DATA HANDLING

PROGRAMS

#Print Hello world!

```
print('Hello, world!')
```

#Add Two Numbers

```
num1 = float(input("enter first number"))
num2 = float(input("enter second number"))

# Add two numbers
sum = num1+num2

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

#Find the Square Root

```
no = float(input('Enter a number: '))
no_sqrt = no ** 0.5
print('The square root of %0.3f is %0.3f'%(no ,no_sqrt))
```

#Swap Two Variables using third variable

```
x = input('Enter value of x: ')
y = input('Enter value of y: ')
temp = x
x = y
y = temp
print('The value of x after swapping: ',x)
print('The value of y after swapping: ',y)
```

#Swap Two Variables without using third variable

```
x = input('Enter value of x: ')
y = input('Enter value of y: ')
x,y=y,x
print('The value of x after swapping: ',x)
print('The value of y after swapping: ',y)
```

#Calculate the Area of a Triangle(given base and height)

```
b = float(input('Enter base of a triangle: '))
h = float(input('Enter height of a triangle: '))
area = (b * h) / 2
print('The area of the triangle is %0.2f' % area)
```

#Generate a Random Number

```
import random
x=random.randint(0,9)
print(x)
```

#Solve Quadratic Equation

```
import math

# To take coefficient input from the users
a = float(input('Enter a: '))
b = float(input('Enter b: '))
c = float(input('Enter c: '))

# calculate the discriminant
d = (b**2) - (4*a*c)

# find two solutions
mq =d**0.5
sol1 = (- b - mq )/(2*a)
sol2 = (- b + mq)/(2*a)

print('The solution are {0} and {1}'.format(sol1,sol2))
```

#Convert Celsius To Fahrenheit

```
celsius = float(input("enter celsius"))
# calculate fahrenheit
fahrenheit = (celsius * 1.8) + 32
print('%0.1f degree Fahrenheit' %fahrenheit)
```

#convert degree to radian

```
pi=22/7
degree = float(input("Input degrees: "))
radian = degree*(pi/180)
print(radian)
```

#convert radian to degree

```
pi=22/7
radian = float(input("Input radians: "))
degree = radian*(180/pi)
print(degree)
```

#print a complex number and its real and imaginary parts

```
cn = complex(5,3)
print("Complex Number: ",cn)
print("Complex Number - Real part: ",cn.real)
print("Complex Number - Imaginary part: ",cn.imag)
```

#program to add, subtract, multiply and division of two complex numbers

```
print("Addition of two complex numbers : ",(5+3j)+(43-7j))
print("Subtraction of two complex numbers : ",(5+3j)-(4-7j))
print("Multiplication of two complex numbers : ",(5+3j)*(5-7j))
print("Division of two complex numbers : ",(5+3j)/(4-7j))
```

#simple interest

```
P = float(input("enter amount"))
R = float(input("enter rate"))
T = float(input("enter time"))
# Calculates simple interest
SI = (P * R * T) / 100
# Print the value of SI
print("simple interest is", SI)
```

#Compound Interest

```
principle=float(input("Enter principle amount:"))
time=int(input("Enter time duration:"))
rate=float(input("Enter rate of interest:"))
amount = (principle * (1 + (float(rate)/100))**time)
compound_interest=amount-principle;
print("Total amount:- ",amount)
print("Compound interest:- ",compound_interest)
```

#standard deviation

```
import math
xs = [0.6,0.5,0.4,0.6]     # values (must be floats!)
mean = sum(xs) / len(xs)   # mean
var  = sum(pow(x-mean,2) for x in xs) / len(xs)  # variance
std  = math.sqrt(var)  # standard deviation
print(std)
```