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SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT
COMPUTER SCIENCE AND ENGINEERING DEPARTMENT
B. Tech[1st] Year
(Even Semester- 2023-2024)
Subject – Web Programming (CS104)
Python Lab Assignment 8

1. Write a Python program to sum all the items in a list.

a. Write a Python program to multiply all the items in a list.

b. Write a Python program to get the largest number from a list.

c. Write a Python program to get the smallest number from a list.

```
l = [1,2,3,4,5]
s = sum(l)
m = 1
for i in l:
    m *= i

large = max(l)
small = min(l)

print("The Sum of all elements is :", s)
print("The Product of all elements is :", m)
print("The Maximum of all elements is :", large)
print("The Minimum of all elements is :", small)
```

```
le.py
The Sum of all elements is : 15
The Product of all elements is : 120
The Maximum of all elements is : 5
The Minimum of all elements is : 1
```

2. Write a Python program to count the number of strings from a given list of strings. The string length is 2 or more and the first and last characters are the same.

Sample List : ['abbba', 'xybdmz','cvnhf', 'aba', '1221']

Expected Result : 3

```
c = 0
l = ['abbba', 'xybdmz','cvnhf', 'aba', '1221']
for i in l:
    if i[0] == i[-1]:
```

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```
        c += 1


print("Result :", c)
```

```
                                                    python -u "c:\
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\tempCodeRunnerFi
le.py"
Result : 3
```

3. Write a Python function that takes two lists and returns True if they have at least one common member.

```
def common(l1, l2):
    f = 0
    for i in l1:
        for j in l2:
            if(i == j):
                f = 1
    if(f == 1):
        print("True")
        return True
    else:
        print("False")
        return False


l1 = []
l2 = []
n = int(input("Enter No.of Elements for list 1 :"))
m = int(input("Enter No.of Elements for list 2 :"))

for i in range(n):
    n1 = int(input("Enter the Element of List 1 :"))
    l1.append(n1)

for i in range(m):
    n = int(input("Enter the Element of List 2 :"))
    l2.append(n)
```

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```
common(l1,l2)
```

```
PS C:\Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS> python -u "c:\
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\tempCodeRunnerFi
le.py"
Enter No.of Elements for list 1 :3
Enter No.of Elements for list 2 :4
Enter the Element of List 1 :1
Enter the Element of List 1 :2
Enter the Element of List 1 :3
Enter the Element of List 2 :4
Enter the Element of List 2 :5
Enter the Element of List 2 :6
Enter the Element of List 2 :7
False
```

4. Write a Python program to create a tuple.

a. To create a tuple of numbers and print one item.

b. To create a tuple with different data types.

c. Write a Python program to add an item to a tuple.

```
def create_tuple():
    n = int(input("Enter number of elements in the tuple: "))
    t = tuple(input("Enter element: ") for _ in range(n))
    print("Tuple created:", t)

def number_tuple():
    n = int(input("Enter number of numeric elements in the tuple:
"))
    t = tuple(int(input("Enter element: ")) for _ in range(n))
    print("Tuple created:", t)
    print("Printing the last indexed value from tuple:", t[-1])

print("Tuple creation:")
create_tuple()
print("\nTuple of numbers and printing an item:")
number_tuple()

print("\nAdding an item to a tuple:")
t = (1, 2, 3, 5)
```

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```
new_item = input("Enter an item to add to the tuple: ")
t = t + (new_item,)
print("Tuple after adding item:", t)
```

```
False
PS C:\Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS> python -u "c:\Users\s
rava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\l2q4.py"
Tuple creation:
Enter number of elements in the tuple: 4
Enter element: 1
Enter element: 2
Enter element: 3
Enter element: 4
Tuple created: ('1', '2', '3', '4')

Tuple of numbers and printing an item:
Enter number of numeric elements in the tuple: 3
Enter element: 7
Enter element: 8
Enter element: 9
Tuple created: (7, 8, 9)
Printing the last indexed value from tuple: 9

Adding an item to a tuple:
Enter an item to add to the tuple: 10
Tuple after adding item: (1, 2, 3, 5, '10')
```

5. Write a Python program to replace the last value of tuples in a list.

Sample list: [(10, 20, 40), (40, 50, 60), (70, 80, 90)]

Expected Output: [(10, 20, 100), (40, 50, 100), (70, 80, 100)]

