Tic-Tac-Toe

Aim: The purpose of the program is to use the game using python.

Description:

About the Game:

Tic-tac-toe (American English), **noughts and crosses** (Commonwealth English and British English), or **Xs and Os**/"X'y O'sies" (Ireland), is a <u>paper-and-pencil game</u> for two players, *X* and *O*, who take turns marking the spaces in a 3×3 grid. The player who succeeds in placing three of their marks in a diagonal, horizontal, or vertical row is the winner. It is a <u>solved game</u> with a forced draw assuming <u>best play</u> from both players.

Code Explanation:

random module:

The random module is a built-in module to generate the pseudorandom variables. It can be used perform some action randomly such as to get a random number, selecting a random elements from a list, shuffle elements randomly, etc.

```
import random
```

```
def placemarker1():
      while True:
          a=input('Enter your marker correctly:')
          if a.lower() == 'x':
             print('Your marker is x')
             break
      return a
#Player1
def placemarker2():
      while True:
          b=input('Enter your marker correctly:')
          if b.lower() == 'o':
             print('Your marker is o')
             break
      return b
#Player2
def logic(k,c,d):
      \dot{j} = 0
       if k==1:
          d[1]=c
          print(' ----')
          print('| %s | %s | %s | '%(d[1],d[2],d[3]))
          print(' ----')
          print('| %s | %s | %s |'%(d[4],d[5],d[6]))
          print(' ----')
          print('| %s | %s | %s | '%(d[7],d[8],d[9]))
          print(' ----')
      elif k==2:
          d[2]=c
          print(' ----')
          print('| %s | %s | %s | '%(d[1],d[2],d[3]))
          print(' ----')
          print('| %s | %s | %s |'%(d[4],d[5],d[6]))
          print(' ----')
          print('| %s | %s | %s | '%(d[7],d[8],d[9]))
          print(' ----')
      elif k==3:
          d[3]=c
          print(' ----')
          print('| %s | %s | %s |'%(d[1],d[2],d[3]))
```

```
print(' ----')
   print('| %s | %s | %s | '%(d[4],d[5],d[6]))
   print(' ----')
   print('| %s | %s | %s |'%(d[7],d[8],d[9]))
   print(' ----')
elif k==4:
   d[4]=c
   print(' ----')
   print('| %s | %s | %s | '%(d[1],d[2],d[3]))
   print(' ----')
   print('| %s | %s | %s |'%(d[4],d[5],d[6]))
   print(' ----')
   print('| %s | %s | %s |'%(d[7],d[8],d[9]))
   print(' ----')
elif k==5:
  d[5]=c
   print(' ----')
   print('| %s | %s | %s |'%(d[1],d[2],d[3]))
   print(' ----')
   print('| %s | %s | %s |'%(d[4],d[5],d[6]))
   print(' ----')
   print('| %s | %s | %s |'%(d[7],d[8],d[9]))
   print(' ----')
elif k==6:
  d[6]=c
   print('----')
   print('| %s | %s | %s |'%(d[1],d[2],d[3]))
   print(' ----')
   print('| %s | %s | %s | '%(d[4],d[5],d[6]))
   print(' ----')
   print('| %s | %s | %s | '%(d[7],d[8],d[9]))
   print('----')
elif k==7:
  d[7] = c
   print(' ----')
   print('| %s | %s | %s |'%(d[1],d[2],d[3]))
   print(' ----')
   print('| %s | %s | %s |'%(d[4],d[5],d[6]))
   print(' ----')
   print('| %s | %s | %s |'%(d[7],d[8],d[9]))
   print(' ----')
```

