Evaluating different options and selecting the best course of action.

6. Critical Thinking: Assessing the consequences of each move and predicting your opponent's response.