1. Assigning Values to Variables

```
counter = 100 # An integer assignment
miles = 1000.0 # A floating point
name = "John" # A string
print (counter)
print (miles)
print (name)
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
100
1000.0
John
```

2. Multiple Assignment

Python allows you to assign a single value to several variables simultaneously.
For example:

```
a = b = c = 1
a, b, c = 1, 2, "john"
```

Python Numbers

```
a = 5 # integer assignment
b= 4.56 #floating point assignment
print (5*a)
print (a/2)
print(a**2)
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
25
2.5
25
```

Python Strings

```
str = 'Hello World!'
print (str) # Prints complete string
print (str[0]) # Prints first character of the string
print (str[2:5]) # Prints characters starting from 3rd to 5th
print (str[2:]) # Prints string starting from 3rd character
print (str * 2) # Prints string two times
print (str + "TEST") # Prints concatenated string
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
Hello World!
H
llo
llo World!
Hello World!Hello World!
Hello World!TEST
```

```
var1 = 'Hello World!'
print ("Updated String :", var1[:6] + 'Python')
print( "My name is %s and weight is %d kg!" % ('Abay', 55))
str = "this is string example wow!!!";
print (str.capitalize())
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
Updated String : Hello Python
My name is Abay and weight is 55 kg!
This is string example wow!!!
```

```
str = "this is string example ... wow!!! this is really string";
print (str.replace("is", "was"))
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
thwas was string example ... wow!!! thwas was really string
```

```
str = "this is string example ... wow!!!";
print (str.swapcase())
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
THIS IS STRING EXAMPLE ... WOW!!!
```

```
str = "this is string example ... wow!!!";
print (str.title())
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
This Is String Example ... Wow!!!
```

```
list = [ 'abcd', 786 , 2.23, 'john', 70.2 ]
tinylist = [123, 'john']
print (list) # Prints complete list
print (list[0]) # Prints first element of the list
print (list[1:3]) # Prints elements starting from 2nd till 3rd
print (list[2:]) # Prints elements starting from 3rd element
print (tinylist * 2) # Prints list two times
print (list + tinylist) # Prints concatenated lists
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
['abcd', 786, 2.23, 'john', 70.2]
abcd
[786, 2.23]
[2.23, 'john', 70.2]
[123, 'john', 123, 'john']
['abcd', 786, 2.23, 'john', 70.2, 123, 'john']
```

```
list = ['physics', 'chemistry', 1997, 2000]
list.append("maths")
print (list) # Prints complete list
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
['physics', 'chemistry', 1997, 2000, 'maths']
```

```
list = ['physics', 'chemistry', 1997, 2000]
list.append("maths")
print (list) # Prints complete list
del list[2]
print (list)
len(list)
list.count("physics")
print (list)
list.pop()
print (list)
list.insert (2, "maths")
print (list)
list.remove("chemistry")
print (list)
```

```
list.reverse()
print (list)
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
['physics', 'chemistry', 1997, 2000, 'maths']
['physics', 'chemistry', 2000, 'maths']
['physics', 'chemistry', 2000, 'maths']
['physics', 'chemistry', 2000]
['physics', 'chemistry', 'maths', 2000]
['physics', 'maths', 2000]
[2000, 'maths', 'physics']
```

```
num = float(input("Enter a number:"))

if num > 0:
    print('Positive number')
elif num == 0:
    print('Zero')
else:
    print('Negative number')

x = float(input('Enter a number:'))

if x < 10:
    print('Smaller')
elif x > 20:
    print('Bigger')
else:
    print('Between 10 and 20')

print('Finished')
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
Enter a number:3
Positive number
Enter a number:5
Smaller
Finished
```

```
x = 5
print('Before 5')
if x == 5:
    print('this is 5')
    print('still 5')
print('After 5')
print('Before 6')
if x == 6:
    print('this is 6')
print('After 6')
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
Before 5
this is 5
still 5
After 5
Before 6
After 6
```

```
x = float(input('Enter a number:'))
if x < 20:
    print('Below 20')
elif x < 10:
    print('Below 10')
else:
    print('something else')
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
Enter a number:3
Below 20
210905189_Kushala@networklab:~/Desktop/210905189/lab1$
```

```
x = 42

if x > 1:
    print('above one')

if x < 100:
    print('less than 100')

print('All done')
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
above one
less than 100
All done
```

