In [1]:
```
print("hello world!")
```

```
hello world!
```

In [2]:
```
print("hello world!")
```

```
hello world!
```

In [1]:
```
ca$h=5000
```

```
  File "<ipython-input-1-351b42bcdc1f>", line 1
    ca$h=5000
      ^
SyntaxError: invalid syntax
```

In [5]:
```
a="Roman"
print(a)
```

```
Roman
```

In [3]:
```
a="ary'an"
print(a)#if a use to use single cotetion
```

```
ary'an
```

In [11]:
```
x=36e3
print((x))
y=36E3
print(type(y))
```

```
36000.0
<class 'float'>
```

In [19]:
```
#if you convert a value in binary,octal,hexadecimal
a=0b1111#binary
print(a)
print(type(a))
b=0o723#octal
print(b)
c=0xABCD#hexadecimal
print(c)
bin(0o11)
print(bin(0o11))
```

```
15
<class 'int'>
467
43981
0b1001
```

In [17]:
```

```

```
<built-in function bin>
```

In [ ]:
```
# hello wolrd is fast execute!
```

In [6]:
```
a=100
print(type(a))#integer
```

```
<class 'int'>
```

In [8]:
```
b=45.0
print(type(b))#float
```

```
<class 'float'>
```

In [22]:
```
bin(0o11)#octal
```

Out[22]:
```
'0b1001'
```

In [23]:
```
bin(0o785)#error is come by 8 is not consider in octal
```

```
  File "<ipython-input-23-acd219e10f07>", line 1
    bin(0o785)
            ^
SyntaxError: invalid digit '8' in octal literal
```

In [36]:
```
a=bin(15)
```

In [38]:
```
a=10
b=20
c=a+b
print(c)
print(b)
```

```
30
20
```

In [43]:
```
list1=[1,2,3,4,5]
list1[0]=6
print(list1)
```

```
[6, 2, 3, 4, 5]
```

In [44]:
```
tuple1=(1,2,3,4,5)
tuple1[0]=6
print(tuple1)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-44-b3188037523e> in <module>
      1 tuple1=(1,2,3,4,5)
----> 2 tuple1[0]=6
      3 print(tuple1)

TypeError: 'tuple' object does not support item assignment
```

In [5]:
```
for i in range(1,12,2):
 print(i)
```

```
1
3
5
7
9
11
```

In [32]:
```
print(bin(15))
```

```
0b1111
```

In [21]:
```
bin(0x111)#hexa
```

Out[21]:
```
'0b100010001'
```

In [9]:
```
d={10:'luckey',20:'jay',10:'aryan',}#dict
print(d[10])
print(d[20])
print(type(d))
```

```
aryan
jay
<class 'dict'>
```

In [10]:
```
x={"apple","banana","cherry","oranage"}#set #unorder #unindex #do not allow to dupli
print(x)
```

```
{'apple', 'oranage', 'cherry', 'banana'}
```

In [13]:
```
print(20>8)
print(20==8)
print(20<8)
print(bool("abc"))       #boolean type
print(bool(""))
print(bool(120))
print(bool(0))
```

```
True
False
False
True
False
True
False
```

In [22]:
```
x=str(7)
y=int(7)
z=float(7)
```

In [15]:
```
a,b,c="ornage","banana","cherry"
print(a)
print(b)
print(c)
```

```
ornage
banana
cherry
```

In [24]:
```
a=1,2,3
print(a)
print(type(a))
a,b,c =1,2,3
print(a)
print(b)
print(c)
print(type(a))
print(type(b))
print(type(c))
```

```
(1, 2, 3)
<class 'tuple'>
1
2
3
<class 'int'>
<class 'int'>
<class 'int'>
```

In [25]:
```
a=20
b=20
c=a+b
print(c)
x="20"
y="20"
z=x+y
print(z)
```

```
40
2020
```

In [28]:
```
a=20
b=20
c=a*b
print(c)

x="20"
y=20
z=x*y
print(z)
```

```
400
20202020202020202020202020202020202020202020
```

In [44]:
```
a="python"
def test():
    global a   #global varible
    a="java"
    print(a)
test()
print(a)
```

```
java
java
```

In [45]:
```
def sum(x,y):
    c=x+y
    print(c)
a=10
b=20
sum(a,b) '''a and b sum of a 30'''#multiline comments
```

```
30
```

In [50]:
```
x=input("enter value")
print(x)
print(type(x))
```

```
enter value10
10
<class 'str'>
```

In [52]:
```
a=int(input("enter value of A:")) #take value from user
b=int(input("enter value of B:"))
c=a+b
print(c)
```

```
enter value of A:10
enter value of B:20
30
```

In [57]:
```
print(int(123.957))
```

```
123
```

In [58]:
```
print(int("true"))
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-58-8ccac2156352> in <module>
----> 1 print(int("true"))

ValueError: invalid literal for int() with base 10: 'true'
```

In [64]:
```
print(int(false))
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-64-7d56d1b61d97> in <module>
----> 1 print(int(false))

NameError: name 'false' is not defined
```

In [62]:
```
print(int("10"))
```

```
10
```

In [59]:
```
print(int(0B1111))
```

```
15
```

In [60]:
```
print(int(0B1111))
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-60-d69b2a855e10> in <module>
----> 1 print(int("0B1111"))

ValueError: invalid literal for int() with base 10: '0B1111'
```

In [61]:
```
print(int("ten"))
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-61-fe86acc464d3> in <module>
----> 1 print(int("ten"))

ValueError: invalid literal for int() with base 10: 'ten'
```

In [63]:
```
print(int("10.5"))
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-63-24a9cbdf48a8> in <module>
----> 1 print(int("10.5"))

ValueError: invalid literal for int() with base 10: '10.5'
```

In [65]:
```
print(float(123.957))
```

```
123.957
```

In [66]:
```
print(float("true"))
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-66-bf961938bb76> in <module>
----> 1 print(float("true"))

ValueError: could not convert string to float: 'true'
```

In [67]:
```
print(float(false))
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-67-6a6dbf8a1110> in <module>
----> 1 print(float(false))

NameError: name 'false' is not defined
```

In [68]:
```
print(float("10"))
```

```
10.0
```

In [69]:
```
print(float(0B1111))
```

```
15.0
```

In [75]:
```
print(bool(0))#boolean
print(bool(1))
print(bool(10))
print(bool(0.178))
print(bool("true"))
print(bool("false"))
print(bool(""))
print(str(10))#string
print(str(10.5))
print(str(True))
```

```
False
True
True
True
True
True
False
10
10.5
True
```

In [79]:
```
a=20
b=6
c=a/b
e=a//b
print(c)
print(e)
```

```
3.3333333333333335
3
```

In [80]:
```
a=int(input("enter value of A:")) #take value from user
b=int(input("enter value of B:"))
c=a+b
print(c)
d=a-b
print(d)
e=a*b
print(e)
f=a/b
print(f)
g=a//b
print(g)
h=a**b
print(h)
```

```
enter value of A:45
enter value of B:23
68
22
1035
1.9565217391304348
1
10565445565763117189322710037231445312 5
```

In [82]:
```
a=int(input("enter value of A:")) #take value from user
b=int(input("enter value of B:"))
c=a>b
print(c)
d=a<b
print(d)
```

```
e=a>=b
print(e)
f=a<=b
print(f)
g=a==b
print(g)
h=a!=b
print(h)
```

```
enter value of A:10
enter value of B:2
True
False
True
False
False
True
```

In [89]:
```
a="vishul"
b="vishal"
print(a>b)
print(a<b)
```

```
True
False
```

In [91]:
```
print(True<=True)
print(True>False)
print(10>True)
print(10<False)
print(10<20<30>40)
```

```
True
True
True
False
False
```

In [94]:
```
print( True and False)#booolean and logical oprator
print(True or False)
print( not True )
print(10 and 20)
print(0 and 20)
print(0 or 20)
print(not 10)
print(not 0)
```

```
False
True
False
20
0
20
False
True
```

