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S11 - 07

Assignment –03: List and Tuples

Code (List):

```
branch = ["IT", "Computer", "EXTC", "AIDS", "Chemical"]
print(branch)
print(len(branch))

list1 = ["blue", "green","yellow"]
list2  = [True, False, False]
list3 = ["abc", 34, True]
print(list1)
print(list2)
print(list3)

#Indexing
print(branch[0])
print(branch[1])
print(branch[2])
print(branch[3])
print(branch[4])

#Negative Indexing --> -1 refers to last line
print(branch[-1])
print(branch[-2])
print(branch[-3])
```

```
print(branch[-4])

#Slicing
print(branch[1:4])
print(branch[2:])
print(branch[:2])

#Check if item is present in list

if  "Computer" in branch:
   print("Yes, Computer is a branch ")
print(len(branch))

#Change item value of a list
num = [1,2,3,4,5,6,7,8,9]
print(num)
num[1] = 10
num[2] = 20
print(num)
num[1:3] = [99]
print(num)
num.insert(4,40)
print(num)

#Add list item
```

```
color = ["Yellow","Blue","Green"]
print(color)
color.append("Orange")
print(color)
color.insert(1,"Purple")
print(color)
color1 = ["White", "Black"]
print(color1)
color.extend(color1)
print(color1)

#Remove Item from List
color.remove("Green")
print(color)

#Remove the 1st item
color.pop(0)
print(color)

#Remove the 2nd item
color.pop(1)
print(color)

#Remove the last item
color.pop(0)
print(color)
```

```
#Clear the list content
color1.clear()
print(color1)

#Looping through list
num1 = [0,11,111,1111,11111,111111]
for i in range (len(num)):
    print(num1[i])

#Sorting List
team = ["Aarya","Vijay", "Arban"]
team.sort()
team.reverse()
print(team)
team1 = team.copy()
print(team1)
print(team.count("Aarya"))

names = ["Aarya", "Pankaj", "Jayden", "Sarthak", "Jorden", "Aniket", "Digvijay", "Vighnesh", "Shreyash", "Soham"]
locations = ["Sion", "Borivali", "Dadar", "Kandivali", "Malad", "Nallasopara", "Vile Parle", "Kharghar", "Santacruz", "Kalyan"]
hobbies = ["Reading", "Gaming", "Swimming", "Cooking", "Playing", "Coding", "Travelling", "Dancing", "Singing", "Studying"]
roll_numbers = [7, 59, 29, 69, 58, 83, 103, 51, 30, 6]
```

```
print("Names List:")
print(names)
names.append("Vamshi")
print("After Addition:", names)
names.insert(2, "Deva")
print("After Insertion:", names)
names.remove("Vighnesh")
print("After Removal:", names)
print("Length of Names List:", len(names))
print("Index of 'Pankaj' in Names List:", names.index("Pankaj"))
print("Count of 'Jayden' in Names List:", names.count("Jayden"))
names.reverse()
print("After Reverse:", names)
print("Sorted Names List:", sorted(names))
print("\n")

print("Locations List:")
print(locations)
locations.append("Prabhadevi")
print("After Addition:", locations)
locations.insert(5, "Parel")
print("After Insertion:", locations)
locations.remove("Kharghar")
print("After Removal:", locations)
print("Length of Locations List:", len(locations))
print("Index of 'Sion' in Locations List:", locations.index("Sion"))
```

```
print("Count of 'Malad' in Locations List:", locations.count("Malad"))
locations.reverse()
print("After Reverse:", locations)
print("Sorted Locations List:", sorted(locations))
print("\n")

print("Hobbies List:")
print(hobbies)
hobbies.append("Photography")
print("After Addition:", hobbies)
hobbies.insert(8, "Reading")
print("After Insertion:", hobbies)
hobbies.remove("Singing")
print("After Removal:", hobbies)
print("Length of Hobbies List:", len(hobbies))
print("Index of 'Coding' in Hobbies List:", hobbies.index("Coding"))
print("Count of 'Swimming' in Hobbies List:", hobbies.count("Swimming"))
hobbies.reverse()
print("After Reverse:", hobbies)
print("Sorted Hobbies List:", sorted(hobbies))
print("\n")

print("Roll Numbers List:")
print(roll_numbers)
roll_numbers.append(78)
print("After Addition:", roll_numbers)
```

```
roll_numbers.insert(4, 111)
print("After Insertion:", roll_numbers)
roll_numbers.remove(51)
print("After Removal:", roll_numbers)
print("Length of Roll Numbers List:", len(roll_numbers))
print("Index of '103' in Roll Numbers List:", roll_numbers.index(103))
print("Count of '58' in Roll Numbers List:", roll_numbers.count(58))
roll_numbers.reverse()
print("After Reverse:", roll_numbers)
print("Sorted Roll Numbers List:", sorted(roll_numbers))
```