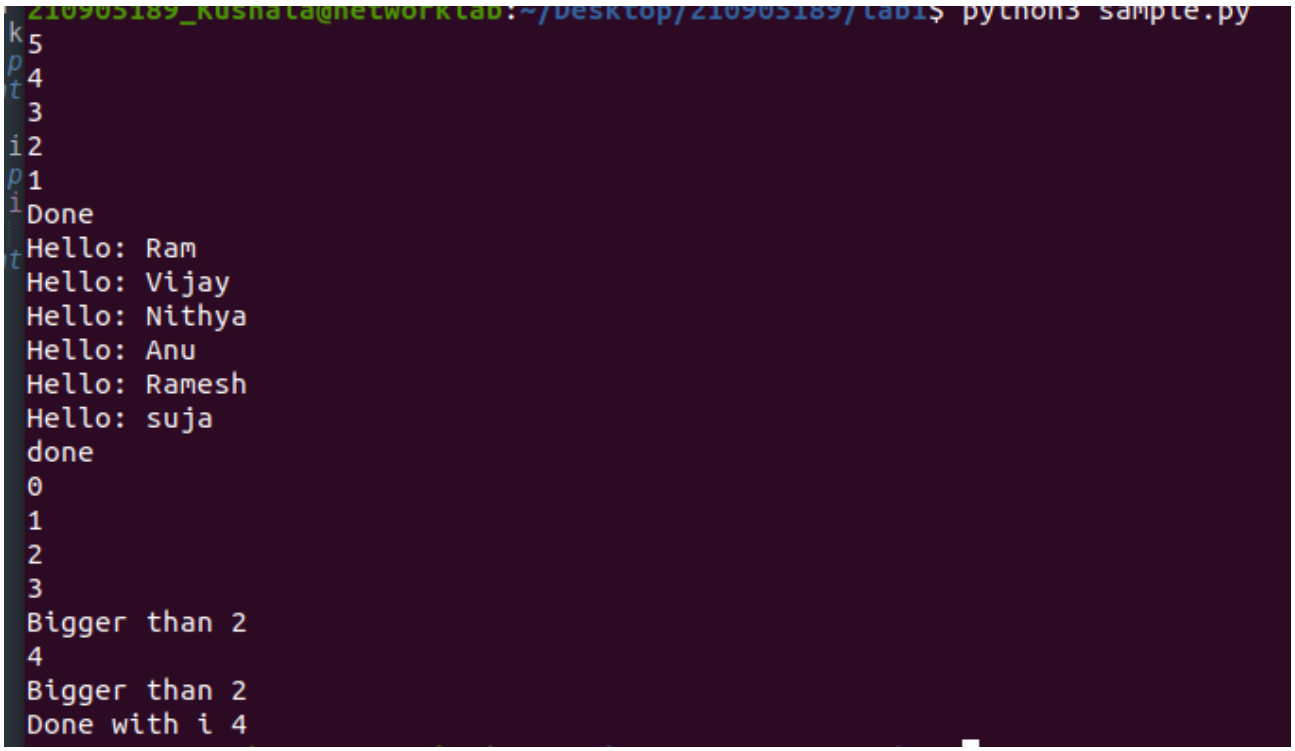
```
age=15
b=('kid' if age<18 else 'adult')
print(b)
#this will print ‘kid’
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
kid
```

```
for val in [5, 4, 3, 2, 1]:
    print(val)
print('Done')

stud = ['Ram', 'Vijay', 'Nithya', 'Anu', 'Ramesh', 'suja']
for k in stud:
    print('Hello:', k)
print('done')

for i in range(5):
    print(i)
    if i > 2:
        print('Bigger than 2')
print('Done with i', i)
```




```
from math import *

x = int(input('Enter a number:'))
for i in range(1, x+1):
    if x % i == 0:
        print(i)
x = 10

x = [9, 41, 12, 3, 74, 15]
Largest = -inf
for i in x:
    if i > Largest:
        Largest = i
print(Largest)

from math import *
x = [9, 41, 12, 3, 74, 15]
smallest = inf
for i in x:
    if i < smallest:
        smallest = i
print(smallest)


x = [9, 41, 12, 3, 74, 15]
count = sum = avg = 0
for i in x:
    count = count + 1
    sum = sum + i
avg = sum / count
print(count)
```

```
print(sum)
print(avg)

x = [9, 41, 12, 3, 74, 15]
for i in x:
    if i > 20:
        print(i)
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
Enter a number:4
1
2
4
74
3
6
154
25.666666666666668
41
74
```

```
x= [9, 41, 12, 3, 74, 15]
res=[]
for i in x:
    if i>20:
        res.append(i)

print(res)
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
[41, 74]
```

```
import numpy as np

x = np.array([10, 25, 15, 30, 5])
y = np.zeros(len(x))

for i in range(len(x)):
    if x[i] > 20:
        y[i] = x[i]

print(y)
```

```
[ 0. 25.  0. 30.  0.]
```

```
price = 100
if price > 100:
    print("price is greater than 100")
elif price == 100:
    print("price is 100")
elif price < 100:
    print("price is less than 100")
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
price is 100
```

```
# initialize the variable
```

```
i = 1
n = 5
# while loop from i = 1 to 5
while i <= n:
    print(i)
    i = i + 1
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
1
2
3
4
5
210905189_Kushala@networklab:~/Desktop/210905189/lab1$
```

```
total = 0
number = int(input('Enter a number: '))

# add numbers until the entered number is zero
while number != 0:
    total += number  # total = total + number
    # take integer input again
    number = int(input('Enter a number: '))

print('total =', total)
```

```
210905189_Kushala@networklab:~/Desktop/210905189/lab1$ python3 sample.py
Enter a number: 3
Enter a number: 4
Enter a number: 5
Enter a number: 6
Enter a number: 7
Enter a number: 0
total = 25
```