17 - 11 - 23

Program 1: Implement Tic Tac Toe Game

```
board = ['' for x in range(10)]
def insert letter (letter, pos):
    board [pos] = letter

def space is free (pos):
    return board [pos] == ' '

def print Board (board):
    print ('   |   |')
    print ('' + board [1] + '|' + board [2] + '|' + board [3])
    print ('   |   |')
    print ('------')
    print ('   |   |')
    print ('' + board [4] + '|' + board [5] + '|' + board [6])
    print ('   |   |')
    print ('------')
    print ('   |   |')
    print ('' + board [7] + '|' + board [8] + '|' + board [9])
    print ('   |   |')

def isWinner (bo, le):
    return (bo[1] == le and bo[2] == le and bo[3] == le)
    or
    (bo[4] == le and bo[5] == le and bo[6] == le)
    or
    (bo[7] == le and bo[8] == le and bo[9] == le)
    or
    (bo[1] == le and bo[4] == le and bo[7] == le)
    or
    (bo[2] == le and bo[5] == le and bo[8] == le)
    or
    (bo[3] == le and bo[6] == le and bo[9] == le)
    or
    (bo[1] == le and bo[5] == le and bo[9] == le)
    or
    (bo[3] == le and bo[5] == le and bo[7] == le)
```

```
1 2 3
4 5 6
7 8 9
```

```python
def playerMove():
    run = True
    while run:
        move = int(input("Enter the position where you want to place:"))
        if(move > 0 and move < 10):
            if spaceIsFree(move):
                run = False
                insertLetter('X', move)
            else:
                print("Enter another position, this position is occupied.")
        else:
            print("Enter position within the range.")


def compMove():
    run = True
    while run:
        move = random.randrange(1, 10)
        if(move > 0 and move < 10):
            if spaceIsfree(move):
                run = False
                insertLetter('O', move)
            else:
                continue
        else:
            continue


def main():
    while (board.count(' ') < 10):
        playerMove()
        printBoard(board)
        if(isWinner(board, 'X')):
            print("You won")
            break
        else:
            compMove()
            printBoard(board)
            if(isWinner(board, 'O')):
                print("Computer won")
                break
    else:
        print("This is a tie")
```

```
PS C:\Users\neha2\OneDrive\Documents\NehaKamath_1BM21CS113_AILab> python
Would you like to go first or second? (1/2)
1
   |   |
---+---+---
   |   |
---+---+---
   |   |


Player move: (0-8)
0
 O |   |
---+---+---
   |   |
---+---+---
   |   |


 O |   |
---+---+---
   | X |
---+---+---
   |   |


Player move: (0-8)
1
 O | O |
---+---+---
   | X |
---+---+---
   |   |
```

```
 O | O | X
---+---+---
   | X |
---+---+---
   |   |


Player move: (0-8)
6
 O | O | X
---+---+---
   | X |
---+---+---
 O |   |


 O | O | X
---+---+---
 X | X |
---+---+---
 O |   |


Player move: (0-8)
5
 O | O | X
---+---+---
 X | X | O
---+---+---
 O |   |


 O | O | X
---+---+---
 X | X | O
---+---+---
 O |   | X
```

```
Player move: (0-8)
7
 o | o | X
---+---+---
 X | X | o
---+---+---
 o | o | X
The game was a draw.
```