Output:

```
====================== RESTART: C:/Users/Lab1004/Desktop/S11-07-Assignment3(Lists & Tuples).py ======================
['IT', 'Computer', 'EXTC', 'AIDS', 'Chemical']
5
['blue', 'green', 'yellow']
[True, False, False]
['abc', 34, True]
IT
Computer
EXTC
AIDS
Chemical
Chemical
AIDS
EXTC
```

Computer

['Computer', 'EXTC', 'AIDS']

['EXTC', 'AIDS', 'Chemical']

['IT', 'Computer']

Yes, Computer is a branch

5

[1, 2, 3, 4, 5, 6, 7, 8, 9]

[1, 10, 20, 4, 5, 6, 7, 8, 9]

[1, 99, 4, 5, 6, 7, 8, 9]

[1, 99, 4, 5, 40, 6, 7, 8, 9]

['Yellow', 'Blue', 'Green']

['Yellow', 'Blue', 'Green', 'Orange']

['Yellow', 'Purple', 'Blue', 'Green', 'Orange']

['White', 'Black']

['White', 'Black']

['Yellow', 'Purple', 'Blue', 'Orange', 'White', 'Black']

['Purple', 'Blue', 'Orange', 'White', 'Black']

['Purple', 'Orange', 'White', 'Black']

['Orange', 'White', 'Black']

[]

['Vijay', 'Arban', 'Aarya']

['Vijay', 'Arban', 'Aarya']

1

Names List:

['Aarya', 'Pankaj', 'Jayden', 'Sarthak', 'Jorden', 'Aniket', 'Digvijay', 'Vighnesh', 'Shreyash', 'Soham']

After Addition: ['Aarya', 'Pankaj', 'Jayden', 'Sarthak', 'Jorden', 'Aniket', 'Digvijay', 'Vighnesh', 'Shreyash', 'Soham', 'Vamshi']

After Insertion: ['Aarya', 'Pankaj', 'Deva', 'Jayden', 'Sarthak', 'Jorden', 'Aniket', 'Digvijay', 'Vighnesh', 'Shreyash', 'Soham', 'Vamshi']

After Removal: ['Aarya', 'Pankaj', 'Deva', 'Jayden', 'Sarthak', 'Jorden', 'Aniket', 'Digvijay', 'Shreyash', 'Soham', 'Vamshi']

Length of Names List: 11

Index of 'Pankaj' in Names List: 1

Count of 'Jayden' in Names List: 1

After Reverse: ['Vamshi', 'Soham', 'Shreyash', 'Digvijay', 'Aniket', 'Jorden', 'Sarthak', 'Jayden', 'Deva', 'Pankaj', 'Aarya']

Sorted Names List: ['Aarya', 'Aniket', 'Deva', 'Digvijay', 'Jayden', 'Jorden', 'Pankaj', 'Sarthak', 'Shreyash', 'Soham', 'Vamshi']

Locations List:

['Sion', 'Borivali', 'Dadar', 'Kandivali', 'Malad', 'Nallasopara', 'Vile Parle', 'Kharghar', 'Santacruz', 'Kalyan']

After Addition: ['Sion', 'Borivali', 'Dadar', 'Kandivali', 'Malad', 'Nallasopara', 'Vile Parle', 'Kharghar', 'Santacruz', 'Kalyan', 'Prabhadevi']

After Insertion: ['Sion', 'Borivali', 'Dadar', 'Kandivali', 'Malad', 'Parel', 'Nallasopara', 'Vile Parle', 'Kharghar', 'Santacruz', 'Kalyan', 'Prabhadevi']

