```
#Operations on Tuple
a=[3,8,9,"Hi",78,41,"World"]
b=(6,78,5,1,89,65,44,31,66)

c=(5,8,44)

d=("Parrot")

print("List a is",a)

y=tuple(a)

print("List converted to tuple is",y)

e=b+c

print("The concatenated tuple is",e)
print("The length of tuple a is",len(a))
print("The repeated tuple is",3*d)
print("Tuple b is",b)

print("The max in tuple b is",max(b))
print("The min in tuple b is",min(b))
print("The 5th element of tuple a is",a[4])
print("The 2nd last element of tuple b
is",b[-2])

print("The element between 3rd and 6th
positon of tuple b is",b[2:6])

print("The element before 3rd last position
of list a is",a[:-3])



x=zip(b,c)

f=list(x)

print(f)
```

Output: ace@ace-ThinkCentre-M70e:~/Desktop$ python3 exp4.py

List a is [3, 8, 9, 'Hi', 78, 41, 'World']

List converted to tuple is (3, 8, 9, 'Hi', 78, 41, 'World')

The concatenated tuple is (6, 78, 5, 1, 89, 65, 44, 31, 66, 5, 8, 44)

The length of tuple a is 7

The repeated tuple is ParrotParrotParrot
Tuple b is (6, 78, 5, 1, 89, 65, 44, 31, 66)

The max in tuple b is 89

The min in tuple b is 1

The 5th element of tuple a is 78

The 2nd last element of tuple b is 31

The element between 3rd and 6th positon of tuple b is (5, 1, 89, 65)

The element before 3rd last position of list a is [3, 8, 9, 'Hi']

[(6, 5), (78, 8), (5, 44)]

#Operation on set

```
a={1,2,3,4,5,6,7}
b={0,85,41,23,20,3,4}
print(a)
print(b)
print("Intersection of set a and b is",a & b)
print("Union of set a and b is",a|b)
print("Difference between set a and b is",a-b)
print("Symmetric difference between set a and b is",a^b)
```

Shreeya Kokate
Roll No. 41
SE INFT-1

Output: ace@ace-ThinkCentre-M70e:~/Desktop$ python3 set.py

{1, 2, 3, 4, 5, 6, 7} {0, 3, 4, 41, 20, 85, 23}
Intersection of set a and b is {3, 4}

Union of set a and b is {0, 1, 2, 3, 4, 5, 6, 7, 41, 20, 85, 23}

Difference between set a and b is {1, 2, 5, 6, 7}

Symmetric difference between set a and b is {0, 1, 2, 5, 6, 7, 20, 85, 23, 41}

```
#Operation on Array

from array import*
a=array("i",[52,1,3,8,9,45,96,102,523,665,5,
2,78,3641,896])

print("The data type of a is",type(a))
print("Length of array a is",len(a))
print("Array a printed using print function
is",a)

print("Array a printed using for loop : ")
for i in a:

print(i)

a.append(6)

print("Array after appending values is",a)
a.extend([2,4,2,6])

print("Array a after adding elements is",a)
a.pop()

print(" Array a after popped out is",a)
a.remove(96)

print("Array after removing 96 is",a)
```

```
a.insert(2,66)

print("Array a after adding 66 at index 2
is",a)

print("The reverse of array a
is",a.reverse())

b=[89,61,30,1,1]

a.fromlist(b)

print("Array a after appending array b
is",a)
```

Output: ace@ace-ThinkCentre-M70e:~/Desktop$ python3 array.py

**The data type of a is <class 'array.array'>
Length of array a is 15**

**Array a printed using print function is
array('i', [52, 1, 3, 8, 9, 45, 96, 102, 523, 665, 5, 2, 78, 3641, 896])**

Array a printed using for loop : 52 1 3 8 9 45 96 102 523 665 5 2 78 3641 896

Array after appending values is array('i', [52, 1, 3, 8, 9, 45, 96, 102, 523, 665, 5, 2, 78, 3641, 896, 6])

Array a after adding elements is array('i', [52, 1, 3, 8, 9, 45, 96, 102, 523, 665, 5, 2, 78,

3641, 896, 6, 2, 4, 2, 6])

Array a after popped out is array('i', [52, 1, 3, 8, 9, 45, 96, 102, 523, 665, 5, 2, 78, 3641, 896, 6, 2, 4, 2])

Array after removing 96 is array('i', [52, 1, 3, 8, 9, 45, 102, 523, 665, 5, 2, 78, 3641, 896, 6, 2, 4, 2])

Array a after adding 66 at index 2 is
array('i', [52, 1, 66, 3, 8, 9, 45, 102, 523, 665,
5, 2, 78, 3641, 896, 6, 2, 4, 2])

The reverse of array a is None

Array a after appending array b is
array('i', [2, 4, 2, 6, 896, 3641, 78, 2, 5, 665,
523, 102, 45, 9, 8, 3, 66, 1, 52, 89, 61, 30, 1,
1])

#Boolean

Python 3.5.0 (default, Jan 29 2019,
14:49:31)

[GCC 7.3.0] on linux

Type "help", "copyright", "credits" or
"license" for more information.

>>> b=42

>>> c=10

>>> b>c

True

>>> a=100

>>> b>a

False

>>> c<a

True

>>> c>44

False

>>>

Shreeya Kokate
Roll No. 41
SE INFT-1

```
#Operation on Dictionary
a={"Name":"Rahul","Age":20,"Class":"2
nd Year"}
b={"Gender":"M","Branch":"IT","Blood
Group":"O+ve"}
print("Name:",a["Name"])
print("Age:",a["Age"])
print("Blood Group:",b["Blood Group"])
a["Age"]=19
a["College"]="Atharva College"
print(a)
print("Length of Dictionary a is",len(a))
print("Data type of b is",type(b))
y=b.copy()
print("The copied dictionary is",y)
print("The cleared dictionary is",y.clear())
print("The keys in the dictionary a
are",a.keys())
print("The values in the dictionary b
are",b.values()) a.update(b)
print("Updated dictionary is",a)
c={1:14,2:13,3:8,4:67,5:16}
print("Dictionary c is",c.items())
print(c.pop(4)) print(c)
```

Output:

```
Name: Rahul
Age: 20
Blood Group: O+ve
{'Name': 'Rahul', 'Age': 19, 'Class': '2nd
```

Shreeya Kokate
Roll No. 41
SE INFT-1

Year', 'College': 'Atharva College'}

Length of Dictionary a is 4

Data type of b is <class 'dict'>

The copied dictionary is {'Gender': 'M', 'Branch': 'IT', 'Blood Group': 'O+ve'}

The cleared dictionary is None

The keys in the dictionary a are dict_keys(['Name', 'Age', 'Class', 'College'])
The values in the dictionary b are dict_values(['M', 'IT', 'O+ve'])

Updated dictionary is {'Name': 'Rahul', 'Age': 19, 'Class': '2nd Year', 'College': 'Atharva College', 'Gender': 'M', 'Branch': 'IT', 'Blood Group': 'O+ve'}

Dictionary c is dict_items([(1, 14), (2, 13), (3, 8), (4, 67), (5, 16)]) 67 {1: 14, 2: 13, 3: 8, 5: 16}

Shreeya Kokate
Roll No. 41
SE INFT-1