In [1]:
```
#Suppose that Firm pays its employee at the rate of $12 per hour.
#An employee has worked for 37 hours How much should the firm pay the employee? (Do normal way directly takes the input
working_hrs=37
pay_per_hour=12

print('the firm pays the employee is:',working_hrs*pay_per_hour)
```

```
the firm pays the employee is: 444
```

In [14]:
```
#how about prompting the user for the number of hours and using the input value to compute the total pay?
# Above problem use eval concept and sep concept
rate=eval(input('enter rate:'))
hours=eval(input('enter hours:'))
total_pay=rate*hours
print('the firm pays employee is:',total_pay)
```

```
enter rate:12
enter hours:40
the firm pays employee is: 480
```

In [4]:
```
#for a certain academic subject the students are evaluated based on five tests
#Quiz 1 (20 marks-10% Weight
#* Quiz 2 (20 marks 10% Weight,
#Class test (30 marks 25% Weight Assignment (100 marks -25% weight and
#*Project (200 marks 30% weight)
#Design a program that will prompt the user for marks for each of the tests and calculate the overall marks out of 100.

quiz1=eval(input('enter marks for quiz1:'))
quiz2=eval(input('enter marks for quiz2:'))
class_test=eval(input('enter marks for class test:'))
project=eval(input('enter marks for project:'))
assignment=eval(input('enter marks for assignment:'))
overall=quiz1+quiz2+class_test+project+assignment/5
print('overall marks',overall)
test1=quiz1*10/100
test2=quiz2*10/100
test3=class_test*25/100
test4=project*30/100
test5=assignment*25/100
print('quiz1 percentage:',test1)
print('quiz2 percentage:',test2)
print('class test percentage:',test3)
print('project percentage:',test4)
print('assignment percentage:',test5)
per=test1+test2+test3+test4+test5
print('overall percentage is:',per)
```

```
enter marks for quiz1:18
enter marks for quiz2:19
enter marks for class test:27
enter marks for project:188
enter marks for assignment:77
overall marks 267.4
quiz1 percentage: 1.8
quiz2 percentage: 1.9
class test percentage: 6.75
project percentage: 56.4
assignment percentage: 19.25
overall percentage is: 86.1
```

In [2]:
```
#if a five digit number is input through the keyboard, write a program to calculate the sum of its digits

num=eval(input('enter a five digit number:'))
summ=0
a=num%10
num=num//10
summ=summ+a

a=num%10
num=num//10
summ=summ+a

a=num%10
num=num//10
summ=summ+a

a=num%10
num=num//10
summ=summ+a

a=num%10
summ=summ+a
print("sum of digits",summ)
```

```
enter a five digit number:91232
sum of digits 17
```

In [7]:
```
##if a five digit number is input through the keyboard, write a program to print a new number by adding one to each dig
# for example if the number that is input is 12371 then the output should be displayed as 23482.
num=eval(input('enter a five digit number:'))
a1=num%10
num=num//10

a2=num%10
num=num//10

a3=num%10
num=num//10

a4=num%10
num=num//10

a5=num%10
num=num//10
print(a5+1,end='')
print(a4+1,end='')
print(a3+1,end='')
print(a2+1,end='')
print(a1+1,end='')
```

```
enter a five digit number:12371
23482
```

In [8]:
```
##for a certain academic subject the students are evaluated based on five tests
#Quiz 1 (20 marks-10% Weight
#* Quiz 2 (20 marks 10% Weight,
#Class test (30 marks 25% Weight Assignment (100 marks -25% weight and
#*Project (200 marks 30% weight)
#Design a program that will prompt the user for marks for each of the tests and calculate the overall marks out of 100.

#score grade
#>=60 first class
#>=40 second class
#<40 fail
quiz1=eval(input('enter marks for quiz1:'))
quiz2=eval(input('enter marks for quiz2:'))
class_test=eval(input('enter marks for class test:'))
project=eval(input('enter marks for project:'))
assignment=eval(input('enter marks for assignment:'))
overall=quiz1+quiz2+class_test+project+assignment/5
print('overall marks',overall)
test1=quiz1*10/100
test2=quiz2*10/100
test3=class_test*25/100
test4=project*30/100
test5=assignment*25/100
print('quiz1 percentage:',test1)
print('quiz2 percentage:',test2)
print('class test percentage:',test3)
print('project percentage:',test4)
print('assignment percentage:',test5)
per=test1+test2+test3+test4+test5
print('overall percentage is:',per)
if per>=60:
    print('first class')
elif per>=40:
    print('second class')
else:
    print('fail')
```

```
enter marks for quiz1:15
enter marks for quiz2:18
enter marks for class test:27
enter marks for project:176
enter marks for assignment:98
overall marks 255.6
quiz1 percentage: 1.5
quiz2 percentage: 1.8
class test percentage: 6.75
project percentage: 52.8
assignment percentage: 24.5
overall percentage is: 87.35
first class
```

In [3]:
```python
#use conditional statements
# how about prompting the user for the num of hours and using the input value to compute the total pay
rate=eval(input('enter rate:'))
hours=eval(input('enter hours:'))
if hours>=24:
    print('the firm pays the employee is: ',rate*hours)

else:
    print('the firm pays the employee is: ',(rate-10)*hours)
```

```
enter rate:12
enter hours:21
the firm pays the employee is:  42
```

