ASSIGNMENT

1. Write a program to perform mathematical operations

Program:

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  #Joe Tom Thomas
#----------------------
def add1(lt1):  #function perform arithmetic operation addition
          #parameter is list of integers
    res=0
    for x in lt1:
      res=res+x
    return res  #returns sum integer


def sub(lt1):  #function perform arithmetic operation subtraction
          #parameter is list of integers
    res1=0
    l=len(lt1)
    for x in range(0,l):
      if(x==0):
        res1=lt1[x]
        continue
      res1=res1-lt1[x]
    return res1  #returns differnce integer


def mul(lt1):  #function perform arithmetic operation multiplication
          #parameter is list of integers
    res2=1
    for x in lt1:
      res2=res2*x
    return res2  #returns product integer


def div(lt1):  #function perform arithmetic operation division
          #parameter is list of integers
    res3=1
    l=len(lt1)
    for x in range(0,l):
      if(x==0):
        res3=lt1[x]
        continue
      res3=res3/lt1[x]
```

```python
        return res3  #returns quotient integer or float



def mod(lt1):   #function perform arithmetic operation modulus
            #parameter is list of integers
    res4=1
    l=len(lt1)
    for x in range(0,l):
        if(x==0):
            res4=lt1[x]
            continue
        res4=res4%lt1[x]
    return res4  #returns remainder integer



def operate():  #function to retrieve input
    print("1.Addition \n2.Subtraction \n3.Multiplication \n4.Division\n5.Modulus")
    try:
        no=int(input("choice b/w 1 to 5:")) #input for which operation to perform
        if(no>5)or (no<1):
            raise ValueError("Limit out of range......")    #if input out of range(less than 1 or greater
than 5)
    except ValueError as ve:
        print(ve)
        operate()
    except:
        print("Not Integer")    #if input not integer
        operate()
    try:
        lt=[]   #list for storing input numbers
        while True:
            lt.append(int(input())) #if input integer value appended in list
    except:
        print("Invalid value entered")  #if input not integer list appending stops
    v1=1    #set variable v1 to 1 for addition
    v2=2    #set variable v2 to 2 for subtraction
    v3=3    #set variable v3 to 3 for multiplication
    v4=4    #set variable v4 to 4 for division
    v5=5    #set variable v5 to 5 for modulus
    if no==v1:
        print("Sum is:",add1(lt))   #calls function add1 with parameter lt
        repeaton()
    elif no==v2:
        print("Diff is:",sub(lt))   #calls function sub with parameter lt
```

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        repeaton()
    elif no==v3:
        print("Mul is:",mul(lt))   #calls function mul with parameter lt
        repeaton()
    elif no==v4:
        print("Div is:",div(lt))   #calls function div with parameter lt
        repeaton()
    elif no==v5:
        print("Mod is:",mod(lt))   #calls function mod with parameter lt
        repeaton()
    else:
        print("error")

def repeaton(): #function for repeating arithmetic operation
    rp=input("Do you want to repeat Y/N:")
    if rp=='Y' or rp=='y':  #check input is 'Y' or 'y'
        operate()
    if rp=='N' or rp=='n':  #check input is 'N' or 'n'
        print("Stopped")
operate()
```

Output:

1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Modulus
choice b/w 1 to 5:1
5
6
.
Invalid value entered
Sum is: 11
Do you want to repeat Y/N:y
1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Modulus
choice b/w 1 to 5:2
6

.
Invalid value entered
6
Diff is: 6
Do you want to repeat Y/N:y
1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Modulus
choice b/w 1 to 5:3
6
5
2
.
Invalid value entered
Mul is: 60
Do you want to repeat Y/N:y
1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Modulus
choice b/w 1 to 5:4
8
2
2
.
Invalid value entered
Div is: 2.0
Do you want to repeat Y/N:y
1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Modulus
choice b/w 1 to 5:5
25
7
.
Invalid value entered
Mod is: 4
Do you want to repeat Y/N:n
Stopped

```
1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Modulus
choice b/w 1 to 5:1
8
9
5
.
Invalid value entered
Sum is: 22
Do you want to repeat Y/N:y
1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Modulus
choice b/w 1 to 5:3
4
5
2
3
1
.
Invalid value entered
Mul is: 120
Do you want to repeat Y/N:n
Stopped
>>> |
```