Instructor: Dr. Hajra Waheed	Assignment-03	Artificial Intelligence

Note:

Submit assignment on Google Classroom using following format: task1.ipynb, task2.ipynb

Due Date: 31-March-2023 @ 11:59 PM

LATE SUMISSION IS ACCEPTABLE WITH PER-DAY PENALTY, which is 25% per day!

You MUST NOT PALAGRIZE as it will lead to zero in this Assignment

Total Marks: 50 + 50 = 100

Task 1:Solve tic-tac-toe problem using minimax algorithm:

Implement Tic-Tac-Toe Algorithm using min-max adversarial algorithm.
There are total of 9! states possible (including invalid ones as well, i.e. board configuration with all x's or 0's)

Minmax will be applied recursively to a state, unless:
1. Computer wins (+1)
2. Human wins (-1)
3. Game draw (0): No more tiles left to mark

Input: As an input you will be provided with a series of numbers: 1-9 which will correspond to the cell number. The mapping of numbers to the location is shown in above figure.
Code:
Notebook is shared with the pdf. So, you have to implement all function definitions in attached Notebook by creating its copy and repeat the same pattern for **Task 2. (alpha-beta Pruning)**

Task 2: Solve tic-tac-toe problem (explained above) using alpha-beta pruning algorithm.

The possible action can be calculated as shown in below figure: