

# Python Practicals

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**Batch : A**

Q1) Add Three Numbers

**Code :**

```
number1 = int(input('Enter First number : '))
```

```
number2 = int(input('Enter Second number : '))
```

```
number3 = int(input('Enter Third number : '))
```

```
s = number1+number2+number3
```

```
print("\n Addition of three numbers = ",s)
```

**Screenshot :**

```
Select C:\Windows\system32\cmd.exe
C:\Users\mca\Desktop\PythonPracs>python Program3.py
Format is ax^2+bx+c and should be integer
Enter the values of a, b and c
Enter a : 3
Enter b : 5
Enter c : 1
Giver Equation : 3.000000 x**2 + 5.000000 x + 1.000000
There are 2 roots: -0.232488 and -1.434259
C:\Users\mca\Desktop\PythonPracs>python Program3.py
Format is ax^2+bx+c and should be integer
Enter the values of a, b and c
Enter a : 5
Enter b : 6
Enter c : -8
Giver Equation : 5.000000 x**2 + 6.000000 x + -8.000000
There are 2 roots: 0.800000 and -2.000000
C:\Users\mca\Desktop\PythonPracs>python Program1.py
Enter First number : 4
Enter Second number : 3
Enter Third number : 6
Addition of three numbers = 13
C:\Users\mca\Desktop\PythonPracs>
```

## Q2) To Swap two numbers

### Code :

```
number1 = int(input('Enter First number : '))
number2 = int(input('Enter Second number : '))

print("\nBefore swapping")
print("\nThis is number one = ",number1)
print("\nThis is number two = ",number2)

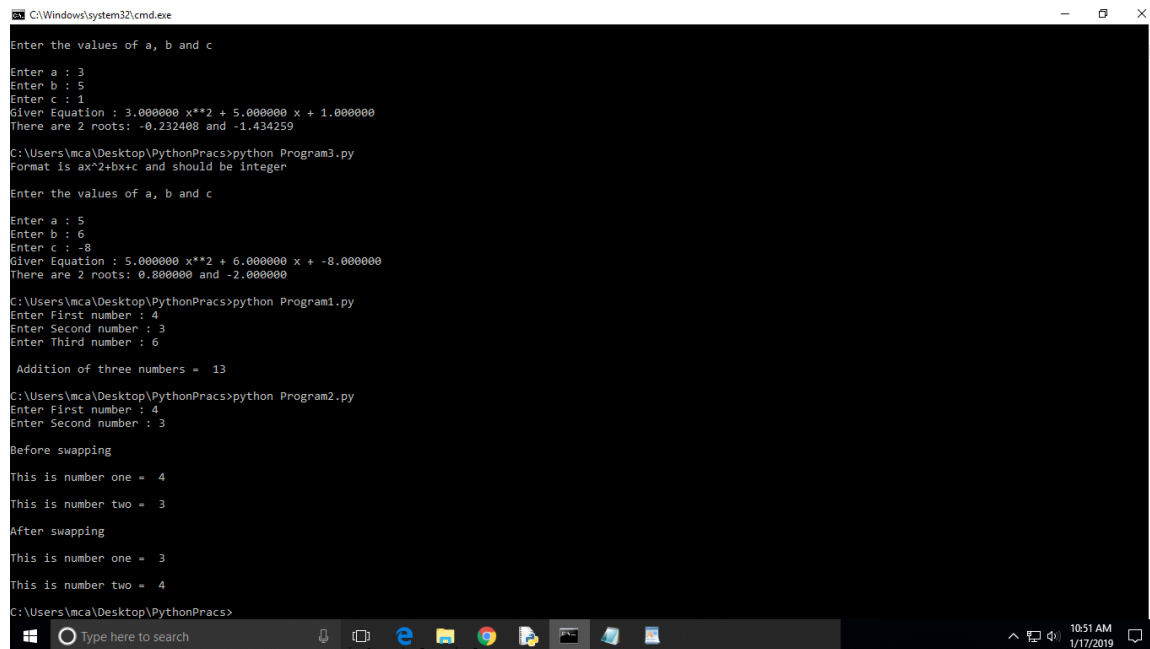
temp = number1
number1 = number2
number2 = temp
```

```
print("\nAfter swapping")
```

```
print("\nThis is number one =",number1)
```

```
print("\nThis is number two =",number2)
```

**Screenshot :**



```
C:\Windows\system32\cmd.exe
Enter the values of a, b and c
Enter a : 3
Enter b : 5
Enter c : 4
Given Equation : 3.000000 x**2 + 5.000000 x + 1.000000
There are 2 roots: -0.232408 and -1.434259

C:\Users\mca\Desktop\PythonPracs>python Program3.py
Format is ax^2+bx+c and should be integer
Enter the values of a, b and c
Enter a : 5
Enter b : 6
Enter c : -8
Given Equation : 5.000000 x**2 + 6.000000 x + -8.000000
There are 2 roots: 0.800000 and -2.000000

C:\Users\mca\Desktop\PythonPracs>python Program1.py
Enter First number : 4
Enter Second number : 3
Enter Third number : 6

Addition of three numbers = 13

C:\Users\mca\Desktop\PythonPracs>python Program2.py
Enter First number : 4
Enter Second number : 3

Before swapping
This is number one = 4
This is number two = 3

After swapping
This is number one = 3
This is number two = 4

C:\Users\mca\Desktop\PythonPracs>
```

**Q3) Calculate area of triangle given 3 sides of triangle**

**Code :**

```
import math
```

```
a = int(input('Enter First number : '))
```

```
b = int(input('Enter Second number : '))
```

```
c = int(input('Enter Third number : '))
```

```
p = a+b+c
```

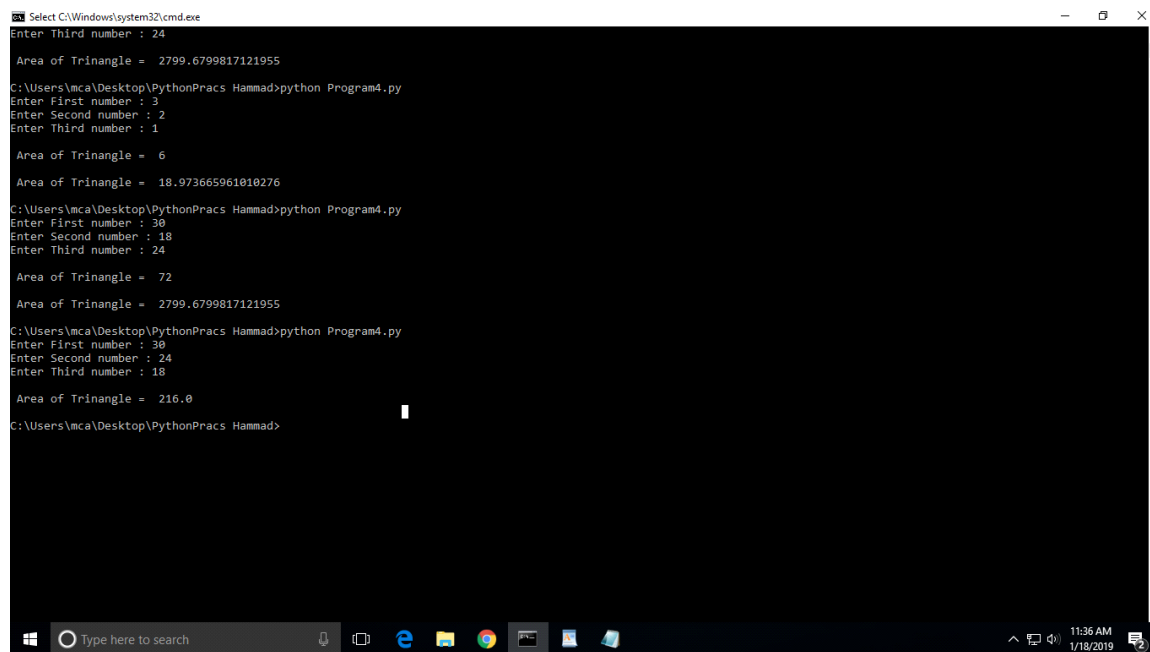
```
p = p/2
```

```
temp = p*(p-a)*(p-b)*(p-c)
```

```
area = math.sqrt(temp)
```

```
print("\n Area of Trinangle = ",area)
```

### Screenshot :



The screenshot shows a Windows command prompt window titled "Select C:\Windows\system32\cmd.exe". The window displays the execution of a Python program named "Program4.py" located at "C:\Users\mca\Desktop\PythonPracs Hammad\python Program4.py". The program prompts the user to enter three numbers (First, Second, and Third) and then calculates the area of a triangle using Heron's formula. The output shows the area for three different sets of inputs: (24, 3, 2) resulting in 2799.6799817121955, (6, 30, 18) resulting in 18.973665961010276, and (30, 24, 18) resulting in 216.0. The command prompt window is open on a Windows 10 desktop with the taskbar visible at the bottom.

```
Select C:\Windows\system32\cmd.exe
Enter Third number : 24
Area of Trinangle =  2799.6799817121955
C:\Users\mca\Desktop\PythonPracs Hammad>python Program4.py
Enter First number : 3
Enter Second number : 2
Enter Third number : 1
Area of Trinangle =  6
Area of Trinangle =  18.973665961010276
C:\Users\mca\Desktop\PythonPracs Hammad>python Program4.py
Enter First number : 30
Enter Second number : 18
Enter Third number : 24
Area of Trinangle =  72
Area of Trinangle =  2799.6799817121955
C:\Users\mca\Desktop\PythonPracs Hammad>python Program4.py
Enter First number : 30
Enter Second number : 24
Enter Third number : 18
Area of Trinangle =  216.0
C:\Users\mca\Desktop\PythonPracs Hammad>
```

Q4) Find the roots of the quadratic equation

### Code :

```
import math
```

```
print("Format is ax^2+bx+c and should be integer\n")
```

```
print("Enter the values of a, b and c \n")
```

```
a = float(input('Enter a : '))
```

```
b = float(input('Enter b : '))
```

```
c = float(input('Enter c : '))
```

```
print("Giver Equation : %f x**2 + %f x + %f "%(a,b,c))
```

```
u = b**2 - 4*a*c
```

```
u = math.sqrt(u)
```

```
r1 = (((-b) + u)/(2*a))
```

```
r2 = (((-b) - u)/(2*a))
```

```
print("There are 2 roots: %f and %f" % (r1, r2))
```

**Screenshot :**

```
C:\Windows\system32\cmd.exe
Enter the values of a, b and c
Enter a : 5
Enter b : 6
Enter c : -8
Giver Equation : 5.000000 x**2 + 6.000000 x + -8.000000
There are 2 roots: 0.800000 and -2.000000

C:\Users\mca\Desktop\PythonPracs>python Program1.py
Enter First number : 4
Enter Second number : 3
Enter Third number : 6

Addition of three numbers = 13

C:\Users\mca\Desktop\PythonPracs>python Program2.py
Enter First number : 4
Enter Second number : 3

Before swapping
This is number one = 4
This is number two = 3

After swapping
This is number one = 3
This is number two = 4

C:\Users\mca\Desktop\PythonPracs>python Program3.py
Format is ax^2+bx+c and should be integer
Enter the values of a, b and c
Enter a : 5
Enter b : 6
Enter c : -8
Giver Equation : 5.000000 x**2 + 6.000000 x + -8.000000
There are 2 roots: 0.800000 and -2.000000

C:\Users\mca\Desktop\PythonPracs>
```

Q5) To use bitwise operators

**Code :**

```
a = int(input('Enter First Number : '))
```

```
b = int(input('Enter Second Number : '))
```

```
print ("\n{0:b}".format(a))
```

```
print ("\n{0:b}".format(b))
```

```
c = a & b
```

```
print ("\nAND Operator {0:b}".format(c))
```

```
c = a | b
```

```
print ("\nOR Operator {0:b}".format(c))
```

```
c = a ^ b
```

```
print ("\nEXOR Operator {0:b}".format(c))
```

```
c = ~ a
```

```
print ("\nOnes Complement of a {0:b}".format(c))
```

```
c = ~ b
```

```
print ("\nOnes Complement of b {0:b}".format(c))
```

```
c = a << 3
```

```
print ("\nLeft operand value of a is shifted by 3 {0:b}".format(c))
```

```
c = a >> 3
```

```
print ("\nRight operand value of a is shifted by 3 {0:b}".format(c))
```

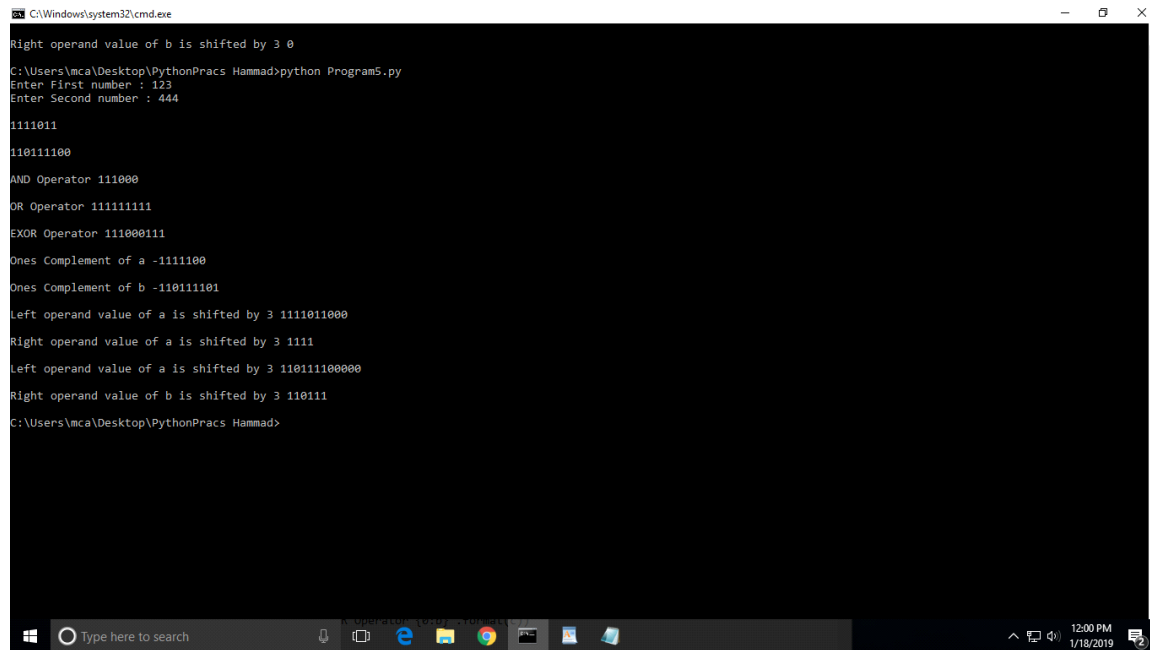
```
c = b << 3
```

```
print ("\nLeft operand value of a is shifted by 3 {0:b}".format(c))
```

```
c = b >> 3
```

```
print ("\nRight operand value of b is shifted by 3 {0:b}".format(c))
```

## Screenshot



```
C:\Windows\system32\cmd.exe
Right operand value of b is shifted by 3 0
C:\Users\mca\Desktop\PythonPracs Hammad>python Program5.py
Enter First number : 123
Enter Second number : 444
1111011
110111100
AND Operator 111000
OR Operator 111111111
EXOR Operator 111000111
Ones Complement of a -1111100
Ones Complement of b -110111101
Left operand value of a is shifted by 3 1111011000
Right operand value of a is shifted by 3 1111
Left operand value of a is shifted by 3 110111100000
Right operand value of b is shifted by 3 110111
C:\Users\mca\Desktop\PythonPracs Hammad>
```

Q6) To compute compound interest given all the required values.

**Code :**

```
p = float(input('Enter Principle Amount : '))
```

```
t = int(input('Enter Time in years : '))
```

```
r = float(input('Enter Rate of Interest : '))
```

```
si=(p*t*r)/100
```



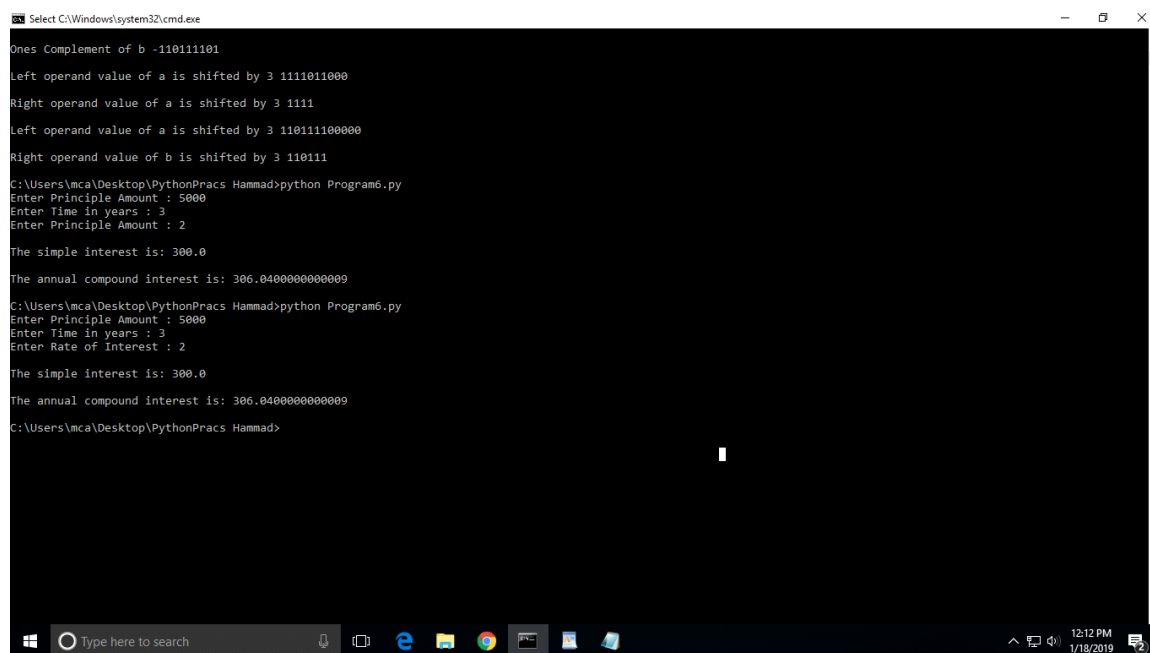
```
print("\nThe simple interest is:",si)
```

```
a = p*(1+(r/100))**t
```

```
ci = a-p
```

```
print("\nThe annual compound interest is:",ci)
```

## Screenshot



```
Select C:\Windows\system32\cmd.exe
Ones Complement of b -110111101
Left operand value of a is shifted by 3 1111011000
Right operand value of a is shifted by 3 1111
Left operand value of a is shifted by 3 110111100000
Right operand value of b is shifted by 3 110111
C:\Users\mca\Desktop\PythonPracs Hammad>python Program6.py
Enter Principle Amount : 5000
Enter Time in years : 3
Enter Principle Amount : 2
The simple interest is: 300.0
The annual compound interest is: 306.0400000000009
C:\Users\mca\Desktop\PythonPracs Hammad>python Program6.py
Enter Principle Amount : 5000
Enter Time in years : 3
Enter Rate of Interest : 2
The simple interest is: 300.0
The annual compound interest is: 306.0400000000009
C:\Users\mca\Desktop\PythonPracs Hammad>
```

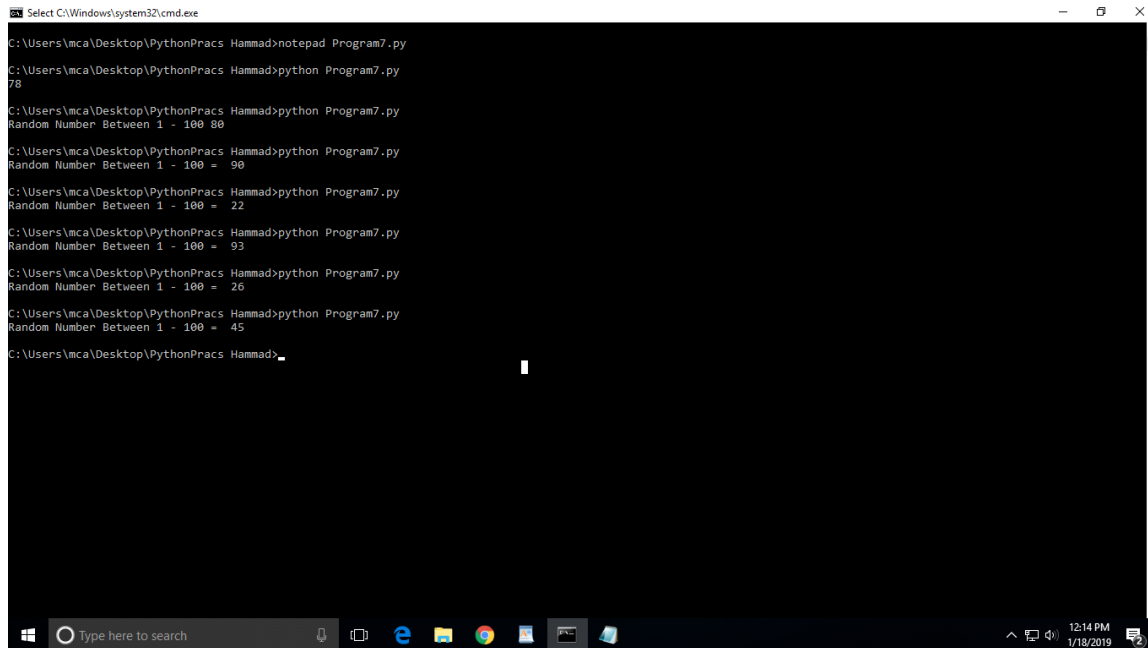
Q7) To generate a random number between 0 and 100

**Code :**

```
from random import randint
```

```
print("Random Number Between 1 - 100 =\t",randint(0, 100))
```

## Screenshot



```
Select C:\Windows\system32\cmd.exe

C:\Users\mca\Desktop\PythonPracs Hammad>notepad Program7.py

C:\Users\mca\Desktop\PythonPracs Hammad>python Program7.py
78

C:\Users\mca\Desktop\PythonPracs Hammad>python Program7.py
Random Number Between 1 - 100 = 80

C:\Users\mca\Desktop\PythonPracs Hammad>python Program7.py
Random Number Between 1 - 100 = 90

C:\Users\mca\Desktop\PythonPracs Hammad>python Program7.py
Random Number Between 1 - 100 = 22

C:\Users\mca\Desktop\PythonPracs Hammad>python Program7.py
Random Number Between 1 - 100 = 93

C:\Users\mca\Desktop\PythonPracs Hammad>python Program7.py
Random Number Between 1 - 100 = 26

C:\Users\mca\Desktop\PythonPracs Hammad>python Program7.py
Random Number Between 1 - 100 = 45

C:\Users\mca\Desktop\PythonPracs Hammad>_
```

Q8) To display calendar for the January 2019

**Code :**

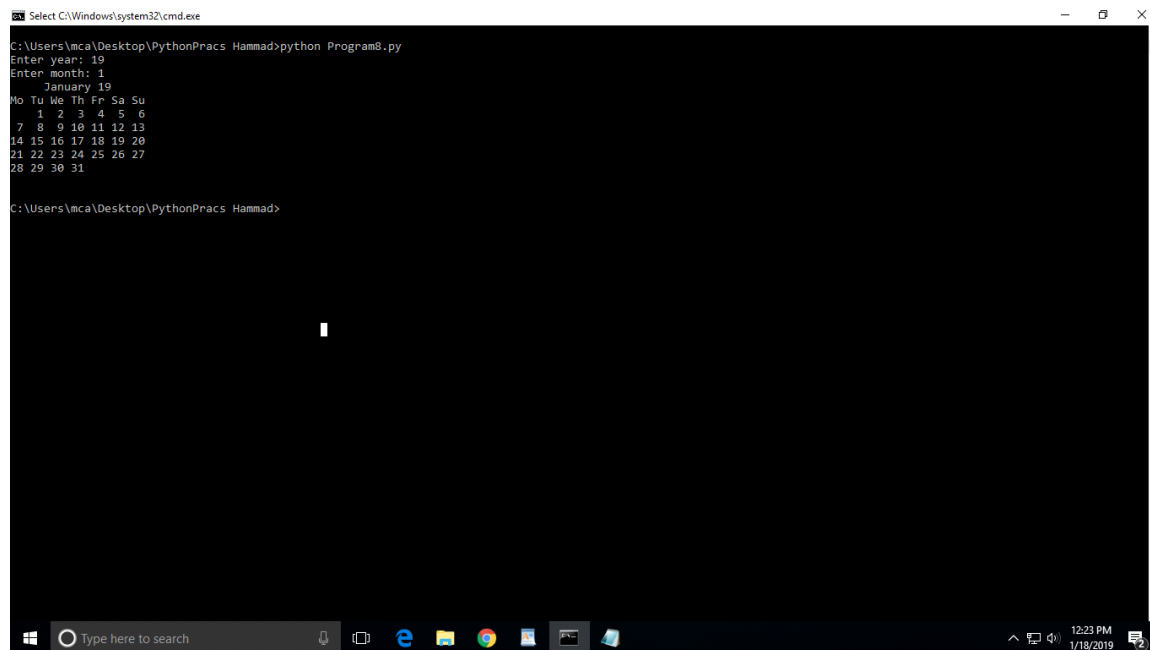
```
import calendar
```

```
year = int(input("Enter year: "))
```

```
month = int(input("Enter month: "))
```

```
print(calendar.month(year, month))
```

## Screenshot



```
Select C:\Windows\system32\cmd.exe
C:\Users\mca\Desktop\PythonPracs Hammad>python Program8.py
Enter year: 19
Enter month: 1
January 19
Mo Tu We Th Fr Sa Su
  1  2  3  4  5  6
 7  8  9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31

C:\Users\mca\Desktop\PythonPracs Hammad>
```

Q9) To add two binary numbers

**Code :**

```
a = int(input('Enter First Number : '))
```

```
b = int(input('Enter Second Number : '))
```

```
print ("\n a = {0:b}".format(a))
```

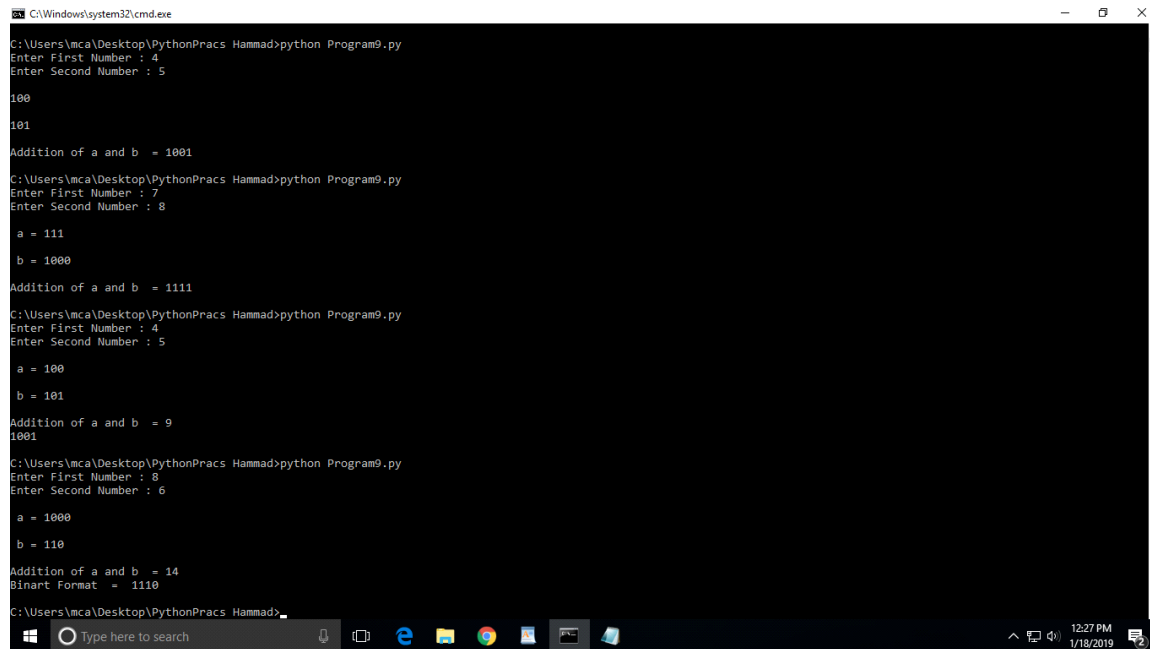
```
print ("\n b = {0:b}".format(b))
```

```
c = a + b
```

```
print ("\nAddition of a and b  =",c)
```

```
print ("Binart Format   =  {0:b}".format(c))
```

## Screenshot



```
C:\Windows\system32\cmd.exe
C:\Users\mca\Desktop\PythonPracs Hammad>python Program9.py
Enter First Number : 4
Enter Second Number : 5

100
101
Addition of a and b = 1001

C:\Users\mca\Desktop\PythonPracs Hammad>python Program9.py
Enter First Number : 7
Enter Second Number : 8

a = 111
b = 1000
Addition of a and b = 1111

C:\Users\mca\Desktop\PythonPracs Hammad>python Program9.py
Enter First Number : 4
Enter Second Number : 5

a = 100
b = 101
Addition of a and b = 9
1001

C:\Users\mca\Desktop\PythonPracs Hammad>python Program9.py
Enter First Number : 8
Enter Second Number : 6

a = 1000
b = 110
Addition of a and b = 14
Binant Format = 1110

C:\Users\mca\Desktop\PythonPracs Hammad>
```