Practical no 7

#Design a program for creating a machine which accepts string

#having equal no of 1's and 0's in python.

```
def stateQ0(n,countzero,countone):
   print("Q0->", end="")
   if(len(n)==0):
      if(len(countone)==len(countone)):
        print("\n** String accepted **")
        print("\n string having equal no of 1's and 0's")
      else:
         print("\n** string rejected ***")
   else:
      if (n[0]=='0'):
         countzero.append('0')
         stateQ0(n[1:],countzero,countone)
      elif(n[0]=='1'):
         countzero.append('1')
         stateQ1(n[1:],countzero,countone)


def stateQ1(n,countzero,countone):
   print("Q1->", end="")
   if(len(n)==0):
      if(len (countzero)==len(countone)):
        print("\n** String accepted **")
        print("\n string having equal no of 1's and 0's")
      else:
         print("\n** string rejected ****")
```

```
    else:
        if (n[0]=='0'):
            countzero.append('0')
            stateQ0(n[1:],countzero,countone)
        elif(n[0]=='1'):
            countzero.append('1')
            stateQ0(n[1:],countzero,countone)


countzero=[]
countone=[]
#take number from user
n=input("Enter 0 and 1 sequence:")
print("Transition stste:")
stateQ0(n,countzero,countone)
```

o/p:-

```
========== RESTART: F:/shrusti07/TOC PRACT/pract5.py ==
Enter 0 and 1 sequence:100011
Transition stste:
Q0->Q1->Q0->Q0->Q0->Q1->Q0->
** String accepted **

 string having equal no of 1's and 0's
>>>
========== RESTART: F:/shrusti07/TOC PRACT/pract5.py ==
Enter 0 and 1 sequence:100001
Transition stste:
Q0->Q1->Q0->Q0->Q0->Q0->Q1->
** string rejected ****
>>>
```