In [99]:
```
a=20
b=30
x=50 if a>b else 60
print(x)
```

```
60
```

In [107…
```
a=int(input("enter value of A:")) #take value from user #swap a value progran
b=int(input("enter value of B:"))
c=a
a=b
```

```
b=c
print(a)
print(b)
```

```
enter value of A:40
enter value of B:10
10
40
```

In [1]:
```
a=int(input("enter value of A:")) #take value from user #swap a value progran for 2
b=int(input("enter value of B:"))
a=a+b
b=a-b
a=a-b
print()
```

```
enter value of A:1
enter value of B:2
```

In [2]:
```
x=10   #assignment operator
x+=20
x-=10
x*=5
x/=2
x//=5
x%=3
x**=2
print(x)
```

```
1.0
```

In [5]:
```
x="Hello,Python is very easy!"  # Membership Operator
print("d" not in x)
print("l" in x)
print("python" in x)
```

```
True
True
False
```

In [13]:
```
print(3+10*2) #operator precedence
print((3+10)*2)

print(5**3**2*5/True)
print((5**3)**2*5/True)
print("1"in"123" and "False" or True)
print(5 and True or 3/0)
print(7*25/True*False)
print(10/(1*3/6))
```

```
23
26
9765625.0
78125.0
False
True
0.0
20.0
```

In [23]:
```
# write a program find the area rectangle
base=int(input("Enter value of base of triangle"))
area=int(input("enter heights of triangle"))
ans=(1/2*base*Height)
print(ans)
```

```
Enter value of base of triangle12
enter heights of triangle12
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-23-271fd492a824> in <module>
      2 base=int(input("Enter value of base of triangle"))
      3 area=int(input("enter heights of triangle"))
----> 4 ans=(1/2*base*Height)
      5 print(ans)

NameError: name 'Height' is not defined
```

In [21]:
```
#weite a program to convert farheniet to celcius and celcius to farheniet
#c=(f-32)*(5/9)
F=float(input("enter a tempreture of farhenie"))
ans=(F-32)*(5/9)
print("tempreture in celcius is ", ans)

c=float(input("entee a temreture of celcius "))
ans=(9/6)*c+32
print("tempreture in farheniet is ", ans)
```

```
enter a tempreture of farhenie10.0
tempreture in celcius is  -12.222222222222223
entee a temreture of celcius 12
tempreture in farheniet is  50.0
```

In [20]:
```
#weite a python program to convert given base into year/month and days
Days=int(input("Enter number of days:"))
years=Days//365
months=(Days%365)//30
D=(Days%365)%30
print(years,"years",months,"Months",D,"Days")
```

```
Enter number of days:365
1 years 0 Months 0 Days
```

In [24]:
```
a=20
b=10
c=30
print(a>b and a>c)
print(a>b or a>c)
print(not a>b)
print(not a>c)
```

```
False
True
False
True
```

In [26]:
```
# write a python program to check given number is positive or nagitive
number=int(input("Enter number"))
print("Number is nagitive" if number < 0 else "enter value is positive")
```

```
Enter number1
enter value is positive
```

In [1]:
```
#write a python program to find the nu,mber of notes agaist a give amount
amount=int(input("Enter a amount"))
note=amount//500
print("500note",note)
note=(amount%500)//200
print("200note",note)
note=((amount%500)%200)//100
print("100note",note)
note=(amount%500%200%100)//50
print("50note",note)
```

```
note=(amount%500%200%100%50)//20
print("20mote",note)
note=(amount%500%200%100%20)//10
print("10note",note)
```

```
Enter a amount280
500note 0
200note 1
100note 0
50note 1
20mote 1
10note 0
```

In [30]:
```
name=input("enter name:")#chapter:2 #simple if
if name=="arman":
    print("hello arman")
print("thank you!")
```

```
enter name:vishal
thank you!
```

In [32]:
```
name=input("enter name:")#chapter:2 #simple if else
if name=="arman":
    print("hello arman")
else:
    print("helllo guest!")
print("thank you!")
```

```
enter name:vishal
helllo guest!
thank you!
```