After Removal: ['Sion', 'Borivali', 'Dadar', 'Kandivali', 'Malad', 'Parel', 'Nallasopara', 'Vile Parle', 'Santacruz', 'Kalyan', 'Prabhadevi']

Length of Locations List: 11

Index of 'Sion' in Locations List: 0

Count of 'Malad' in Locations List: 1

After Reverse: ['Prabhadevi', 'Kalyan', 'Santacruz', 'Vile Parle', 'Nallasopara', 'Parel', 'Malad', 'Kandivali', 'Dadar', 'Borivali', 'Sion']

Sorted Locations List: ['Borivali', 'Dadar', 'Kalyan', 'Kandivali', 'Malad', 'Nallasopara', 'Parel', 'Prabhadevi', 'Santacruz', 'Sion', 'Vile Parle']

Hobbies List:

['Reading', 'Gaming', 'Swimming', 'Cooking', 'Playing', 'Coding', 'Travelling', 'Dancing', 'Singing', 'Studying']

After Addition: ['Reading', 'Gaming', 'Swimming', 'Cooking', 'Playing', 'Coding', 'Travelling', 'Dancing', 'Singing', 'Studying', 'Photography']

After Insertion: ['Reading', 'Gaming', 'Swimming', 'Cooking', 'Playing', 'Coding', 'Travelling', 'Dancing', 'Reading', 'Singing', 'Studying', 'Photography']

After Removal: ['Reading', 'Gaming', 'Swimming', 'Cooking', 'Playing', 'Coding', 'Travelling', 'Dancing', 'Reading', 'Studying', 'Photography']

Length of Hobbies List: 11

Index of 'Coding' in Hobbies List: 5

Count of 'Swimming' in Hobbies List: 1

After Reverse: ['Photography', 'Studying', 'Reading', 'Dancing', 'Travelling', 'Coding', 'Playing', 'Cooking', 'Swimming', 'Gaming', 'Reading']

Sorted Hobbies List: ['Coding', 'Cooking', 'Dancing', 'Gaming', 'Photography', 'Playing', 'Reading', 'Reading', 'Studying', 'Swimming', 'Travelling']

Roll Numbers List:

[7, 59, 29, 69, 58, 83, 103, 51, 30, 6]

After Addition: [7, 59, 29, 69, 58, 83, 103, 51, 30, 6, 78]

After Insertion: [7, 59, 29, 69, 111, 58, 83, 103, 51, 30, 6, 78]

After Removal: [7, 59, 29, 69, 111, 58, 83, 103, 30, 6, 78]

Length of Roll Numbers List: 11

Index of '103' in Roll Numbers List: 7

Count of '58' in Roll Numbers List: 1

After Reverse: [78, 6, 30, 103, 83, 58, 111, 69, 29, 59, 7]

Sorted Roll Numbers List: [6, 7, 29, 30, 58, 59, 69, 78, 83, 103, 111]

