

## **9612 Post Lab Assignment Experiment 2:**

### **1.What is the relationship between tic-tac-toe and magic square?**

There exists a correlation between Tic-Tac-Toe and magic squares, especially within the realm of  $3 \times 3$  magic squares. In Tic-Tac-Toe, players endeavor to establish a sequence of three of their symbols (X or O) either horizontally, vertically, or diagonally. Similarly, a  $3 \times 3$  magic square is a mathematical construct wherein the sum of the numbers in each row, column, and both main diagonals is identical. Typically, these numbers comprise distinct integers organized within a grid. Both Tic-Tac-Toe and magic squares entail arranging symbols or numbers in a manner that fulfills specific criteria for achieving victory.

### **2.What is a magic square of order $n$ ?**

A magic square of order  $n$  arranges the numbers from 1 to  $n^2$  within a square grid of size  $n \times n$ . This arrangement ensures that the sum of each row, each column, and both main diagonals equals the same constant sum, known as the "magic constant" or "magic sum." While magic squares exist for various orders, constructing them becomes progressively more challenging with increasing order.