```
t = []
n = int(input("Enter Number of Tuples: "))

for i in range(n):
    tu = ()
    print(f"Tuple {i+1}:")
    for j in range(3):
        e = int(input("Enter Element: "))
        tu = tu + (e,)
```

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```
    t.append(tu)


print("Original List: ", t)


new_value = int(input("Enter the number to replace the last element:
"))
t = [tpl[:-1] + (new_value,) for tpl in t]


print("Updated List: ", t)
```

```
Enter Number of Tuples: 2
Tuple 1:
Enter Element: 1
Enter Element: 2
Enter Element: 3
Tuple 2:
Enter Element: 4
Enter Element: 5
Enter Element: 6
Original List:  [(1, 2, 3), (4, 5, 6)]
Enter the number to replace the last element: 7
Updated List:  [(1, 2, 7), (4, 5, 7)]
```

6. Write a Python program to remove an empty tuple(s) from a list of tuples.
Sample data: [(), (), ('',), ('a', 'b'), ('a', 'b', 'c'), ('d')]
Expected output: [('',), ('a', 'b'), ('a', 'b', 'c'), 'd']

```
data = [(), (), ('',), ('a', 'b'), ('a', 'b', 'c'), ('d')]

data = [tpl for tpl in data if tpl]

print(data)
```

```
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\t.py"
[('',), ('a', 'b'), ('a', 'b', 'c'), 'd']
```

7. Write a Python program to sort a tuple by its float element.
Sample data: [('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')]
Expected Output: [('item3', '24.5'), ('item2', '15.10'), ('item1', '12.20')]

```
data = [('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')]

data.sort(key=lambda x: float(x[1]), reverse=True)

print(data)
```

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```
python -u "c
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\t.py"
[('item3', '24.5'), ('item2', '15.10'), ('item1', '12.20')]
```

8. Write a Python program to find the maximum and minimum values in a set.

```
s = {5, 1, 8, 3, 9}
print(max(s), min(s))
```

```
python -u
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\tempCodeRunn
le.py"
9 1
```

9. Write a Python program to check if a given value is present in a set or not.

```
s = {1, 2, 3, 4, 5}
print(3 in s)
```

```
python -u
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\t.py"
True
```

10. Write a Python program to remove all duplicates from a given list of strings and return a list of unique strings. Use the Python set data type.

```
lst = ["apple", "banana", "apple", "orange", "banana"]
print(list(set(lst)))
```

```
python
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\t.py"
['orange', 'apple', 'banana']
```

11. Write a Python script to concatenate the following dictionaries to create a new one.

Sample Dictionary :

dic1={1:10, 2:20}

dic2={3:30, 4:40}

dic3={5:50,6:60}

Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}

```
dic1 = {1: 10, 2: 20}
dic2 = {3: 30, 4: 40}
dic3 = {5: 50, 6: 60}
dic4 = {**dic1, **dic2, **dic3}
```

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```
print(dic4)
```

```
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\t
le.py"
{1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
```

12. Write a Python program to remove a key from a dictionary.

```
d = {1: 10, 2: 20, 3: 30}

d.pop(2)

print(d)
```

```
Users\srava\OneDrive\Desktop\E1S2\w
le.py"
{1: 10, 3: 30}
```

13. Write a Python program to create and display all combinations of letters, selecting each letter from a different key in a dictionary.

Sample data : {'1':['a','b'], '2':['c','d']}

Expected Output:

ac
ad
bc
bd

```
from itertools import product
data = {'1': ['a', 'b'], '2': ['c', 'd']}
for i in product(*data.values()):
    print("".join(i))
```

```
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\t.py"
ac
ad
bc
bd
```

14. Write a Python program to create a dictionary from a string.

Note: Track the count of the letters from the string.

Sample string : 'a9prtovpcr'

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Expected output: {'a': 1, '9': 1, 'p': 2, 'r': 2, 't': 1, 'o': 1, 'v': 1, 'c': 1}

```
s = 'a9prtovpcr'
d = {ch: s.count(ch) for ch in set(s)}
print(d)
```

```
python -u "
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\t.py"
{'r': 2, '9': 1, 'p': 2, 'o': 1, 'c': 1, 'v': 1, 'a': 1, 't': 1}
```

15. Write a Python program to get the top three items in a shop. Sample data: {'item1': 45.50, 'item2':35, 'item3': 41.30, 'item4':55, 'item5': 24} Expected Output: item4 55
item1 45.5
item3 41.3

```
shop = {'item1': 45.50, 'item2': 35, 'item3': 41.30, 'item4': 55,
'item5': 24}
top_items = sorted(shop.items(), key=lambda x: x[1],
reverse=True)[:3]
for item in top_items:
    print(item[0], item[1])
```

```
Users\srava\OneDrive\Desktop\E1S2\WPP\PYTHON_LABS\LAB2\tempCodeRunnerFi
le.py"
item4 55
item1 45.5
item3 41.3
```

—--THANKYOU—-