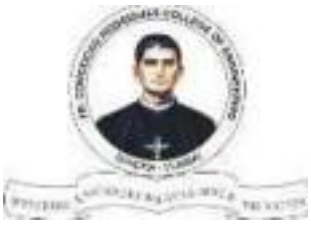

Fr. Conceicao Rodrigues College of Engineering Fr. Agnel Ashram, Bandstand, Bandra (W), Mumbai - 400050

Department of Computer Engineering

Academic Term II: 23-24

Class: B.E (Computer), Sem – VI Subject Name: Artificial Intelligence

Student Name: Sumit Sanjay Rai Roll No: 9570

Practical No:	**2**
Title:	Tic Tac Toe game implementation by Magic Square Method
Date of Performance:	05/02/2024
Date of Submission:	12/02/2024

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/indention/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:

Fr. Conceicao Rodrigues College of Engineering Fr. Agnel
Ashram, Bandstand, Bandra (W), Mumbai - 400050

Experiment No: 2

Title: Tic Tac Toe game implementation by Magic Square Method

Objective: To write a computer program in such a way that computer wins most of the time using Magic Square Method **Theory:**

A player who places his coins first across the same row or same column or same diagonal wins the game. Let us take a magic square of order 3 x 3 (for 3 coins game). The sum of the numbers across rows, columns and diagonals are the same - it is 15. That is, a player who places his coins such that he gets the perfect score of 15 takes the prize.

1) Board is considered to be a magic square of size 3 X 3 with 9 blocks numbered by numbers indicated by the magic square.
2) This representation makes the process of checking for a possible win simpler. Board Layout as magic square. Each row, column and diagonals add to 15.

8	3	4	**15**
1	5	9	**15**
6	7	2	**15**

3) Maintain the list of each player's blocks in which he has played. Consider each pair of blocks that the player owns.

Compute difference D between 15 and the sum of the two blocks.

If D < 0 or D > 9 then

i) These two blocks are not collinear and so can be ignored.

ii) Otherwise, if the block representing difference is blank (i.e., not in either list) then a move in that block will produce a win.

OUTPUT: