

# INDEX

5th Semm  
"B"

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Roll No. \_\_\_\_\_ Subject \_\_\_\_\_ School/College \_\_\_\_\_

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[illegible]

complete!

Q 1 Write a program for Tic-Tac-Toe game:

```
import random
```

```
tic=[1,2,3,4,5,6,7,8,9]
```

```
def printBoard(tic):
```

```
    print(tic[0]+'|'+tic[1]+'|'+tic[2])
```

```
    print("-----")
```

```
    print(tic[3]+'|'+tic[4]+'|'+tic[5])
```

```
    print("-----")
```

```
    print(tic[6]+'|'+tic[7]+'|'+tic[8])
```

```
def isWinner(tic,pos):
```

```
    if tic[0]==tic[1] and tic[1]==tic[2] or
```

```
        tic[3]==tic[4] and tic[4]==tic[5] or
```

```
        tic[6]==tic[7] and tic[7]==tic[8]:
```

```
        return True
```

```
    else if tic[pos-3]==tic[pos-2] and tic[pos-2]==
```

```
        tic[pos-1]:
```

```
        return True
```

```
    else if tic[pos//3+1]==tic[pos//3+2] and tic[pos//3+2]==
```

```
        tic[pos//3+3]:
```

```
        return True
```

```
    return False
```

```
def update_user(tic):
```

```
    num = int(input("Enter a number on the board"))
```

```
    while (num not in tic):
```

```
        num = int(input("Enter a number on the board"))
```

```
    tic[num-1] = 'X'
```

```
def update_comp(tic):
```

```
    for i in tic:
```

```
        if i == 'X' and i != 'O':
```

```
            tic[i-1] = 'O'
```

```
            if (isWinner(tic, i-1) == True):
```

tic[i-1] = i

algorithm:-

- (i) make a board and initialize the value
- (ii) Make a winner function check for the winner possibilities
- (iii) Make a user function which will take no as input.
- (iv) make a computer function:
  - (i) Maximize computer wins
  - (ii) Maximize user wins
  - (iii) generate random position.
- (v) Now check for any condition after 5 steps as there can be 3 combination
- (vi) put main function  
put the board  
and shift b/w the user & computer.



output:-

```
[1, 2, 3, 4, 5, 6, 7, 8, 9]
+-----+
| 1 | 2 | 3 |
+-----+
| 4 | 5 | 6 |
+-----+
| 7 | 8 | 9 |
+-----+

computer's turn :
+-----+
| 0 | 2 | 3 |
+-----+
| x | 5 | 6 |
+-----+
| 7 | x | 9 |
+-----+

Your turn :
enter a number on the board :5
+-----+
| 0 | x | 0 |
+-----+
| x | 0 | 6 |
+-----+
| 7 | x | 9 |
+-----+

computer's turn :
+-----+
| 0 | x | 0 |
+-----+
| x | 0 | 6 |
+-----+
| x | x | 9 |
+-----+

Your turn :
enter a number on the board :9
+-----+
| 0 | x | 0 |
+-----+
| x | 0 | 6 |
+-----+
| x | x | 0 |
+-----+

winner is 0
```