Code (Tuple):

```
#Tuple
fruit = ("apple",)
print(type(fruit))

#Not a Tuple
fruit = ("apple")
print(type(fruit))

example = tuple(("banana","apple"))
print(example)

#Access Tuple Items
branch = ("IT","COMPS","EXTC","AIDS","CHEM")
print(branch[0])
print(branch[0:2])
print(branch[:3])
print(branch[-4:-1])

if  "IT" in branch:
    print("Yes")

print(len(branch))

#Convert the tuple into a list to be able to change to it
branchList = list(branch)
```

```
branchList[1] = "CIVIL"
print(branchList)
branchl = tuple(branchList)
print(branchl)

branchList.append("PROD")
branchT = tuple(branchList)
print(branchList)
print(branchT)

branchList.remove("AIDS")
branchT = tuple(branchList)
print(branchList)
print(branchT)

#Unpacking a tuple
fruitss = ("apple","banana","cherry","guava","pineapple")
(green,*yellow,red) = fruitss
print(green)
print(yellow)
print(red)

#Loop through tuples
for x in branch:
   print(x)
print("Second way to access")
```

```
for i in range(len(branch)):
    print(branch[i])


#Join Tuples
tuple1 = ("a","b","c")
tuple2 = (1,2,3)
tuple3 = tuple1 + tuple2
print(tuple3)


print("Other way")


tuple4 = tuple2*2
print(tuple4)


#Tuple Methods


x = tuple2.count(2)
print(x)
x = tuple2.index(1)
print(x)


list1 =
["Aarya","Pankaj","Shreyash","Jayden","Jorden","Sarthak","Aniket","Digvijay","
Vighnesh","Soham"]
list2 =
["Sion","Borivali","Santacruz","Dadar","Malad","Kandivali","Nallasopara","Vile
Parle","Kharghar","Kalyan"]
```

```
list3 =
["Reading","Football","Football","Coding","Football","Trying","Studying","Foot
ball","Travelling","Coding"]
list4 = [7,56,88,30,29,55,69,83,101,60,6]


tup1=tuple(list1)
print(tup1)
tup2=tuple(list2)
print(tup2)
tup3=tuple(list3)
print(tup3)
tup4=tuple(list4)
print(tup4)
list1.append("Vamshi")
tup5=tuple(list1)
print(tup5)
list2.append("Prabhadevi")
tup6=tuple(list2)
print(tup6)
list3.append("Sleeping")
tup7=tuple(list3)
print(tup7)
list4.append(96)
tup8=tuple(list4)
print(tup8)
```

```
tuple1 =
("Aarya","Pankaj","Shreyash","Jayden","Jorden","Sarthak","Aniket","Digvijay","
Vighnesh","Soham")

tuple2 =
("Sion","Borivali","Santacruz","Dadar","Malad","Kandivali","Nallasopara","Vile
Parle","Kharghar","Kalyan")

tuple3 =
("Reading","Football","Football","Coding","Football","Trying","Studying","Foot
ball","Travelling","Coding")

tuple4 = (7,56,88,30,29,55,69,83,101,60,6)


list1 = list(tuple1)

list2 = list(tuple2)

list3 = list(tuple3)

list4 = list(tuple4)


print("List 1:")

print(list1)

list1.append("Vamshi")

print("After Addition:", list1)

list1.insert(2, "Deva")

print("After Insertion:", list1)

list1.remove("Vighnesh")

print("After Removal:", list1)

print("Length of List 1:", len(list1))

print("Index of 'Pankaj' in List 1:", list1.index("Pankaj"))

print("Count of 'Jorden' in List 1:", list1.count("Jorden"))

list1.reverse()
```

```
print("After Reverse:", list1)
print("Sorted List 1:", sorted(list1))
print("\n")

print("List 2:")
print(list2)
list2.append("Prabhadevi")
print("After Addition:", list2)
list2.insert(5, "Chembur")
print("After Insertion:", list2)
list2.remove("Kharghar")
print("After Removal:", list2)
print("Length of List 2:", len(list2))
print("Index of 'Sion' in List 2:", list2.index("Sion"))
print("Count of 'Kandivali' in List 2:", list2.count("Kandivali"))
list2.reverse()
print("After Reverse:", list2)
print("Sorted List 2:", sorted(list2))
print("\n")

print("List 3:")
print(list3)
list3.append("Photography")
print("After Addition:", list3)
list3.insert(8, "Reading")
print("After Insertion:", list3)
```

```
list3.remove("Travelling")
print("After Removal:", list3)
print("Length of List 3:", len(list3))
print("Index of 'Coding' in List 3:", list3.index("Coding"))
print("Count of 'Studying' in List 3:", list3.count("Studying"))
list3.reverse()
print("After Reverse:", list3)
print("Sorted List 3:", sorted(list3))
print("\n")

print("List 4:")
print(list4)
list4.append(111)
print("After Addition:", list4)
list4.insert(4, 112)
print("After Insertion:", list4)
list4.remove(101)
print("After Removal:", list4)
print("Length of List 4:", len(list4))
print("Index of '6' in List 4:", list4.index(6))
print("Count of '7' in List 4:", list4.count(7))
list4.reverse()
print("After Reverse:", list4)
print("Sorted List 4:", sorted(list4))
print("\n")
```

```
tuple1 = tuple(list1)
tuple2 = tuple(list2)
tuple3 = tuple(list3)
tuple4 = tuple(list4)
print("Tuple 1:")
print(tuple1)
print("Tuple 2:")
print(tuple2)
print("Tuple 3:")
print(tuple3)
print("Tuple 4:")
print(tuple4)
```

