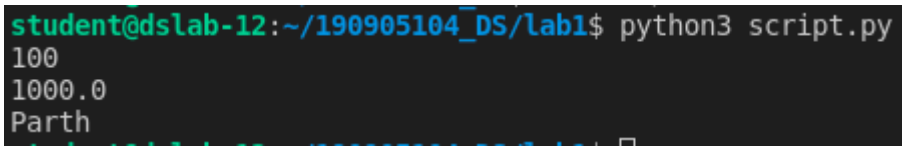
Parth Shukla
Lab 1
190905104

1)

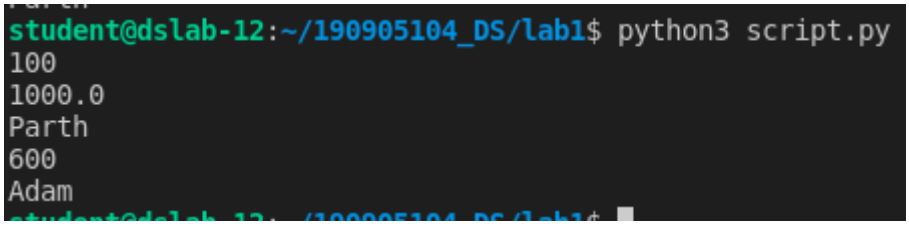
```
counter = 100 # An integer assignment
miles = 1000.0 # A floating point
name = "Parth" # A string
print (counter)
print (miles)
print (name)
```



2)

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

counter, name = 600, "Adam" # Multiple assignment
print(counter)
print(name)
```



3)

```
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 + "Lab 1") # Prints concatenated string
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
Hello World!
H
llo
llo World!
Hello World!Hello World!
Hello World!Lab 1
```

4) Updating string

```
var1 = 'Hello World!'
print ("Updated String :", var1[:6] + 'Python')
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
Updated String : Hello Python
```

5) String formatting operator

```
print( "My name is %s and weight is %d kg!" % ('Parth', 65))
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
My name is Parth and weight is 65 kg!
```

6) String methods

```
str = "this will have first letter in upper case"
print (str.capitalize())
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
This will have first letter in upper case
```

```
str = "this will count the number of times some appears in the list"
print (str.count("count"))
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
1
```

```
str = "this will find the occurance some appears in the list"
print (str.find("occur"))
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
19
```

```
str= "CONVERT TO LOWER"
print (str.lower())
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
convert to lower
```

```
str= "SwApCaSe"
print (str.swapcase())
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
sWaPcAsE
```

7) Lists

```
list = ['abcd', 1233, 33.4, "parth"]
print(list)
print(list[2:])
print(list[2:5])
print(list*2)
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
['abcd', 1233, 33.4, 'parth']
[33.4, 'parth']
[33.4, 'parth']
['abcd', 1233, 33.4, 'parth', 'abcd', 1233, 33.4, 'parth']
```

Add item

```
list = ['abcd', 1233, 33.4, "parth"]
list.append("last item")
print(list)
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
['abcd', 1233, 33.4, 'parth', 'last item']
```

Delete item

```
list = ['abcd', 1233, 33.4, "parth"]
list.append("last item")
del list[2]
print(list)
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
['abcd', 1233, 'parth', 'last item']
```

```
list = ['abcd', 1233, 33.4, "parth"]
list.append("last item")
del list[2]
print(list)
print(len(list))
print(list.count("abcd"))
list.pop()
print(len(list))
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
['abcd', 1233, 'parth', 'last item']
4
1
3
```

Remove item

```
list = ['abcd', 1233, 33.4, "parth"]
list.append("last item")
del list[2]
print(list)
print(len(list))
print(list.count("abcd"))
```

```
list.pop()
print(len(list))
list.remove("parth")
print(list)
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
['abcd', 1233, 'parth', 'last item']
4
1
3
['abcd', 1233]
```

8) Tuple

```
tuple = ('abcd', 786 , 2.23, 'john', 70.2)
print(tuple)
print(tuple[2])
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
('abcd', 786, 2.23, 'john', 70.2)
2.23
```

9) Branching and Looping

```
num=float(input("Enter a number:"))
if num>0:
print("pos number")
elif num==0:
print("zero")
else:
print("Neg number")
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
Enter a number:-3.2
Neg number
```

Never reaching condition:

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

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
Enter a number:54
Above 20
```

Nested If

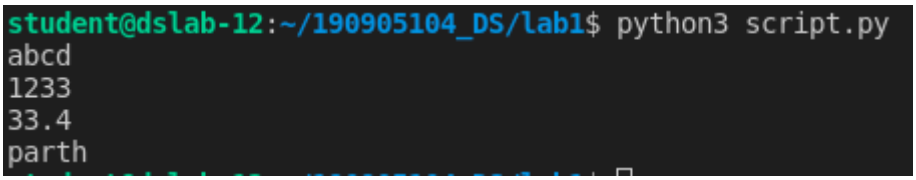
```
x = 23
if x > 20:
print("passed first condition")
if x < 30:
print("passed second test")
else:
print("failed second test")
```

Ternary operator

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

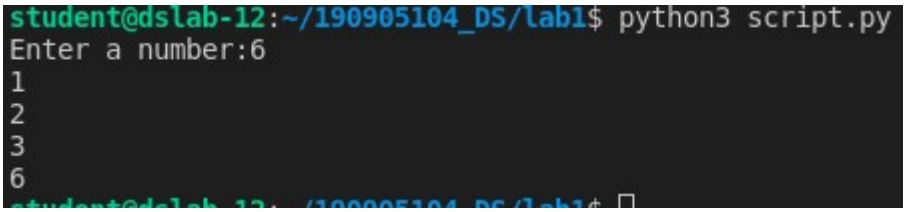
Looping in list

```
list = ['abcd', 1233, 33.4, "parth"]
for l in list:
print(l)
```



Print factors of a number

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



Finding largest element in list

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

```
if i>Largest:
Largest=i
print(Largest)
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
74
```

Similarly for smallest,

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

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
3
```

Finding mean of elements

```
x= [9, -3, 3, -2, 4, -5]
count=sum=avg=0
for i in x:
count=count+1
sum=sum+i
avg=sum/count
print(count)
print(sum)
print(avg)
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
6
6
1.0
```

Filter elements in a list

```
res=[]
for i in x:
if i>20:
res.append(i)
print(res)
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
[41, 74]
```

Replace all elements above 20 to zero and store in another variable

```
y=np.zeros(len(x))
for i in range(len(x)):
if x[i]>20:
y[i]=x[i]
print(y)
```

```
student@dslab-12:~/190905104_DS/lab1$ python3 script.py
[ 0. 41.  0.  0. 74.  0.]
```