

Experiment - 4

Aim: Implementing various methods of Built-in Data Types: Strings, Lists, Tuples, Sets and Dictionaries.

Program 1: Built-in String Functions

```
a = "The best things in life are free!"
print(len(a))

print("free" in a)

print(a.upper())

print(a.lower())

print(a.replace("e", "@"))

print(a.split(" "))

x = a.find("e", 5, 10)
print(x)

print("We are called \"Indians\" by the
western countries.")

print('Who\'s this?')

print('Computer\nPython')

print('Computer\\Python')

print('Computer\tPython')

print('Computer\bPython')
```

Output:

```
33
True
THE BEST THINGS IN LIFE ARE FREE!
the best things in life are free!
Th@ b@st things in lif@ ar@ fr@@!
['The', 'best', 'things', 'in', 'life', 'are', 'free!']
5

We are called "Indians" by the western
countries.
Who's this?
Computer
Python
Computer\Python
Computer    Python
ComputerPython
```

Program 2: Built-in Tuple Functions

```
T = ("apple", "banana", "cherry")
print(len(T))

#NOT a tuple
T = ("apple")
print(type(T))

T = ("apple",)
print(type(T))
```

Output:

```
3
<class 'str'>
<class 'tuple'>
```

Program 3: Built-in List Functions

```
A = ["a", "b", "c", 1, 2, 3 ]
A.insert(2, "ABC")
print(A)

A.append("123")
print(A)

A1 = ["A", "B", "C"]
A.extend(A1)
print(A)

A.pop(1)
print(A)

del A[0]
print(A)

B = [100, 50, 65, 82, 23]
B.sort()
print(B)

B.sort(reverse = True)
print(B)

C = ["a", "b", "c"]
C.sort()
print(C)

C.sort(reverse = True)
print(C)
```

Output:

```
['a', 'b', 'ABC', 'c', 1, 2, 3]

['a', 'b', 'ABC', 'c', 1, 2, 3, '123']

['a', 'b', 'ABC', 'c', 1, 2, 3, '123', 'A', 'B', 'C']

['a', 'ABC', 'c', 1, 2, 3, '123', 'A', 'B', 'C']

['ABC', 'c', 1, 2, 3, '123', 'A', 'B', 'C']

[23, 50, 65, 82, 100]

[100, 82, 65, 50, 23]

['a', 'b', 'c']

['c', 'b', 'a']
```

Program 4: #Built-in Dictionary Functions

```
D = {"brand": "Ford", "model":
"Mustang", "year": 1964}

x = D.keys()
print(x)

x = D.values()
print(x)

x = D.items()
print(x)

D.update({"year": 2020})
print(D)

D.clear()
print(D)
```

Output:

```
dict_keys(['brand', 'model', 'year'])
dict_values(['Ford', 'Mustang', 1964])
dict_items([('brand', 'Ford'), ('model', 'Mustang'),
('year', 1964)])
{'brand': 'Ford', 'model': 'Mustang', 'year': 2020}
{}
```

Program 5: #Built-in Set Functions

```
S = {"A", "1", "abcd"}
```

```
S.add("12yZ")
```

```
print(S)
```

```
S1 = {"ABC", "DEF", "GHI"}
```

```
S.update(S1)
```

```
print(S)
```

```
S.remove("1")
```

```
print(S)
```

```
x = S.pop()
```

```
print(x)
```

```
print(S)
```

```
S.clear()
```

```
print(S)
```

```
S1 = {"a", "b", "c"}
```

```
S2 = {1, 2, 3}
```

```
S3 = S1.union(S2)
```

```
print(S3)
```

```
S1 = {"a", "b", "c"}
```

```
S2 = {10, 20, 30}
```

```
S1.update(S2)
```

```
print(S1)
```

Output:

```
{'A', 'abcd', '1', '12yZ'}
```

```
{'GHI', 'DEF', 'abcd', 'A', 'ABC', '12yZ', '1'}
```

```
{'GHI', 'DEF', 'abcd', 'A', 'ABC', '12yZ'}
```

```
GHI
```

```
{'DEF', 'abcd', 'A', 'ABC', '12yZ'}
```

```
set()
```

```
{'a', 1, 2, 3, 'c', 'b'}
```

```
{'a', 'c', 20, 'b', 10, 30}
```