In [34]:
```
a=int(input("enter value of a")) #find the maximum number from take to user by using
b=int(input("enter value of b"))
c=int(input("enter value of c"))
if(a>b and a>c):
    print("a is max")
elif(b>a and b>c):
    print("b is max")
else:
    print("c is max")
```

```
enter value of a10
enter value of b20
enter value of c30
c is max
```

In [3]:
```
x=41
if x>10:
    if x>20:
        print("and also above 20")
    else:
        print("bur not above 10")
```

```
and also above 20
```

In [17]:
```
#write a python program to check weather give year to ace leep year or not
#the year  must be divisible by 4 except for end of century years which must be disi
year=int(input("enter a year"))
if((year%4==0 and year%100!=0))or(year%400==0):
    print("year is leap year")
else:
    print("not a leap year")
```

```
enter a year2024
year is leap year
```

In [22]:
```
#write a python program to perform airthmatic operation accoding sign given as a cho
a=int(input("enter a value"))
b=int(input("enter b value"))
c=int(input("enter a operation (+,-,*,/,//,%,**)")
if c=='+':
      print("sum is:"a+b)
elif c=='-':
      print("subtraction is:",a-b)
elif c=='*':
      print("multipication is:,"a*b)
elif c=='/':
      print("divion is:",a/b)
elif c=='//':
      print("flor divion is:",a//b)
elif c=='%':
      print("module is:",a%b)
elif c=='**':
      print("power is:",a**b)
```

```
  File "<ipython-input-22-33abc75bcfcb>", line 5
    if c=='+':
            ^
SyntaxError: invalid syntax
```

In [21]:
```
#write a python program to enter 3 subject mark calculate percentage and display a g
a=int(input("enter a mark"))
b=int(input("enter a mark"))
c=int(input("enter a mark"))
percentage=((a+b+c)/300)*100
print("the percentage is",percentage)
if(percentage>=80):
    print("distinction",percentage)
elif(percentage>=60):
    print("first class:",percentage)
elif(percentage>=35):
    print("second divion",percentage)
elif(percentage>=0):
    print("fail",percentage)
```

```
enter a mark81
enter a mark36
enter a mark36
the percentage is 51.0
second divion 51.0
```

In [23]:
```
#write to program to chreck whether the last digit of the number entered by user div
num=int(input("enter a num"))

b=2367%10
if(b%3==0):
    print("number divisible by 3")
else:
    print("number not  divisible by 3")
```

```
enter a num2214
number not  divisible by 3
```

In [30]:
```
#write the program to calculate electricity bill accept number of unit from user
unit=int(input("enter a unit:"))
amt=0
if unit<=100:
    amt=0
elif (unit>100 and unit<=200):
```

```
    amt=(unit-100)*5
elif(unit>200):
    amt=500+(unit-200)*100
print("enter bill is:",amt)
```

```
enter a unit:101
enter bill is: 5
```

In [37]:
```
#write the program to accept cost price of by and calcualate road tax to be paid als
#>100000 #>50000 and <=100000 #<=50000
price=int(input("enter a pricre"))
if price>100000:
    roadtex=100000*0.15
elif price>500000 and price<=100000:
    roadtex=50000*0.10
elif price<=50000:
    roadtex=50000*0.5
print("the price is ",roadtex)
print("the final price is",price+roadtex)
```

```
enter a pricre100000
the price is  25000.0
the final price is 125000.0
```

In [40]:
```
num=int(input("enter a number:"))
count=0
for i in str(num):
    count+=1
print("lenght is :",count)
```

```
enter a number:145236789
lenght is : 9
```

In [46]:
```
#write to program to check whether number enter is 3 digit or not if the number 3 di
num=str(input("enter a number:"))
count=0
for i in num:
    count+=1
if(count==3):
    print("the middle digits of num ",num[1])
else:
    print("enter 3 digits number only")
```

```
enter a number:786
the middle digits of num  8
```

In [48]:
```
#write a program to accept the following from the user and calculate the percentgae
a=int(input("enter a workings days "))
b=int(input("enter a absend days"))
percentage=((a-b)/a)*100
print(percentage)
if(percentage>=75):
    print("eligible for exam")
else:
    print("not eligible for exam")
```

```
enter a workings days 45
enter a absend days2
95.55555555555556
eligible for exam
```

In [8]:
```
#write a python program to display fibonnaci sequance to end term
n=int(input("enter how many term required:"))
n1=0
```

```
n2=1
if n<=0:
    print("enter positive integer")
elif n==1:
    print("fibonnaci sequance")
else:
     print("fibonnaci sequance")
print(n1)
print(n2)
for i in range(n-2):
    nth=n1+n2
    print(nth)
    n=n2

    n2=nth
```

```
enter how many term required:1
fibonnaci sequance
0
1
```

In [18]:
```
#write a program to check even number prime or not
n=int(input("Enter number"))
flag=0
for i in range(2,n):
    if n%i==0:
        flag=1
        break
if flag==0:
    print(n,"is a prime number")
else:
    print(n,"is not a prime n number")
```

```
Enter number17
17 is a prime number
```

In [2]:
```
a=int(input("enter a starting value:"))
b=int(input("enter a ending value:"))

for n in range(a,b+1):
    flag=0
    for i in range(2,n):
        if n%i==0:
            flag=1
    if flag==0:
        print(n,end=" ")
```

```
enter a starting value:5
enter a ending value:20
5 7 11 13 17 19
```

In [53]:
```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,i+1):
         print("*",end="")
    print()
```

```
chr(65)
print(chr)
```

```
enter row:5
*
**
***
****
*****
<built-in function chr>
```

In [58]:
```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(0,i):
        print(chr(97+j),end=" ")

    print()
```

```
enter row:5
a
a b
a b c
a b c d
a b c d e
```

In [64]:
```
n=int(input("enter row:"))
k=1
for i in range(1,n+1):
    for j in range(0,i):
        print(k,end=" ")
        k+=1

    print()
```

```
enter row:5
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
```

In [71]:
```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        if i%2==0:
            print("#",end="")
        else:
            print("*",end="")
    print()
```

```
enter row:5
*
##
***
####
*****
```

In [74]:
```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        if (i+j)%2==0:
            print("0",end="")
        else:
            print("1",end="")
    print()
```

```
enter row:5
0
```

```
10
010
1010
01010
```

In [78]:
```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,n+2-i):
        print("*",end="")
    print()
```

```
enter row:5
*****
****
***
**
*
```

In [108…
```
n=(int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,(n+2)-i):
        print((i+j)%2,end="")

     print()
```

```
  File "<ipython-input-108-1c390d2d2b7d>", line 2
    for i in range(1,n+1):
                         ^
SyntaxError: invalid syntax
```

In [102…
```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(" ",end="")
    for k in range(i,n+1):
        print("*",end="")
    print()
```

```
enter row:5
 *****
  ****
   ***
    **
     *
```

In [103…
```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(" ",end="")
    for k in range(i,n+1):
        print(i,end="")
    print()
```

```
enter row:5
 11111
  2222
   333
    44
     5
```

In [118…
```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(" ",end="")
```

```
    for k in range(i,n+1):
        print(j,end="")
    print()
```

```
enter row:5
 11111
  2222
   333
    44
     5
```

In [120…

```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print("i",end="")
    for k in range(i,n+1):
        print(k,end=" ")
    print()
```

```
enter row:5
11 2 3 4 5
222 3 4 5
3333 4 5
44444 5
555555
```

In [115…

```
n=int(input("enter row:"))
for i in range(1,n+1):
    for j in range(1,n-i+1):
        print(" ",end=" ")
    for k in range(1,i+1):
        print("*",end=" ")
    print()
```

```
enter row:5
        *
      * *
    * * *
  * * * *
* * * * *
```

In [5]:

```
n=int(input("enter row:"))
k=64
for i in range(1,n+1):
    for j in range(1,i+1):
        print(chr(k),end=" ")
        k=k+1

    print()
```

```
enter row:5
@
A B
C D E
F G H I
J K L M N
```

In [6]:

```
#write a program integer exponed x such condition should be applay
a=int(input("enter the number whose power is needed:"))
n=int(input("enter the value of that:"))
m=1
x=0
while m!=n:
    x+=1
    m*=a
```

```
print(x)
```

```
enter the number whose power is needed:5
enter the value of that:25
2
```

In [7]:
```
#user define funcation
def wish(name):
    print("hello",name,"good morning")
wish("aryan")
wish("vishal")
```

```
hello aryan good morning
hello vishal good morning
```

In [9]:
```
#no parameter and no return type
def printline():
    s=input("enter name:")
printline()
```

```
enter name:vishal
```

In [10]:
```
#with parameter and no return type
def printline(s):
    print(s)
s=input("enter name:")
printline(s)
```

```
enter name:Vishal
Vishal
```

In [11]:
```
#with parameter and with return type
def printline(s):
    return s
x=input("enter name :")
t=printline(x)
print(t)
```

```
enter name :Vishal
Vishal
```

In [13]:
```
#no parameter and with return type
def printline():
    s=input("enter name :")
    return s

t=printline()
print(t)
```

```
enter name :Vishal
Vishal
```

In [14]:
```
#write a function accept two number and return sum of that two number
def add(a,b):
    return a+b
print("Addition",add(20,30))
print("Addition",add(30,15))
```

```
Addition 50
Addition 45
```

In [25]:
```
#write a function accept and print odd number between 1 to n
def odd(n):
    for i in range(2,n):
        if i%2==1:
            print(i,end=" ")
```

```
n=int(input("enter a number: "))
odd(n)
```

```
enter a number: 100
3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61
63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99
```

In [27]:
```
def cale(a,b ):
    sum=a+b
    sub=a-b
    mul=a*b
    div=a/b
    return sum,sub,mul,div
t=cale(10,20)
print(t)
print(type(t))
for i in t:
    print(i)
```

```
(30, -10, 200, 0.5)
<class 'tuple'>
30
-10
200
0.5
```

In [34]:
```
#docstring
def square(x):
    """arggument passed into x return square of x"""
    return x*x
print(square.__doc__)
print(square(5))
```

```
arggument passed into x return square of x
25
```

In [36]:
```
#positional argument
def sub(a,b):
    print(a-b)
sub(100,200)
sub(200,100)
```

```
-100
100
```

In [39]:
```
#keyword argument
def wish(name,msg):
    print("hello",name,msg)
wish(name="vishal",msg="goood morning")
wish(msg="good evening ",name="aryan")
wish("aryan",msg="good morning")
wish("vishal","good morning")
# wish(name="aryan","good evening")#error
```

```
hello vishal goood morning
hello aryan good evening
hello aryan good morning
hello vishal good morning
```

In [42]:
```
#default argument
def wish(name="vishal"):
    print("hello",name,"good morning")
wish("aryan")
wish()
```

```
hello aryan good morning
hello vishal good morning
```

In [43]:
```
#varible length argument
def sum(*n):
    total=0
    for n1 in n:
        total +=n1
    print("the sum=",total)
sum(10,20)
sum(10,20,30,40)
sum()
```

```
the sum= 30
the sum= 100
the sum= 0
```

In [47]:
```
#varible length argument
def f1(*s,n1):
    print(n1)
    for s1 in s:
        print(s1)
f1(10,20,30,40,n1=50)
```

```
50
10
20
30
40
```

In [58]:
```
def  display(**n):
    print(n)
    for k,v in n.items():
        print(k,v)
display(m1=200,m2=300,m3=400,m4=455)
```

```
{'m1': 200, 'm2': 300, 'm3': 400, 'm4': 455}
m1 200
m2 300
m3 400
m4 455
```

In [64]:
```
#write a program to demonstrate a simple calculator using funcation
a=int(input("enter a first num"))
b=int(input("enter a second num"))
cal=input("enter vlue(+,-,*,/,//,%)")
def calculator(cal):
    if(cal=='+'):
        print("a+b:",a+b)
    elif(cal=='-'):
        print("a-b:",a-b)
    elif(cal=='*'):
        print("a*b:",a*b)
    elif(cal=='/'):
        print("a/b",a/b)
    elif(cal=='%'):
        print("a%b",a%b)
    elif(cal=='//'):
        print("a//b:",a//b)
    elif(cal=='**'):
        print("a**b",a**b)
calculator(cal)
```

```
enter a first num25
enter a second num12
enter vlue(+,-,*,/,//,%)+
a+b: 37
```

In [66]:
```
#design a fun to check wheather a num in range or not
def range(num,start,end):
    if(num>start)and(num<end):
        print("yes")
    else:
        print("no")
range(10,12,15)
```

```
no
```

In [1]:
```
sum=0
count=0
while count>15:
    sum+=3
    if sum ==3:
        count+=5
    else:
        count+=9
else:
    count+=2
print(sum,count)
```

```
0 2
```

In [ ]:
```
x=0
while x<15:
    if x%3==0:
        x+=5
        continue
    if x%2==0:
        x+=14
    else:
        x+=1
else:
    x+=1
print(x)
```

In [9]:
```
#write a program to find enter number is happy num or not
a=int(input("enter number:"))
while a!=1 and a!=4:
    sum=0
    for i in str(a):
        sum+=int(i)**2
    a=sum
if a==1:
    print("happy number")
else:
    print("not a happy number")
```

```
enter number:10
happy number
```

In [ ]:
```
# disarium number
175=1**2 7**3 5**4
#increse a power
```

In [23]:
```
grade=input("enter grade")
city=input("enter a city")
```

```
if grade=='a':
    basic_pay=60000
    other_allowance=8000
elif grade=='b':
    basic_pay=50000
    other_allowance=7000
elif grade=='c':
    basic_pay=40000
    other_allowance=6000
elif grade=='d':
    basic_pay=30000
    other_allowance=5000
elif grade=='e':
    basic_pay=20000
    other_allowance=4000
elif grade=='f':
    basic_pay=10000
    other_allowance=3000
else:
    print("enter a valid number")


if city=='1':
    hra=basic_pay*0.3
elif city=='2':
    hra=basic_pay*0.2
elif city=='3':
    hra=basic_pay*0.1

da=0.5*basic_pay
ta=900
proffessional_pay=200
provisional_pay=0.11*basic_pay

gross_pay=basic_pay+hra+da+other_allowance+ta-proffessional_pay-provisional_pay
print("gross_pay is:",gross_pay)
annual_income=12*gross_pay
print("Annual Income:",annual_income)

if annual_income>=250000 and annual_income<=0:
    tax_rate=(0*annual_income)
elif annual_income>=250001 and annual_income<=500000:
    tax_rate=0.05*(annual_income-250000)
elif annual_income>=500001 and annual_income<=750000:
    tax_rate=0.10*(annual_income-750000)
elif annual_income>=7500001 and annual_income<=1000000:
    tax_rate=0.15*(annual_income-7500000)
elif annual_income>=1000001  and annual_income<=1250000:
    tax_rate=0.20*(annual_income-1000000)
elif annual_income>=1250001 and annual_income<=1500000:
    tax_rate=0.25*(annual_income-1250000)
elif annual_income>=1500000:
    tax_rate=0.30*annual_income
print("tax rate is:",tax_rate)
```

```
enter gradea
enter a city1
gross_pay is: 110100.0
Annual Income: 1321200.0
tax rate is: 17800.0
```

In [32]:

```
year=int(input("enter year"))
leap_year=False
if(year%4==0 and year%100!=0)or year%400==0:
    leap_year=True
```

```
month=int(input("enter month[1-12]:"))
if month in (1,3,5,7,8,10,12):
    lenth=31
elif month==2:
    if leap_year:
        length=29
    else:
        length=28
else:
    print("enter a valid day")
day=int(input("enter day[1-31]:"))
if day>length:
    print("enter valid day")
else:
    if day<length:
        day+=1
        print(f"The Next Date:{year}-{year}-{day}")
    else:
        day=1
        if month==12:
            month=1
            year+=1
        else:
            month+=1
        print(f"The Next Date:{year}-{month}-{day}")
```

```
enter year2024
enter month[1-12]:2
enter day[1-31]:20
The Next Date:2024-2024-21
```

In [29]:

```
  File "<ipython-input-29-461a34351b72>", line 10
    if month=12:
            ^
SyntaxError: invalid syntax
```