Practical no 4

#Design a program for creating mavhine that accepts three consecutive one in python

Q1)

#Inside state Q0

```python
def stateQ0(inputstr):
    print("Q0->",end="")
    if(len (inputstr)<=2):
        print("string rejected")
    elif(inputstr[0]=='1'):
        stateQ1(inputstr[1:])
    elif(inputstr[0]=='0'):
        stateQ0(inputstr[1:])
```

#Inside State Q1

```python
def stateQ1(inputstr):
    print("Q1->",end="")
    if(len(inputstr)<=1):
        print("String rejected")
    elif(inputstr[0]=='0'):
        stateQ0(inputstr[1:])
    elif(inputstr[0]=='1'):
        stateQ2(inputstr[1:])
```

#Inside State Q2

```python
def stateQ2(inputstr):
    print("Q2->",end="")
    if(len(inputstr)<=0):
```

```python
            print("String rejected")
        elif(inputstr[0]=='1'):
            stateQ3(inputstr[1:])
        elif(inputstr[0]=='0'):
            if(len(inputstr)<2):
                print("string rejected")
            else:
                stateQ0(inputstr[1:])


def stateQ3(inputstr):
    print("Q3->",end="")
    if(len(inputstr)<=0):
        print("\n String accepted")
    elif(inputstr[0]=='1'):
        print("Q3->",end="")
        stateQ3(inputstr[1:])
    elif(inputstr[0]=='0'):
        print("Q3->",ens="")
        stateQ3(inputstr[1:])


inputstr=input("Enter a string of 1 and 0:")
lenstr=len(inputstr)
if lenstr<3:
    print("Enter a string of atleast 3 numbers")
elif inputstr=="111":
    print("Q0->Q1->Q2->Q3")
    print("string accepted.")
```
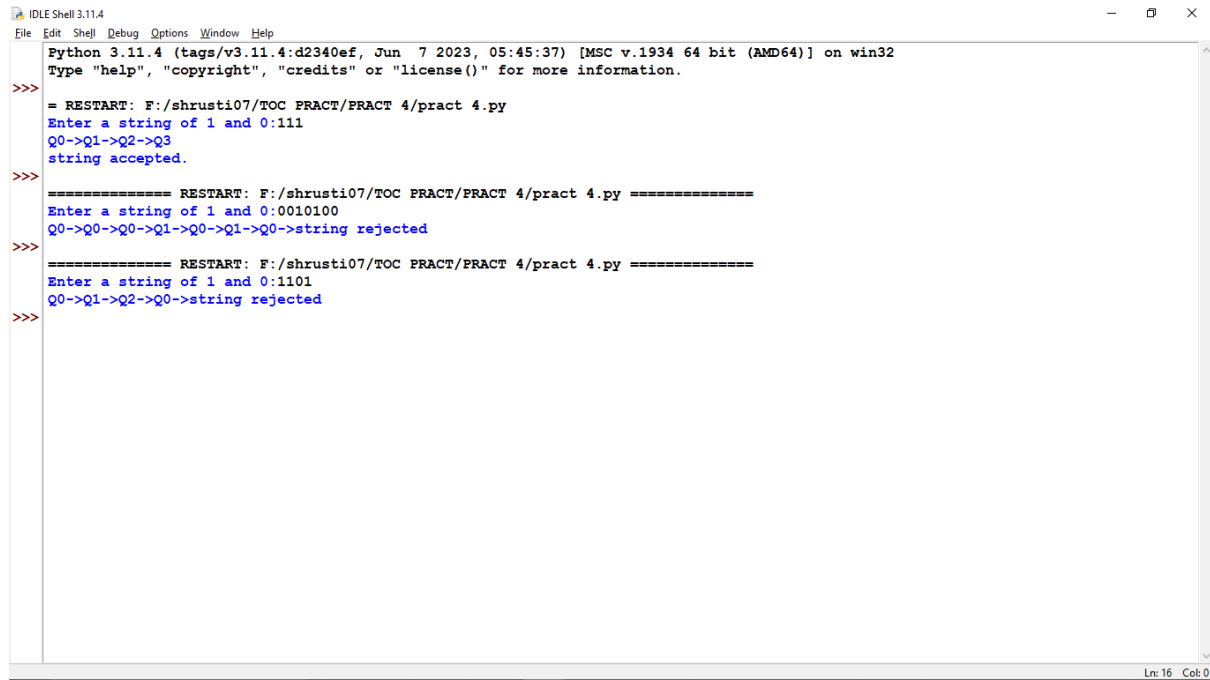
else:

    # call state Q0

    stateQ0(inputstr)

o/p:-

```
IDLE Shell 3.11.4
File  Edit  Shell  Debug  Options  Window  Help
    Python 3.11.4 (tags/v3.11.4:d2340ef, Jun  7 2023, 05:45:37) [MSC v.1934 64 bit (AMD64)] on win32
    Type "help", "copyright", "credits" or "license()" for more information.
>>>
    = RESTART: F:/shrusti07/TOC PRACT/PRACT 4/pract 4.py
    Enter a string of 1 and 0:111
    Q0->Q1->Q2->Q3
    string accepted.
>>>
    ============== RESTART: F:/shrusti07/TOC PRACT/PRACT 4/pract 4.py ==============
    Enter a string of 1 and 0:0010100
    Q0->Q0->Q0->Q1->Q0->Q1->Q0->string rejected
>>>
    ============== RESTART: F:/shrusti07/TOC PRACT/PRACT 4/pract 4.py ==============
    Enter a string of 1 and 0:1101
    Q0->Q1->Q2->Q0->string rejected
>>>
                                                                                    Ln: 16  Col: 0
```