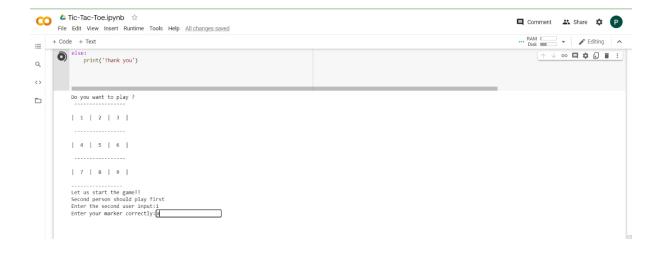
```
elif k==8:
          d[8]=c
          print(' ----')
          print('| %s | %s | %s |'%(d[1],d[2],d[3]))
          print(' ----')
          print('| %s | %s | %s | '%(d[4],d[5],d[6]))
          print('----')
          print('| %s | %s | %s |'%(d[7],d[8],d[9]))
          print('----')
      elif k==9:
          d[9] = c
          print(' ----')
          print('| %s | %s | %s | '%(d[1],d[2],d[3]))
          print(' ----')
          print('| %s | %s | %s |'%(d[4],d[5],d[6]))
          print(' ----')
          print('| %s | %s | %s |'%(d[7],d[8],d[9]))
          print(' ----')
      j=j+1
      return j
def users input():
   i=m=n=t=0
   r=random.randint(1,2)
   if r==1:
      print("First person should play first")
   else:
      print("Second person should play first")
   d={1:'',2:'',3:'',4:'',5:'',6:'',7:'',8:'',9:''}
   while True:
      def Player(A):
          while A>9 or d[A]!='':
             A=int(input('Enter the correct input it might be filled
or it might be greater thean the value 9:'))
             break
      def decision(d):
          p=q=0
```

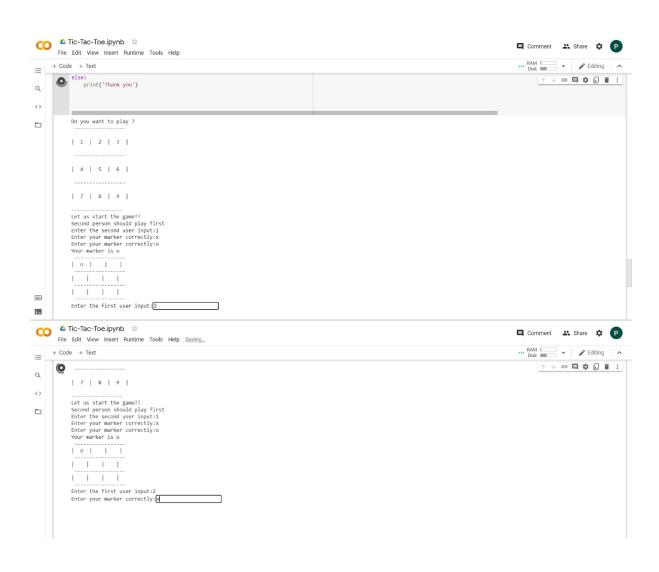
```
while True:
               if ((d[1]==d[2]==d[3]=='x') or (d[1]==d[5]==d[9]=='x')
or (d[4]==d[5]==d[6]=='x') or (d[7]==d[8]==d[9]=='x') or (d[1]==d[4]==d[9]=='x')
5] == d[7] == 'x')):
                   print('First player got a point and nearly going to
win')
                   p=p+1
                   pass
               if((d[1]==d[2]==d[3]=='o') or (d[1]==d[5]==d[9]=='o') o
r (d[4]==d[5]==d[6]=='o') or (d[7]==d[8]==d[9]=='o') or (d[1]==d[4]==d[7]
=='o') or (d[2]==d[8]==d[5]=='o') or (d[3]==d[9]=='o') or (d[3]==d[5]
==d[7]=='o')):
                   print('Second player got a point and nearly going t
o win')
                   q=q+1
                   pass
               if p==1 and q==1:
                   print('Tie between two players')
               break
           return p,q
       if r==1 or r%2!=0:
           A=int(input('Enter the first user input:'))
           Player(A)
           ch1=placemarker1()
           m=logic(A,ch1,d)
           n, t=decision(d)
       else:
           B=int(input('Enter the second user input:'))
           Player(B)
           ch2=placemarker2()
           m = logic(B, ch2, d)
           n, t=decision(d)
       r=r+1
       i=i+1
       if i==9:
           break
   return n, t
```

```
def Introduction():
    print('Do you want to play ?')
    create board()
    g,h=users input()
    if (g>h):
      print('Congratulations!Finally,First player won the match')
    elif(h>g):
      print('Congratulations!Finally, Second player won the match')
    elif h==g:
      print('Tie between two players')
#Main function
Introduction()
print('Do you want to play again?')
answer=input()
if answer.lower() == 'yes':
    Introduction()
else:
   print('Thank you')
```

OUTPUT:











In this way it goes on ...

Later, it shows the winner and if it is tie, it shows as the tie between both..

Finally it asks whether to play again or exiting from the game..