Output:

```
<class 'tuple'>
<class 'str'>
('banana', 'apple')
IT
('IT', 'COMPS')
('IT', 'COMPS', 'EXTC')
('COMPS', 'EXTC', 'AIDS')
Yes
5
['IT', 'CIVIL', 'EXTC', 'AIDS', 'CHEM']
('IT', 'CIVIL', 'EXTC', 'AIDS', 'CHEM')
['IT', 'CIVIL', 'EXTC', 'AIDS', 'CHEM', 'PROD']
```

('IT', 'CIVIL', 'EXTC', 'AIDS', 'CHEM', 'PROD')

['IT', 'CIVIL', 'EXTC', 'CHEM', 'PROD']

('IT', 'CIVIL', 'EXTC', 'CHEM', 'PROD')

apple

['banana', 'cherry', 'guava']

pineapple

IT

COMPS

EXTC

AIDS

CHEM

Second way to access

IT

COMPS

EXTC

AIDS

CHEM

('a', 'b', 'c', 1, 2, 3)

Other way

(1, 2, 3, 1, 2, 3)

1

0

('Aarya', 'Pankaj', 'Shreyash', 'Jayden', 'Jorden', 'Sarthak', 'Aniket', 'Digvijay', 'Vighnesh', 'Soham')

('Sion', 'Borivali', 'Santacruz', 'Dadar', 'Malad', 'Kandivali', 'Nallasopara', 'Vile Parle', 'Kharghar', 'Kalyan')

('Reading', 'Football', 'Football', 'Coding', 'Football', 'Trying', 'Studying', 'Football', 'Travelling', 'Coding')

(7, 56, 88, 30, 29, 55, 69, 83, 101, 60, 6)

('Aarya', 'Pankaj', 'Shreyash', 'Jayden', 'Jorden', 'Sarthak', 'Aniket', 'Digvijay', 'Vighnesh', 'Soham', 'Vamshi')

('Sion', 'Borivali', 'Santacruz', 'Dadar', 'Malad', 'Kandivali', 'Nallasopara', 'Vile Parle', 'Kharghar', 'Kalyan', 'Prabhadevi')

('Reading', 'Football', 'Football', 'Coding', 'Football', 'Trying', 'Studying', 'Football', 'Travelling', 'Coding', 'Sleeping')

(7, 56, 88, 30, 29, 55, 69, 83, 101, 60, 6, 96)

List 1:

['Aarya', 'Pankaj', 'Shreyash', 'Jayden', 'Jorden', 'Sarthak', 'Aniket', 'Digvijay', 'Vighnesh', 'Soham']

After Addition: ['Aarya', 'Pankaj', 'Shreyash', 'Jayden', 'Jorden', 'Sarthak', 'Aniket', 'Digvijay', 'Vighnesh', 'Soham', 'Vamshi']

After Insertion: ['Aarya', 'Pankaj', 'Deva', 'Shreyash', 'Jayden', 'Jorden', 'Sarthak', 'Aniket', 'Digvijay', 'Vighnesh', 'Soham', 'Vamshi']

After Removal: ['Aarya', 'Pankaj', 'Deva', 'Shreyash', 'Jayden', 'Jorden', 'Sarthak', 'Aniket', 'Digvijay', 'Soham', 'Vamshi']

Length of List 1: 11

Index of 'Pankaj' in List 1: 1

Count of 'Jorden' in List 1: 1

After Reverse: ['Vamshi', 'Soham', 'Digvijay', 'Aniket', 'Sarthak', 'Jorden', 'Jayden', 'Shreyash', 'Deva', 'Pankaj', 'Aarya']

Sorted List 1: ['Aarya', 'Aniket', 'Deva', 'Digvijay', 'Jayden', 'Jorden', 'Pankaj', 'Sarthak', 'Shreyash', 'Soham', 'Vamshi']

