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1.

```
counter=100
miles=1000.0
name="Jhon"
print(counter)
print(miles)
print(name)
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p1.py
100
1000.0
Jhon
```

2.

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

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p2.py
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p2.py
1
2
shreyas
student@V310Z-000:~/Documents/190905022_dslab/week1$
```

3.

```
a=5
b=4.56
```

```
print(5*a)
print(a/2) #division
print(a**2) #power calculation
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p3.py
25
2.5
25
```

Python Strings

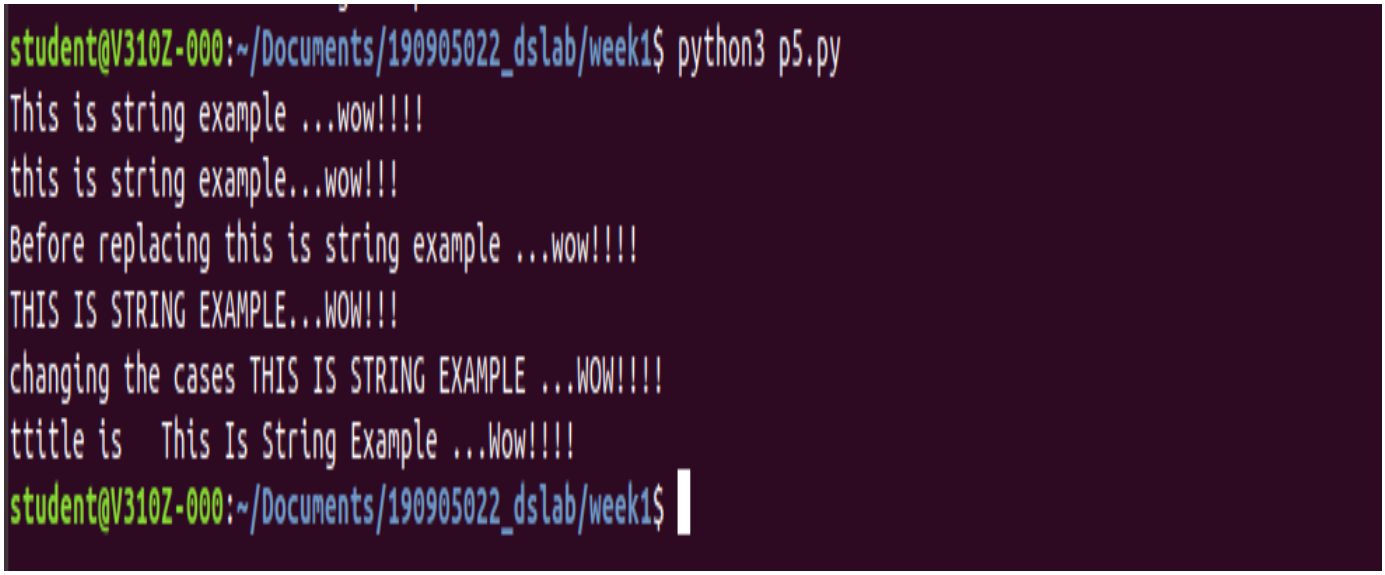
4.

```
 import numpy as np

str='HELLO WORLD!'
print(str)
print(str[0])
print(str[2:5])
print(str[2:])
print(str*2)
print(str+"TEST")

print("updated string:",str[:6]+'python')

#string format

print("My name is %s and and weight is %d kg!" %('shreyas',20))
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p4.py
HELLO WORLD!
H
LLO
LLO WORLD!
HELLO WORLD!HELLO WORLD!
HELLO WORLD!TEST
updated string: HELLO python
My name is shreyas and and weight is 20 kg!
student@V310Z-000:~/Documents/190905022_dslab/week1$
```

5

```
#capitalize()
str ="this is string example ...wow!!!!"
print(str.capitalize())

#count()
str.count('s')

#find()

str.find('example')
#lower
str1="THIS IS STRING EXAMPLE...WOW!!!"
print(str1.lower())

#replace()

str2="this is string example ...wow!!!!"
print("Before replacing",str2)
print(str1.replace("is","was"))

#swapcase()
print("changing the cases",str2.swapcase())

#title()
print("ttitle is  ",str2.title())
```



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python list

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

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p6.py
['abcd', 786, 2.23, 'join', 70.2]
abcd
[786, 2.23]
[2.23, 'join', 70.2]
[123, 'jhon', 123, 'jhon']
['abcd', 786, 2.23, 'join', 70.2, 123, 'jhon']
```

2.

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

#delete

del list[2]

#check for existence

print('physics' in list)
print('english' in list)
print(len(list))
print(list.count('physics'))
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p6.py
['physics', 'chemistry', 1997, 2000, 'maths']
True
False
4
1
student@V310Z-000:~/Documents/190905022_dslab/week1$
```

3.

```
list = ['physics', 'chemistry', 1997, 2000];
list.append('maths')

list.pop()
print("list after pop is")
print(list)

list.insert(2,'maths')

print(list)

list.remove('chemistry')
print("afyer removing chemistry",list)
list.reverse()
print("after reversing",list)
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p6.py
list after pop is
['physics', 'chemistry', 1997, 2000]
['physics', 'chemistry', 'maths', 1997, 2000]
afyer removing chemistry ['physics', 'maths', 1997, 2000]
after reversing [2000, 1997, 'maths', 'physics']
student@V310Z-000:~/Documents/190905022_dslab/week1$
```

---

python tuple

```
tuple =('abcd',786,2.24,'john',70.2)
list=['abcd',786,2.23,'john',70.2]
tuple[2]=1000
list[2]=1000
```

Tuples can be thought of as read-only lists. So cant change tuple giving error

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
Traceback (most recent call last):
  File "p7.py", line 3, in <module>
    tuple[2]=1000
TypeError: 'tuple' object does not support item assignment
student@V310Z-000:~/Documents/190905022_dslab/week1$
```

Looping & Conditional Branches in Python

```
num=float(input('enter a number'))
if num>0:
        print("positive number")
elif num==0:
    print("zero")

else:
    print("negitive number")
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
enter a number10
positive number
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
enter a number0
zero
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
enter a number-10
negitive number
student@V310Z-000:~/Documents/190905022_dslab/week1$
```

```
x=float(input('enter a number'))

if x<10:
        print('smaller')
if x>20:
        print('bigger')
```

```
print("finished")
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
enter a number25
bigger
finished
```

```
x=5
print("begfore 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")
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
begfore 5
this is 5
still 5
After 5
before 6
after 6
```

3.

```
 x=42
if x>1:

        print('above one')
        if x<100:
                print('less than 100')
print('All done')

#ternary

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

LOOPING

```
print("#This is example 1 #")
for val in [5,4,3,2,1]:
        print(val)
print('Done')

student=['ram','vijay','nithya','Anu','ramesh','suja']
print("#This is example 2 #")
for k in student:
        print('Hello',k)
print('Done!!')
print("#This is example 3 #")
for i in range(5):
        print(i)
        if i>2:
```

```
            print('Bigger than 2')
        print('Done with i',i)
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
#This is example 1 #
5
4
3
2
1
Done
#This is example 2 #
Hello ram
Hello vijay
Hello nithya
Hello Anu
Hello ramesh
Hello suja
Done!!
#This is example 3 #
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
student@V310Z-000:~/Documents/190905022_dslab/week1$
```

factor

```
x=int(input('Enter a number:'))

for i in range(1,x+1):
        if x%i==0:
                print(i)
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
Enter a number:10
1
2
5
10
student@V310Z-000:~/Documents/190905022_dslab/week1$
```

Finding 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@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
3
```

```
from math import *
x= [9, 41, 12, 3, 74, 15]
largest=0
for i  in  x:
        if i>largest:
                largest=i
print(largest)
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
74
```

avg and sum

```
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 is",sum)
print("average is",avg)
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
6
sum is 154
average is 25.666666666666668
student@V310Z-000:~/Documents/190905022_dslab/week1$
```

Filtering

```
import numpy as np
x=[9,41,12,3,74,15]

print("original list is",x)

for i in x:
        if i>20:
                print(i)

print("#store the elements in a variable res #")
res=[]

for i in x:
        if i>20:
           res.append(i)

print(res)

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

```
        y[i]=x[i]
print(y)
```

```
student@V310Z-000:~/Documents/190905022_dslab/week1$ python3 p7.py
original list is [9, 41, 12, 3, 74, 15]
41
74
#store the elements in a variable res #
[41, 74]
[ 0. 41.  0.  0. 74.  0.]
student@V310Z-000:~/Documents/190905022_dslab/week1$
```