APPENDIX 1

# TITLE OF PROJECT:

# TIC-TAC-TOE

END TERM REPORT

*by*


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APPENDIX 2

# Student Declaration

This is to declare that this report has been written by me/us. No part of the report is copied from other sources. All information included from other sources have been duly acknowledged. I/We aver that if any part of the report is found to be copied, I/we are shall take full responsibility for it.

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Place: Phagwara
Date: 21-october-2020

APPENDIX 3

TABLE OF CONTENTS

TITLE: TIC-TAC-TOE GAME .

APPENDIX 4

BONAFIDE CERTIFICATE

Certified that this project report “NAME OF PROJECT ” is the bonafide work of “NAME OF CANDIDATES” who carried out the project work under my supervision.

<<Signature of the Supervisor>>(Due to Covid 19, signature is exempted )
**Dr.DhanpratapSingh**
**Associate professor**
**25706**
**System Intelligence.**

## INTRODUCTION

Python is a high-level, interpreted and general-purpose dynamic programming language that focuses on code readability. The syntax in Python helps the programmers to do coding in fewer steps as compared to Java or C++. The Python is widely used in bigger organizations because of its multiple programming paradigms. They usually involve imperative and object-oriented functional programming. It has a comprehensive and large standard library that has automatic memory management and dynamic features.

Our project is to implement the Tic-Tac-Toe game which will features like single player

and two player modes. In single player mode we have used game theory logics like minimax algorithms to determine the best move that the computer plays.

The project was tested and it turned out to be 72.33% accurate.

As for the assignment, My assignment is design a project of TIC-TAC-TOE game. We decided to divide the work between the two of us.So we each took a different role in the project like one has collected all the modules and tools that are required and the other has designed the GUI and other took the test cases to check whether the project is working or not.

After doing the base work. We had decided to start the coding which became easy because we already decided which tools and widgets that we are going to use in the program.

## Motivation

a. To develop Tic-Tac-Toe 4X4 game for two players can come together and play for fun using computerized interfaced.

b. To develop a game that help a user to think fast when a problem occurs as well as to think and communicate.

c.We are very keen in programming and we also want to seek perfect programming. So we thought this project is a good chance to for getting experience in working with a team. Python is easy language compare to others. Our professor said about GUI(graphical user interface) due to which python dragged our intention towards it. We divided our work into ourselves and it became quite easy for us to complete our work on time. Since it is a very tough period for everyone during this pandemic,we were unable meet each other manually, hence we had decided and made the whole project online via Google meet,Zoom meetings. Our sole motivation for making this project was that we got to learn a lot about the python and tkinter, about their working.

## Learning outcome

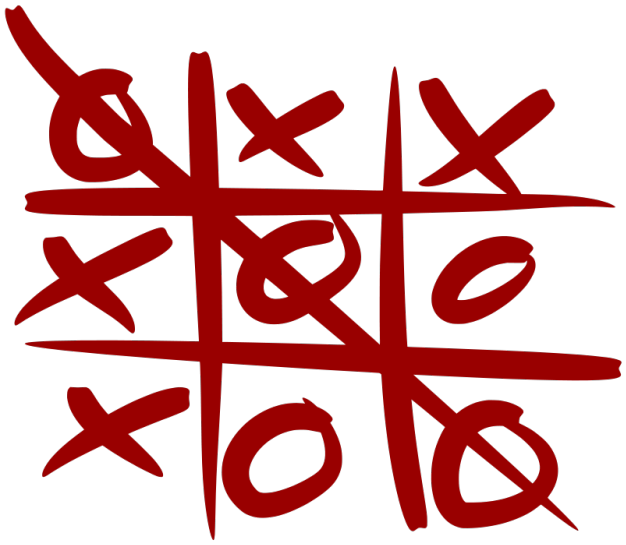
By the end of the project, we've got to learn much about python, we learnt various properties of tkinter ,we've learnt various alignments , different uses, widgets and how to take input/output from GUI. The biggest outcome of the project is that we came to know all the concepts of python tkinter. We, now have full grip over almost all the concepts of tkinter, as we had implemented all the widgets of python.

We also learnt about how to make the program i.e., firstly designing, then coding and then testing the project. We learnt all the widgets of python and their implementation and working. We've learnt which kind of widget provides what feature and where to use them.

## 1.Objectives:

Ourproject name is Tic-Tac-Toe game. This game is very popular and is fairly simple by itself. It is actually a two player game. In this game, there is a board with n x n squares. In our game, it is 3 x 3 squares.

The goalTic-Tac-Toe is to be one of the players to get three same symbols in a row - horizontally, vertically or diagonally - on a 3 x 3 grid.



## 2.1.Description and Overview

This game can be played in a 3x3 grid (shown in the figure 2.1.1) .The game can be played by two players.

2.1.2) Theory of Game:

A player can choose between two symbols with his opponent, usual games use “X”and “O”. If first player choose “X” then the second player have to play with “O” and vice versa.

A player marks any of the 3x3 squares with his symbol (may be “X” or “O”) and his aim is to create a straight line horizontally or vertically or diagonally with two intensions:

a) Create a straight line before his opponent to win the game.

b) Restrict his opponent from creating a straight line first.

In case logically no one can create a straight line with his own symbol, the game results a tie.

Hence there are only three possible results – a player wins, his opponent

If any player is able to draw three Xs or three Os in the following combinations then that player wins. The combinations are:

a) 1, 2, 3 b) 4, 5, 6

c) 7, 8, 9. d) 1, 4, 7

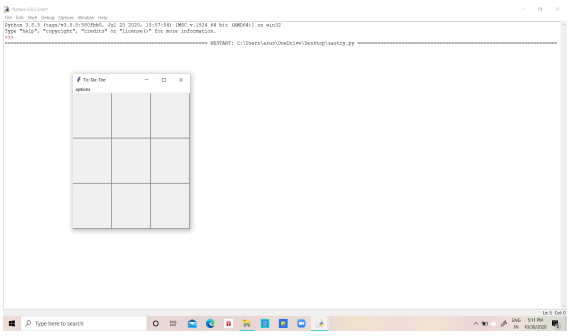
e) 2, 5, 8 f) 3, 6, 9

h) 1, 5, 9 i) 3, 5, 7

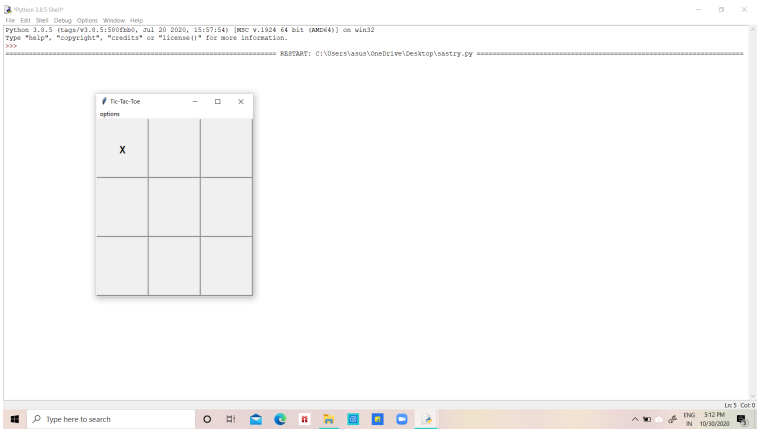
# Core Logic

For each move, check whether any 3 combination is occupied by any player and display the winner accordingly.

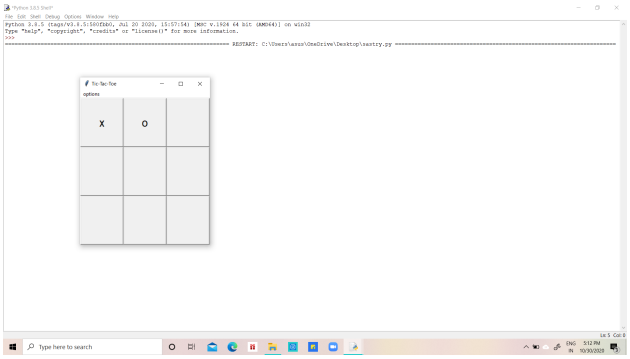
### 2.2.Test cases



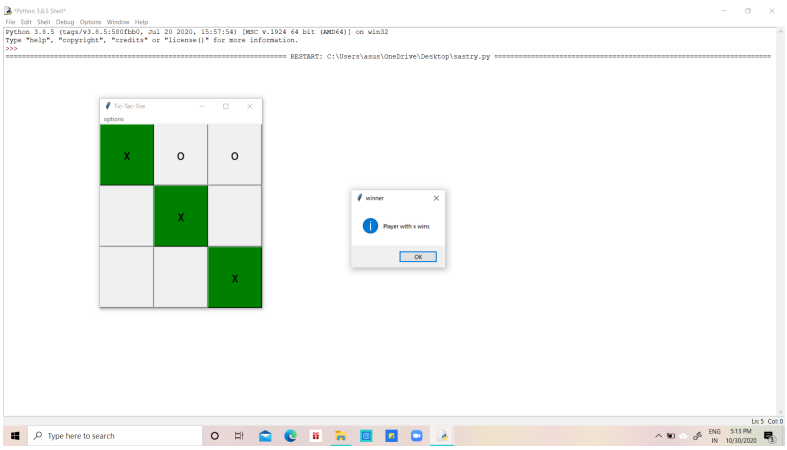
2.2.1)This is how the template of the game looks when we run the program.



