In [3]:
```
NAME:swetha.K
ROOL NO:235229143

1.Write a program in Python to input length and breadth of a rectangle and pri


l=8
b=3
area=l*b
print("the area of rectangle",area)
perimeter=2*(l+b)
print("the perimeter of rectangle",perimeter)
```

```
the area of rectangle 24
the perimeter of rectangle 22
```

In [ ]:
```
 2.Write a program, which accepts annual basic salary of an employee and calcu
    as per the following rules.
    If Basic is less than Rs. 1,50,000/-, then Tax = 0.
    If Basic is from Rs.1,50,000/-to Rs. 3,00,000/-, then tax is 20%. If Basi
    Print name, annual income and tax.
    Write test cases to validate all condition
```

In [6]:
```
name=input("enter name")
basic=int(input("enter annual basic salary of an employee"))
a=150000
b=300000
if(basic<a):
    tax1=0
    print("the annual income of", name,"is",basic,"and the tax is", tax1 )
elif((basic>=a) and (basic<=b)):
    tax2=(20/100)*basic
    print("the annual income of",name,"is",basic,"and the tax is", tax2)
elif(basic<b):
        tax3=(30/100)*basic
        print("the annual income of",name ,"is" ,basic, "and the tax is", tax3
```

```
enter nameswe
enter annual basic salary of an employee18000
the annual income of swe is 18000 and the tax is 0
```

3.Write a program to accept quantity and rate for three (3) items. Compute the total sales amount. Also compute and print the discount as follows: Amount > Rs. 2000/-: 20% discount Amount between Rs. 1500/-to Rs.1999/-:15% discount Amount between Rs. 1000/-to Rs.1499/-8 % discount Compute final amount to be paid. Print name, rate and quantity of 3 items. Then print total sales amount, total discount and final amount to be paid to shop. Write 3 test cases to validate all conditions

In [7]:
```
n=input("enter name")
q1=input("enter item1")
q2=input("enter item2")
q3=input("enter item3")
r1=int(input("cost of item1"))
r2=int(input("cost of item2"))
r3=int(input("cost of item3"))
tr=r1+r2+r3
if(tr>2000):
    discount=20/100
elif((tr>=1500) and (tr<=1999)):
    discount=15/100
elif((tr>=1000) and (tr>=1499)):
    discount(8/100)
fa=tr-discount
print(n)
print(tr)
print(discount)
print(fa)
```

```
enter nameswe
enter item1pen
enter item2pencil
enter item3bag
cost of item11100
cost of item21300
cost of item31400
swe
3800
0.2
3799.8
```

In [ ]:
```
4.Evaluate the expressions using Pen and Paper first and then print the value.
```

In [9]:
```
X1=(11+31+23+8+7+5)/((1-(1/2)-(1/20)))
print(X1)
X2=(((10*8)+8-((7//5)%(5**4)))&3)|(2<<1)
print(X2)
```

```
188.88888888888889
7
```

5.Write a program to accept name, marks for three subjects and find the total marks secured, average and also display the class obtained. Class I –above 80% Class II –60% to 80% Pass class –40% to 59% and Fail otherwise Print a message as “Congratulations <>, you secured a total of <>, and Your class is <>” Test you code with atleast 2 test cases

In [10]:
```
n=input("enter name")
m1=int(input("enter m1: "))
m2=int(input("enter m2: "))
m3=int(input("enter m3: "))
m=m1+m2+m3
average=m/3
if(m>80/100):
    print("Congratulations,",n,"you secured",m,"out of 300. You got class1")
elif((m>=60) and (m<=80)):
    print("Congratulations,",n,"you secured",m,"out of 300. You got class2")
elif((m>=40) and (m<=59)):
    print("Congratulations,",n,"you secured",m,"out of 300. You got class3")
else:
    print("you are failed")
```

```
enter nameswe
enter m1: 60
enter m2: 30
enter m3: 50
Congratulations, swe you secured 140 out of 300. You got class1
```

6.Read a number from keyboard. Print whether it is odd number, even number, positive number, negative numberor zero. Also, print if its ASCII value represents a lower case or upper case letter or digit. Write 8 test cases to validate odd, even,positive, negative, zero, lower case, upper case and digit input types

In [11]:
```
num=int(input("enter number"))
if(num%2==0):
    print("the given number is even")
else:
    print("the given number is odd")
if(num>0):
    print("the number is positive")
elif(num==0):
    print("the given number is zero")
else:
    print("the given number is negative")
x=type(num)
print("the input type is",x)
```

```
enter number540
the given number is even
the number is positive
the input type is <class 'int'>
```

8.Write a program that accepts numbers continuously as long as the number is positive and prints the sum of the numbers read (Use while loop).A sample user interaction will be:

In [12]:
```
x=0
while(True):
    num=int(input("enter a number"))
    if(num>0):
        x+=num
    else:
        break
print("sum",x)
```

```
enter a number2
enter a number1
enter a number4
enter a number6
enter a number-10
sum 13
```

9.Write a program to take the values of two integers mand nfrom the user. Calculate the sum of even number between mand n(including both m and n). Please note that value of mmust be less than value of n.If m > n. then you must print a message “Value of m should be less than n” and ask for next input values. Print the values of m, n andsum. (Use while loop). The program should continue until user types ‘q’to quit the program.

In [13]:
```
while(True):
    m=int(input("enter m"))
    n=int(input("enter n"))
    x=0
    if(m>=n):
        print("Value of m should be less than n")
    for i in range(m,n+1):
        if(i%2==0):
            x+=i
    print(x)
    a=input("do you want to continue?")
    if(a=='q'):
        print("quitting the program")
        break
```

```
enter m1
enter n10
30
do you want to continue?q
quitting the program
```

10.Write a program to accept nand display its multiplication table. Value ofnmust be provided by the user. (Example: n * 1, n * 2,....,n*10) (Use for loop)

In [14]:
```
n=int(input("enter a  number:"))
for count in range(1,11):

    print(count,"x",n,"=",count*n)
```

```
enter a  number:4
1 x 4 = 4
2 x 4 = 8
3 x 4 = 12
4 x 4 = 16
5 x 4 = 20
6 x 4 = 24
7 x 4 = 28
8 x 4 = 32
9 x 4 = 36
10 x 4 = 40
```

11.Write a program that receives an integer and prints the sum of its digits. For example, an input 125 will print output 1+2+5=8.

In [15]:
```
n=input("enter number: ")
s=0
for i in n:
    s=s+int(i)
    print(s)
```

```
enter number: 125
1
3
8
```

12. Develop an application in Python that repeatedly reads numbers until the user enters done. Once done is entered, print out the total, count, and average of the numbers. If the user enters anything other than a number, detect their mistake using try and except and print an error message and skip to the next number.

In [16]:
```
num = 0
tot = 0.0
while True:
    number = input("Enter a number")
    if number == 'done':
        break

    try :
        num1 = float(number)
    except:
        print('Invailed Input')
        continue
    num = num+1
    tot = tot + num1
print ('all done')
print ("total is",tot)
print("count is",num)
print("average is",tot/num)
```

```
Enter a number9
Enter a number7
Enter a number8
Enter a number5
Enter a numberdone
all done
total is 29.0
count is 4
average is 7.25
```

In [ ]:
```

```