

AI Lab - Python Basics

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1)Python Program to Print Hello world!

In [1]:

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

Hello world!

2)Python Program to Add Two Numbers

In [2]:

```
print('Enter two numbers')
a,b=input().split()
a=int(a)
b=int(b)
sum=a+b
print('Sum=',sum)
```

Enter two numbers

2 4

Sum= 6

3)Python Program to Find the Square Root

In [3]:

```
import math
print('Enter a number')
a=int(input())
root=math.sqrt(a)
print('Square root=',root)
```

Enter a number

36

Square root= 6.0

4)Python Program to Calculate the Area of a Triangle

In [4]:

```
print('Enter the base and height')
b,h=input().split()
b=int(b)
h=int(h)
area=0.5*b*h
print('Area=',area)
```

Enter the base and height
4 10
Area= 20.0

5)Python Program to Solve Quadratic Equation

In [5]:

```
import math
print('Enter the coefficients in the order a,b,c')
a,b,c=input().split()
a=float(a)
b=float(b)
c=float(c)
root1=(-b+ math.sqrt(b**2-(4*a*c)))/(2*a)
root2=(-b- math.sqrt(b**2-(4*a*c)))/(2*a)
print('Roots are:',root1,', ',root2)
```

Enter the coefficients in the order a,b,c
1 4 4
Roots are: -2.0 , -2.0

6)Python Program to Swap Two Variables

In [6]:

```
print('Enter two values')
a,b=input().split()
print('Before swapping:a=',a,',b=',b)
c=a
a=b
b=c
print('After swapping:a=',a,',b=',b)
```

Enter two values
23 56
Before swapping:a= 23 ,b= 56
After swapping:a= 56 ,b= 23

7)Python Program to Generate a Random Number

In [7]:

```
import random
print(random.random())
```

0.3982453333210041

8)Python Program to Convert Kilometers to Miles

In [8]:

```
print('Enter distance in kilometres')
d=float(input())
print(d, ' kilometres=',d*0.6214, ' miles')
```

Enter distance in kilometres

19

19.0 kilometres= 11.8066 miles

9)Python Program to Convert Celsius To Fahrenheit

In [9]:

```
print('Enter temperature in celcius')
t=float(input())
f=(t*9/5)+32
print(t, ' degrees celcius=',f, ' degrees fahrenheit')
```

Enter temperature in celcius

27

27.0 degrees celcius= 80.6 degrees fahrenheit

10)Python Program to sort numbers in ascending and descending order

In [10]:

```
import random
num=[]
for i in range(0,10):
    num.append(random.randint(1,100))
print('Original List=',num)
asc=sorted(num)
print('Ascending Order=',asc)
asc.reverse()
print('Descending Order=',asc)
```

Original List= [89, 65, 85, 51, 76, 11, 35, 38, 81, 73]

Ascending Order= [11, 35, 38, 51, 65, 73, 76, 81, 85, 89]

Descending Order= [89, 85, 81, 76, 73, 65, 51, 38, 35, 11]