Object Oriented Programming

Term Project **Stage 01** **Marks 100**

Instructions

You are required to work on this project **individually**. Absolutely **NO collaboration** is allowed. Any traces of plagiarism would result in an **"F"** grade in this course and possibly **disciplinary action**. You are also **strictly not allowed** to discuss or take help from any of your peer student(s) but taking advice from your **Teacher** and from **Teacher Assistants** will be highly appreciated ☺ ☺ ☺

Due Date and Submission Instructions

Please mail the **source code .cpp file only** labeled with your complete roll number on Sunday, December 31, 2017 till 11:59 PM at areeba.ilyas@pucit.edu.pk

INTRODUCTION

Tic-tac-toe, also called noughts and crosses, hugs and kisses, zero and kata and many other names, is a pencil-and-paper game for two players, **O** and **X**, who take turns marking the spaces in an **N X N** grid. The player who succeeds in placing three respective marks in a horizontal, vertical or diagonal row wins the game.

This game is won by the first player, X:

X		O
X	O	
X	O	X

Create a class **TicTacToe** that will enable you to write a complete program to play the game of tic-tac-toe. The class contains a grid of size **N – by – N (3X3, 4X4 or 5X5)** of integers. The constructor should initialize the empty board and assign each location an deification number starting from zero for first location to n x n for last location of the grid.

Allow two human players to play the game. Wherever the first player moves, place an **X** in the specified square. Place a **0** wherever the second player moves. Each move must be to an empty square. After each move, determine whether the game has been won or is a draw.

SAMPLE EXECUTION

```
Welcome to Tic – Tac – Toe

Select playing grid

   1. 3 X 3
   2. 4 X 4
   3. 5 X 5

Enter your choice: 1
```

1	2	3
4	5	6
7	8	9

```
Player 1 Select a location: 1
```

X	2	3
4	5	6
7	8	9

```
Player 2 Select a location: 3
```

X	2	0
4	5	6
7	8	9

```
Player 1 Select a location: 4
```

X	2	0
X	5	6
7	8	9

```
…   …   …
…   …   …
…   …   …

Player XYX Wins

Want to play again [Y/N]: Y

Select playing grid

   1. 3 X 3
   2. 4 X 4
   3. 5 X 5

…   …   …
…   …   …
…   …   …
```

MARKS DISTRIBUTION

Execution	Error Handling	Coding Style	Comments	Total
50	20	20	10	100

NOTE: - No submission will be accepted after the due time of Sunday, 31 December 2017.

B E S T O F L U C K