List 2:

['Sion', 'Borivali', 'Santacruz', 'Dadar', 'Malad', 'Kandivali', 'Nallasopara', 'Vile Parle', 'Kharghar', 'Kalyan']

After Addition: ['Sion', 'Borivali', 'Santacruz', 'Dadar', 'Malad', 'Kandivali', 'Nallasopara', 'Vile Parle', 'Kharghar', 'Kalyan', 'Prabhadevi']

After Insertion: ['Sion', 'Borivali', 'Santacruz', 'Dadar', 'Malad', 'Chembur', 'Kandivali', 'Nallasopara', 'Vile Parle', 'Kharghar', 'Kalyan', 'Prabhadevi']

After Removal: ['Sion', 'Borivali', 'Santacruz', 'Dadar', 'Malad', 'Chembur', 'Kandivali', 'Nallasopara', 'Vile Parle', 'Kalyan', 'Prabhadevi']

Length of List 2: 11

Index of 'Sion' in List 2: 0

Count of 'Kandivali' in List 2: 1

After Reverse: ['Prabhadevi', 'Kalyan', 'Vile Parle', 'Nallasopara', 'Kandivali', 'Chembur', 'Malad', 'Dadar', 'Santacruz', 'Borivali', 'Sion']

Sorted List 2: ['Borivali', 'Chembur', 'Dadar', 'Kalyan', 'Kandivali', 'Malad', 'Nallasopara', 'Prabhadevi', 'Santacruz', 'Sion', 'Vile Parle']

List 3:

['Reading', 'Football', 'Football', 'Coding', 'Football', 'Trying', 'Studying', 'Football', 'Travelling', 'Coding']

After Addition: ['Reading', 'Football', 'Football', 'Coding', 'Football', 'Trying', 'Studying', 'Football', 'Travelling', 'Coding', 'Photography']

After Insertion: ['Reading', 'Football', 'Football', 'Coding', 'Football', 'Trying', 'Studying', 'Football', 'Reading', 'Travelling', 'Coding', 'Photography']

After Removal: ['Reading', 'Football', 'Football', 'Coding', 'Football', 'Trying', 'Studying', 'Football', 'Reading', 'Coding', 'Photography']

Length of List 3: 11

Index of 'Coding' in List 3: 3

Count of 'Studying' in List 3: 1

After Reverse: ['Photography', 'Coding', 'Reading', 'Football', 'Studying', 'Trying', 'Football', 'Coding', 'Football', 'Football', 'Reading']

Sorted List 3: ['Coding', 'Coding', 'Football', 'Football', 'Football', 'Football', 'Photography', 'Reading', 'Reading', 'Studying', 'Trying']

List 4:

[7, 56, 88, 30, 29, 55, 69, 83, 101, 60, 6]

After Addition: [7, 56, 88, 30, 29, 55, 69, 83, 101, 60, 6, 111]

After Insertion: [7, 56, 88, 30, 112, 29, 55, 69, 83, 101, 60, 6, 111]

After Removal: [7, 56, 88, 30, 112, 29, 55, 69, 83, 60, 6, 111]

Length of List 4: 12

Index of '6' in List 4: 10

Count of '7' in List 4: 1

After Reverse: [111, 6, 60, 83, 69, 55, 29, 112, 30, 88, 56, 7]

Sorted List 4: [6, 7, 29, 30, 55, 56, 60, 69, 83, 88, 111, 112]

Tuple 1:

('Vamshi', 'Soham', 'Digvijay', 'Aniket', 'Sarthak', 'Jorden', 'Jayden', 'Shreyash', 'Deva', 'Pankaj', 'Aarya')

Tuple 2:

('Prabhadevi', 'Kalyan', 'Vile Parle', 'Nallasopara', 'Kandivali', 'Chembur', 'Malad', 'Dadar', 'Santacruz', 'Borivali', 'Sion')

Tuple 3:

('Photography', 'Coding', 'Reading', 'Football', 'Studying', 'Trying', 'Football', 'Coding', 'Football', 'Football', 'Reading')

Tuple 4:

(111, 6, 60, 83, 69, 55, 29, 112, 30, 88, 56, 7)