In [ ]:
```
```

In [4]:
```
##try and except
#rewrite the program using try and except so that program handles non umeric input gracefully by printing a msg and exi
#the following shoes execution of the prgrm.
#     enter hours:20
#     enter rate:nine
#     error,please enter numeric input
try:
    hours=eval(input('enter hours:'))
    rate=eval(input('enter rate:'))
    if hours>=24:
        print('the firm pays the employee is: ',rate*hours)
    else:
        print('the firm pays the employee is: ',(rate-10)*hours)
except:
    print('error please enter numeric input')
```

```
enter hours:12
enter rate:22
the firm pays the employee is:  144
```

In [18]:
```
#write a prgrm ask the user to enter a length in cm.
#if the user enters a negative length ,the prgrm should tell the user that the entry is invalid.
#otherwise the prgrm should convert the length to inches and printout results.there are 2.54 cm in inches

cm=eval(input('enter length in cm:'))
if cm<0:
    print('entry is invalid')
else:
    print('convert the length to inches',2.54*cm)
```

```
enter length in cm:-100
entry is invalid
```

In [5]:
```
#ask the user for a temperature
#then ask them what units,celsius,fahrenhit,the temp is in
#the prgrm sholud convert the temp to other unit
#the conversion are F=95C+32 and C=5/9(F-32)
temp=eval(input('enter the temp:'))
c=5/9*(temp-32)
f=9/5*c-32
if temp==c:
    print('temp to celsius is',c)
else:
    print('temp to fahrenhiet is',f)
```

```
enter the temp:32
temp to fahrenhiet is -32.0
```

In [1]:
```
#Ask the user to enter a temperature in Celsius. The program should print a message based on the temperature:
#If the temperature is less than -273.15, print that the temperature is invalid because it is below absolute zero.
#If it is exactly-273.15, print that the temperature is absolute 0.
#If the temperature is between-273.15 and 0, print that the temperature is below freezing
#if it is 0, print that the temperature is at the freezing point.
#•If it is between 0 and 100, print that the temperature is in the normal range.
#If it is 100, print that the temperature is at the boiling point.
#If it is above 100, print that the temperature is above the boiling point
temp=eval(input('enter temp: '))
celsius=(temp-32)*5/9
if temp<-273.15:
    print('temperature is invalid because it is below absolute zero')
elif temp==-273.15:
    print('temperature is absolute 0')
elif temp==0:
    print('temperature is at freezing point')
elif temp>=0 and temp<=100:
    print('temperature is in normal range')
elif temp==100:
    print('temperature is at boiling range')
elif temp>100:
    print('temperature is above the boiling point')
else:
    print('default')
```

```
enter temp: 38
temperature is in normal range
```

In [10]:
```python
#Write a program that asks the user how many credits they have taken.
#If they have taken 23 or less, print that the student is a freshman,
#if they have taken between 24 and 53, print that they are a sophomore.
#The range for juniors is 54 to 83, and for seniors it is 84 and over.
credits=eval(input('enter credits:'))
if credits<=23:
    print('student is a freshman')
elif credits<=53:
    print('student are a sophomore')
elif credits<=83:
    print('students are juniors')
else:
    print('students are seniors')
```

```
enter credits:120
students are seniors
```

In [9]:
```python
#Generate a random number between 1 and 10.
#Ask the user to guess the number and print a message based on whether they get it right or not
import random
num=random.randint(1,10)
number=eval(input('guess the number:'))
if num==number:
    print('right because the number is {}'.format(num))
else:
    print('wrong because the number is {}'.format(num))
```

```
guess the number:5
right because the number is 5
```

In [11]:
```
#A store charges $12 per item if you buy less than 10 items.
#If you buy between 10 and 99 items, the cost is $10 per item. If you buy 100 or more items, the cost is $7 per item.
#Write a program that asks the user how many items they are buying and prints the total cost
item=eval(input('enter  how many items they are buying:'))
if item<=10:
    print('the charge is',12*item)
elif item<=99:
    print('the charge is',10*item)
else:
    print('the charge is',7*item)
```

```
enter  how many items they are buying:6
the charge is 72
```

In [14]:
```
#Write a program that asks the user for two numbers and prints Close if the numbers are within .001 of each other
# and Not close otherwise
a=eval(input('enter a number:'))
b=eval(input('enter a number:'))
if abs(a-b)<=0.001:
    print('close')
else:
    print('not close')
```

```
enter a number:10.003
enter a number:10.002
close
```

In [17]:
```
#A year is a leap year if it is divisible by 4, except that years divisible by 100 are not leap years
#unless they are also divisible by 400.
#Write a program that asks the user for a year and prints out whether it is a leap year or not
year=eval(input('enter year:'))
if year%400==0:
    print(year,'is a leap year')
elif year%100==0:
    print(year,'is not a leap year')
elif year%4==0:
    print(year,'is a leap year')
else:
     print(year,'is not a leap year')
```

```
enter year:2001
2001 is not a leap year
```

In [18]:
```
#Write a program that asks the user to enter a number and prints out all the divisors of that number
#(Hint: the % operator is used to tell if a number is divisible by something
num=eval(input('enter a number:'))
for i in range(1,num+1):
    if(num%i==0):
        print(i)
```

```
enter a number:20
1
2
4
5
10
20
```

In [20]:
```
#asks them how many hours into the future they want to go.
#Print out what the hour will be that many hours into the future, printing am or pm as appropriate. An example is shown
#Enter hour: 8
#am (1) or pm (2) 1
#How many hours ahead? 5
#New hour: 1 pm
hour=eval(input('enter hour:'))
a=eval(input('enter am (1) or pm (2) :'))
h=eval(input('how many hours ahead:'))
new_hr=hour+h-12
if new_hr<0:
    print('new hour:',hour+h)
else:
    print('new hour:',new_hr)
```

```
enter hour:8
enter am (1) or pm (2) :1
how many hours ahead:5
new hour 1
```

In [ ]: