Example 1: Add Two Numbers

```
# This program adds two numbers
num1 = 1.5
num2 = 6.3
# Add two numbers
sum = num1 + num2
# Display the sum
print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))
```

Example 2: Add Two Numbers With User Input

```
# Store input numbers
num1 = input('Enter first number: ')
num2 = input('Enter second number: ')

# Add two numbers
sum = float(num1) + float(num2)

# Display the sum
print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))
```

Example 3

```
# Python program to find the maximum of two numbers

def maximum(a, b):

    if a >= b:
        return a
    else:
        return b

# Driver code
a = 2
b = 4
print(maximum(a, b))
```

Example 4

```
#Python3 Program to find sum of square of first n natural numbers

def squaresum(n) :
    # Iterate i from 1
    # and n finding
    # square of i and
    # add to sum.
    sum = 0
    for i in range(1, n+1) :
        sum = sum + (i * i)

    return sum
```

EX.No. : 3 **RegNo:**

Date : **Name :**

Check whether a number is prime or not

AIM:

To write a program to check whether a number is prime or notin python.

PROGRAM:

```
# Program to check if a number is prime or not

num = 29

# To take input from the user
num = int(input("Enter a number: "))

# define a flag variable
flag = False
# prime numbers are greater than 1
if num > 1:
   # check for factors
   for i in range(2, num):
      if (num % i) == 0:
         # if factor is found, set flag to True
         flag = True
         # break out of loop
         break

# check if flag is True
if flag:
   print(num, "is not a prime number")
else:
   print(num, "is a prime number")
```

OUTPUT:

```
Enter a number: 5
5 is a prime number
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 4 **RegNo:**

Date : **Name :**

Make a Simple Calculator

AIM:

Python Program to Make a Simple Calculator.

PROGRAM:

```
def add(x, y):
return x + y

def subtract(x, y):
return x - y

def multiply(x, y):
return x * y

def divide(x, y):
return x / y

print("Select operation.")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")
```

```
while True:
choice = input("Enter choice(1/2/3/4): ")
if choice in ('1', '2', '3', '4'):
    num1 = float(input("Enter first number: "))
    num2 = float(input("Enter second number: "))
if choice == '1':
print(num1, "+", num2, "=", add(num1, num2))
elif choice == '2':
print(num1, "-", num2, "=", subtract(num1, num2))

elif choice == '3':
print(num1, "*", num2, "=", multiply(num1, num2))

elif choice == '4':
print(num1, "/", num2, "=", divide(num1, num2))
break
else:
print("Invalid Input")
```

OUTPUT:

```
Select operation.
1.Add
2.Subtract
3.Multiply
4.Divide
Enter choice(1/2/3/4): 1
Enter first number: 23
Enter second number: 45
23.0 + 45.0 = 68.0
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 5 **RegNo:**

Date : **Name :**

Find the Factorial of a Number

AIM:

To write a python program for Finding the Factorial of a Number.

PROGRAM:

```
num = int(input("Enter a number: "))
factorial = 1
# check if the number is negative, positive or zero
if num< 0:
  print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
  print("The factorial of 0 is 1")
else:
  for i in range(1,num + 1):
    factorial = factorial*i
  print("The factorial of",num,"is",factorial)
```

OUTPUT:

```
Enter a number: 5
The factorial of 5 is 120
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 6 **RegNo:**

Date : **Name :**

Python Program to Generate a Random Number

AIM:

To write a python Program for generating a Random Number

PROGRAM:

```
import random
a=[]
n=int(input("Enter number of elements:"))
for j in range(n):
    a.append(random.randint(1,20))
print('Randomised list is: ',a)
```

OUTPUT:

```
Enter number of elements:3
Randomised list is:  [8, 15, 18]
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 7 **RegNo:**

Date : **Name :**

Python Program to Display the multiplication Table

AIM:

TO write a Python Program for Displaying the multiplication Table.

PROGRAM:

```
x=int(input("Enter a number to generate a table"))
for i in range(1,11):
  print("{0} * {1} = {2}".format(i,x,i*x))
```

OUTPUT:

```
Enter a number to generate a table 5
1 * 5 = 5
2 * 5 = 10
3 * 5 = 15
4 * 5 = 20
5 * 5 = 25
6 * 5 = 30
7 * 5 = 35
8 * 5 = 40
9 * 5 = 45
10 * 5 = 50
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 8 **RegNo:**

Date : **Name :**

Python Program to Convert Decimal to Binary, Octal and Hexadecimal

AIM:

To Write a Python Program for Converting Decimal to Binary, Octal and Hexadecimal

PROGRAM:

```
dec = int(input("Enter Decimal number"))
print("The decimal value Entered ", dec, "is:")
print(bin(dec), "in binary.")
print(oct(dec), "in octal.")
print(hex(dec), "in hexadecimal.")
```

OUTPUT:

```
Enter Decimal number23
The decimal value Entered  23 is:
0b10111 in binary.
0o27 in octal.
0x17 in hexadecimal.
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 1 **RegNo:**

Date : **Name :**

Write a Python code to display system information using pywhois.

AIM:

To Write a Python code to display system information using pywhois

PROGRAM:

```
import platform
my_system =platform.uname()
print(f"System: {my_system.system}")
print(f"Node Name: {my_system.node}")
print(f"Release: {my_system.release}")
print(f"Version: {my_system.version}")
print(f"Machine: {my_system.machine}")
print(f"Processor: {my_system.processor}")
```

OUTPUT:

```
System: Windows
Node Name: DESKTOP-7ILF0RN
Release: 10
Version: 10.0.19041
Machine: AMD64
Processor: Intel64 Family 6 Model 165 Stepping 5, GenuineIntel
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 2 **RegNo:**

Date : **Name :**

The Magic 8 Ball is a toy used for fortune-telling or seeking advice.

AIM:

To a python program to generate the Magic 8 Ball is for fortune-telling or seeking advice.

PROGRAM:

```
import random
import time
eight_ball = [ "It is certain", "It is decidedly so", "Without a doubt", "Yes, definitely",
        "You may rely on it", "As I see it, yes", "Most Likely", "Outlook Good",
        "Yes", "Signs point to yes", "Reply hazy, try again", "Ask again later",
        "Better not tell you now", "Cannot predict now", "Concentrate and ask again",
        "Don't count on it", "My reply is no", "My sources say no", "Outlook not so good", "Very
Doubtful"]

def question():
question = input("You may ask your yes or no question of the Magic 8 Ball!\n")
print("Thinking...")
time.sleep(random.randrange(0,5))
print(random.choice(eight_ball))

while True:
question()
repeat = input("Would you like to ask another question? (Y or N)")
if not (repeat == "y" or repeat == "Y"):
print ("Come back if you have more questions!")
break
```

OUTPUT:

You may ask your yes or no question of the Magic 8 Ball!
WILL I GOTO SHOPPIG TODAY
Thinking...
My sources say no
Would you like to ask another question? (Y or N)Y
You may ask your yes or no question of the Magic 8 Ball!
WILL I GOTO COLLEGE TOMORROW
Thinking...
Signs point to yes
Would you like to ask another question? (Y or N)
Come back if you have more questions!

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 3 **RegNo:**

Date : **Name :**

Check whether a number is prime or not

AIM:

To write a program to check whether a number is prime or notin python.

PROGRAM:

```
# Program to check if a number is prime or not

num = 29

# To take input from the user
num = int(input("Enter a number: "))

# define a flag variable
flag = False
# prime numbers are greater than 1
if num > 1:
   # check for factors
   for i in range(2, num):
      if (num % i) == 0:
         # if factor is found, set flag to True
         flag = True
         # break out of loop
         break

# check if flag is True
if flag:
   print(num, "is not a prime number")
else:
   print(num, "is a prime number")
```

OUTPUT:

```
Enter a number: 5
5 is a prime number
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 4 **RegNo:**

Date : **Name :**

Make a Simple Calculator

AIM:

Python Program to Make a Simple Calculator.

PROGRAM:

```
def add(x, y):
return x + y

def subtract(x, y):
return x - y

def multiply(x, y):
return x * y

def divide(x, y):
return x / y

print("Select operation.")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")
```

```
while True:
choice = input("Enter choice(1/2/3/4): ")
if choice in ('1', '2', '3', '4'):
    num1 = float(input("Enter first number: "))
    num2 = float(input("Enter second number: "))
if choice == '1':
print(num1, "+", num2, "=", add(num1, num2))
elif choice == '2':
print(num1, "-", num2, "=", subtract(num1, num2))

elif choice == '3':
print(num1, "*", num2, "=", multiply(num1, num2))

elif choice == '4':
print(num1, "/", num2, "=", divide(num1, num2))
break
else:
print("Invalid Input")
```

OUTPUT:

```
Select operation.
1.Add
2.Subtract
3.Multiply
4.Divide
Enter choice(1/2/3/4): 1
Enter first number: 23
Enter second number: 45
23.0 + 45.0 = 68.0
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 5 **RegNo:**

Date : **Name :**

Find the Factorial of a Number

AIM:

To write a python program for Finding the Factorial of a Number.

PROGRAM:

```
num = int(input("Enter a number: "))
factorial = 1
# check if the number is negative, positive or zero
if num< 0:
  print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
  print("The factorial of 0 is 1")
else:
  for i in range(1,num + 1):
    factorial = factorial*i
  print("The factorial of",num,"is",factorial)
```

OUTPUT:

```
Enter a number: 5
The factorial of 5 is 120
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 6 **RegNo:**

Date : **Name :**

Python Program to Generate a Random Number

AIM:

To write a python Program for generating a Random Number

PROGRAM:

```
import random
a=[]
n=int(input("Enter number of elements:"))
for j in range(n):
    a.append(random.randint(1,20))
print('Randomised list is: ',a)
```

OUTPUT:

```
Enter number of elements:3
Randomised list is:  [8, 15, 18]
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 7 **RegNo:**

Date : **Name :**

Python Program to Display the multiplication Table

AIM:

TO write a Python Program for Displaying the multiplication Table.

PROGRAM:

