**190905514** **MOHAMMAD TOFIK** **BATCH : C2**
**SECTION : C** **SEM : 6th** **ROLLNO : 62**

## WEEK1-DS-LAB

## LAB EXCERCISE :

(1).Assign to Variable

```
from typing import Counter
counter = 100
miles = 1000
name = "Mohammad Tofik"
print(counter)
print(miles)
print(name)
```

```
File  Edit  View  Search  Terminal  Help
$ python3 AssignToVar.py
100
1000
Mohammad Tofik
$
```

(2).Multiple Assignment

```
a = b = c = 1
a, b, c = 1, 2, "john"
print(a)
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 MultiAss.py
1
~/190905514/DSLAB/LAB1$
```

(3).Numbers

```
a = 5
b = 4.56
print(5 * a)
print(a / 2)
print(a ** 2)
```

```
~/190905514/DSLAB/LAB1$ python3 Number.py
25
2.5
25
~/190905514/DSLAB/LAB1$
```

(4).Python Strings:

```
str = 'Hello Wolrd'
print(str)
print(str[0])
print(str[2:5])
print(str[2:])
print(str * 2)
print(str + "TEST")

var1 = 'Hello Wolrd'
print('Updated String is :',var1[:6] + 'Python')


print("My name is = %s and weight is = %d !" %('Anitha', 55))

str = "this is string example"
print(str.capitalize())
print(str.count('s'))

print(str.find('example'))

print(str.replace("is","was"))

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

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

```
~/190905514/DSLAB/LAB1$ python3 pyString.py
Hello Wolrd
H
llo
llo Wolrd
Hello WolrdHello Wolrd
Hello WolrdTEST
Updated String is : Hello Python
My name is = Anitha and weight is = 55 !
This is string example
3
15
thwas was string example
THIS IS STRING EXAMPLE ... WOW!!!
This Is String Example...Wow
~/190905514/DSLAB/LAB1$
```

**(5).Python Lists :**

```
list = ['abcd', 786, 2.23, 'john', 70.2]
tinyList = [123, 'john']
print(list)
print(list[0])
print(list[1:3])
print(list[2:])
print(tinyList * 2)
print(list + tinyList)

list =['physics','chemistry',1997,2000]
print(list)
list.append('maths')
print(list)
print(list.count('physics'))

list = ['physics', 'chemistry', 1997, 2000]
list.pop()
print(list)

list = ['physics','chemistry',1997,2000]
list.insert(2,'maths')
print(list)

list = ['physics','chemistry',1997,2000]
list.remove('chemistry')
print(list)

list = ['physics','chemistry',1997,2000]
list.reverse()
print(list)
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 pythonList.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']
['physics', 'chemistry', 1997, 2000]
['physics', 'chemistry', 1997, 2000, 'maths']
1
['physics', 'chemistry', 1997]
['physics', 'chemistry', 'maths', 1997, 2000]
['physics', 1997, 2000]
[2000, 1997, 'chemistry', 'physics']
~/190905514/DSLAB/LAB1$
```

(6).Python tuples:

```
tuple = ('abcd', 786, 2.23, 'jhon', 70.2)

list = [ 'abcd', 768, 2.23, 'john', 70.2]
list[2] = 1000
print(list)
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 pythonTuples.py
['abcd', 768, 1000, 'john', 70.2]
~/190905514/DSLAB/LAB1$
```

(7)

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

if num > 0 :
print("Pos number ")
elif num == 0:
print('Zero')
else:
print('Negative Number')
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 ex1.py
Enter a number : 12.3
Pos number
~/190905514/DSLAB/LAB1$
```

(8)

```
x = float(input('Enter a number'))
if x < 0:
print("smaller")
if x > 20:
print('Bigger')
print('Finished')
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 ex2.py
Enter a number123.3
Bigger
Finished
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(9)

```
x = 5
print('Before 5')
if x == 5:
print('This is 5')
print('Stil 5')
print('After 5')
print('Before 6')
if x == 6:
print('This is 6')
print('After 6')
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 ex3.py
Before 5
This is 5
Stil 5
After 5
Before 6
~/190905514/DSLAB/LAB1$
```

(10)

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

```
┌─[mohammadtofik@MOHAMMADTOFIK]-[/media/mohammadtofik/UUI/190905514/DSLAB/LAB1]
└──╼ $python3 ex4.py
Enter a number123
Something else
┌─[mohammadtofik@MOHAMMADTOFIK]-[/media/mohammadtofik/UUI/190905514/DSLAB/LAB1]
└──╼ $
```

(11)

```
x = 42
if x > 1:
print('Above one')
if x < 100:
print('Less than 100')
print('All done')
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 ex5.py
Above one
Less than 100
All done
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(12)

```
age = 15
b = ('kid' if age < 18 else 'adult')
print(b)
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 ex6.py
kid
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(13)

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

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 loopEx1.py
5
4
3
2
1
Done
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(14)

```
stud = ['Ram','Rahul', 'Anu','Ramesh','Suja']
for k in stud:
print("Hello:",k)
print('Done')
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 loopEx2.py
Hello: Ram
Hello: Rahul
Hello: Anu
Hello: Ramesh
Hello: Suja
Done
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(15)

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

```
~/190905514/DSLAB/LAB1$ python3 loopEx3.py
0
Done with i 0
1
Done with i 1
2
Done with i 2
3
Bigger than 2
Done with i 3
4
Bigger than 2
Done with i 4
```

(16)

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

```
~/190905514/DSLAB/LAB1$ python3 loopEx4.py
Enter a number :123
1
3
41
123
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(17)

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

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 loopEx5.py
74
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(18)

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

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 loopEx6.py
3
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(19)

```
x = [9, 41, 12, 3, 74, 15]

count = sum = avg = 0
for i in x:
count=count+1
sum=sum+1
avg = sum / count
print(count)
print(sum)
print(avg)
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 loopEx7.py
6
6
1.0
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(20)

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

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 loopEx8.py
41
74
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$
```

(21)

```
x = [9, 41, 12, 3, 74, 15]
res = [100]
for i in x:
if i>20:
res.append(i)
print(i)
```

```
~/190905514/DSLAB/LAB1$ python3 loopEx9.py
15
~/190905514/DSLAB/LAB1$
```

(22)

```
import numpy as np
x = [9, 41, 12, 3, 74, 74, 15]
y = np.zeros(len(x ))
for i in range(len(x)):
if x[i] > 20:
y[i]=x[i]
print(y)
```

```
~/190905514/DSLAB/LAB1$
~/190905514/DSLAB/LAB1$ python3 loopEx10.py
[ 0. 41.  0.  0. 74. 74.  0.]
~/190905514/DSLAB/LAB1$
```