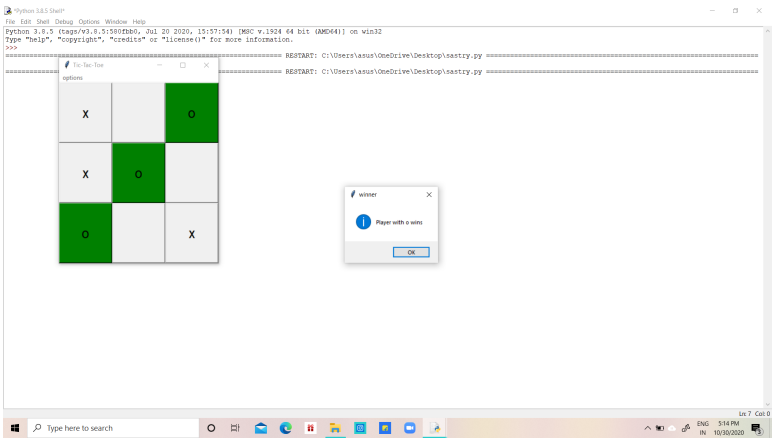

2.2.2)When the first player presses on a button 'X' is going to be displayed as above. Then comes the chance of next player.



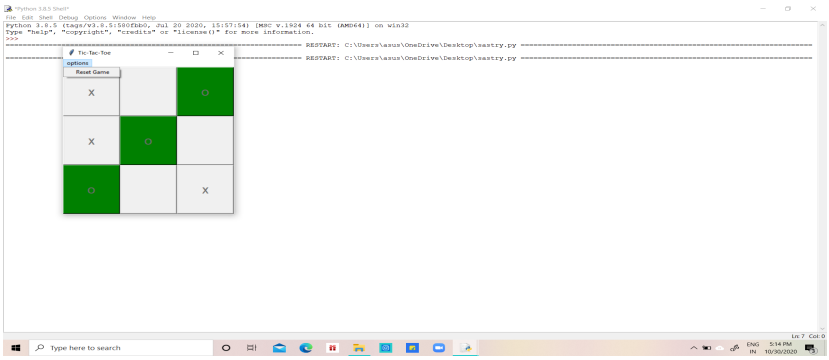

2.2.3)As the second player press on a button it will display 'O' symbol. Then allows first player to choose the button. This is how game continues vice-versa.



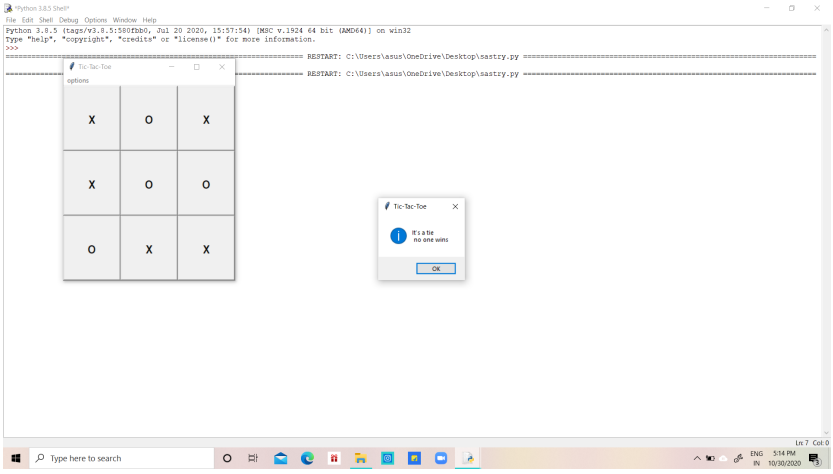

2.2.4)When the player with symbol 'X' gets 3 symbols of him in a straight line. A message pops up which displays"Player with x wins". So, the first player wins.



2.2.5)In this case, player with symbol 'O' got 3 in a straight line. So it displays a message as"Player with O wins".



2.2.6) At top-left corner of the image there is an "options" when we click on that it shows an option to reset the game due to which the user can easily reset the game to play again instead of going back and running the program.



2.2.7) In this case there is no chance for both the players to win. So, it displays "It's a tie. No one wins".

## 3.Conclusion

In the conclusion of this prroject, I would like to say that Python is a fun and easy programming language and while creating a project like this, it has not just been a good experience butit also helped in the development of my creativity and logical thinking. I would be more than happy to work on other projects in Python because it's just amazing to work with Python. The program is working and I hope, it's also bug-free.

## 4.References

While completing the project we also had a few doubts some of them were cleared by our lecturer and for the other some we had took reference from some of the best online sites. Those are:


https://docs.python.org/3/library/tk.html

https://www.skillshare.com/classes/

https://www.scribd.com/archive/plans?doc=385171876&metadata=%7B%22context%22%3A%22archive%22%2C%22page%22%3A%22read%22%2C%22action%22%3A%22download%22%2%

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https://www.geeksforgeeks.org/python-gui-tkinter/

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