```
x=int(input("Enter a number to generate a table"))
for i in range(1,11):
  print("{0} * {1} = {2}".format(i,x,i*x))
```

OUTPUT:

```
Enter a number to generate a table 5
1 * 5 = 5
2 * 5 = 10
3 * 5 = 15
4 * 5 = 20
5 * 5 = 25
6 * 5 = 30
7 * 5 = 35
8 * 5 = 40
9 * 5 = 45
10 * 5 = 50
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 8 **RegNo:**

Date : **Name :**

Python Program to Convert Decimal to Binary, Octal and Hexadecimal

AIM:

To Write a Python Program for Converting Decimal to Binary, Octal and Hexadecimal

PROGRAM:

```
dec = int(input("Enter Decimal number"))
print("The decimal value Entered ", dec, "is:")
print(bin(dec), "in binary.")
print(oct(dec), "in octal.")
print(hex(dec), "in hexadecimal.")
```

OUTPUT:

```
Enter Decimal number23
The decimal value Entered  23 is:
0b10111 in binary.
0o27 in octal.
0x17 in hexadecimal.
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 9 **RegNo:**

Date : **Name :**

Python Program to Transpose a Matrix

AIM:

TO WRITE A Python Program for Transposing a Matrix

PROGRAM:

```
X = [[12,7],
    [4 ,5],
    [3 ,8]]

result = [[0,0,0],
          [0,0,0]]

# iterate through rows
for i in range(len(X)):
   # iterate through columns
   for j in range(len(X[0])):
       result[j][i] = X[i][j]

for r in result:
   print(r)
```

OUTPUT:

[12, 4, 3]
[7, 5, 8]

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 10 **RegNo:**

Date : **Name :**

Python Program to Multiply Two Matrices

AIM:

To write a Python Program for Multiplying Two Matrices.

PROGRAM:

```
X = [[12,7,3],
   [4 ,5,6],
   [7 ,8,9]]
# 3x4 matrix
Y = [[5,8,1,2],
   [6,7,3,0],
   [4,5,9,1]]
# result is 3x4
result = [[0,0,0,0],
        [0,0,0,0],
        [0,0,0,0]]

for i in range(len(X)):
  for j in range(len(Y[0])):
      for k in range(len(Y)):
          result[i][j] += X[i][k] * Y[k][j]
for r in result:
  print(r)
```

OUTPUT:

[114, 160, 60, 27]

[74, 97, 73, 14]

[119, 157, 112, 23]

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 11 **RegNo:**

Date : **Name :**

Python Program to Check Whether a String is Palindrome or Not

AIM:

To write a Python Program for Checking Whether a String is Palindrome or Not

PROGRAM:

```
x = "malayalam"
w = ""
for i in x:
    w= i + w  #mal

if (x == w):
    print("Yes it is palindrome")
else:
    print("No,  it is NOT palindrome")
```

OUTPUT:

Yes it is palindrome

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 12 **RegNo:**

Date : **Name :**

Python Program to Sort Words in Alphabetic Order

AIM:

To write a Python Program for Sorting Words in Alphabetic Order

PROGRAM:

```
my_str = input("Enter a string: ")
words = [word.lower() for word in my_str.split()]
words.sort()
print("The sorted words are:")
for word in words:
  print(word)
```

OUTPUT:

```
Enter a string: I love Python an easy language to code
The sorted words are:
an
code
easy
i
language
love
python
to
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 13 **RegNo:**

Date : **Name :**

Python Program for Inheritance.

AIM:

To write a program for implementing inheritance Python

PROGRAM:

```
class addition:
 def __init__(self,x,y):
   self.x=x
   self.y=y
 def addi(self,x,y):
   return (x+y)

#object creation process
a=int (input("Enter a first Number: "))
b=int (input("Enter a second Number: "))
obj =addition(a,b)
print("Addition of two numbers : ",obj.addi(a,b))
```

OUTPUT:

```
Enter a first Number: 5
Enter a second Number: 7
Addition of two numbers :  12
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 14 **RegNo:**

Date : **Name :**

Python Program for Operator overloading.

AIM:

Python program To implement Operator overloading.

PROGRAM:

```
class A:
    def __init__(self, a):
        self.a = a

    # adding two objects
    def __add__(self, o):
        return self.a + o.a

ob1 = A(1)
ob2 = A(2)
ob3 = A("Python")
ob4 = A("overloading")

print(ob1 + ob2)
print(ob3 + ob4)
```

OUTPUT:

3

Pythonoverloading

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 15 **RegNo:**

Date : **Name :**

Python Program for Exception Handling.

AIM:

To write a Python Program for implementing Exception Handling.

PROGRAM:

```
a=int (input("Enter a first Number: "))
b=int (input("Enter a second Number: "))
try:
  k = a//b
  print(k)

except ZeroDivisionError:
  print("Can't divide by zero")
else :
   print(k)
finally:
    print('Program closed')
```

OUTPUT:

```
Enter a first Number: 5
Enter a second Number: 0
Can't divide by zero
```

Program closed

RESULT:

Thus the program has been verified and completed successfully.