

## 1.1 Python

### Question 1

Explain the difference between the list, tuple , set and dictionary ?

*Solution:*

```
print("Rishabh Rathore")
print("0827CI211155")

# List
my_list = [1, 2, 3, 4, 5]

print(my_list)
# Lists maintain order
for item in my_list:
    print(item)

# Tuple
my_tuple = (1, 2, 3, 4, 5)

# Tuples are immutable – attempting to modify will raise an error

for item in my_tuple:
    print(item)

# Set
my_set = {1, 2, 3, 4, 5}

# Sets are mutable
my_set.add(6)
print(my_set) # Output: {1, 2, 3, 4, 5, 6}

# Sets do not maintain order
for item in my_set:
    print(item)

# Dictionary
my_dict = {'name': 'John', 'age': 30, 'city': 'New York'}

# Dictionaries are mutable
my_dict['age'] = 35
print(my_dict) # Output: {'name': 'John', 'age': 35, 'city': 'New York'}

# Dictionaries do not maintain order (prior to Python 3.7)
for key, value in my_dict.items():
    print(key, ': ', value)
```

Output:

Rishabh Rathore  
0827CI211155

[10, 2, 3, 4, 5]

10  
2  
3  
4  
5

1  
2  
3  
4  
5

{1,2,3,4,5,6}

1  
2  
3  
4  
5  
6

{'name': 'John', 'age': 35, 'city': 'New York'}

name : John  
age : 35  
city : New York

**Note:-**

To be or not to be

## Question 2

Explain the difference between the list, tuple , set and dictionary ?

*Solution:*

```
print("Rishabh Rathore")
print("0827CI211155")

# List
my_list = [1, 2, 3, 4, 5]

print(my_list)
# Lists maintain order
for item in my_list:
    print(item)

# Tuple
my_tuple = (1, 2, 3, 4, 5)

# Tuples are immutable – attempting to modify will raise an error

for item in my_tuple:
    print(item)

# Set
my_set = {1, 2, 3, 4, 5}

# Sets are mutable
my_set.add(6)
print(my_set) # Output: {1, 2, 3, 4, 5, 6}

# Sets do not maintain order
for item in my_set:
    print(item)

# Dictionary
my_dict = {'name': 'John', 'age': 30, 'city': 'New York'}

# Dictionaries are mutable
my_dict['age'] = 35
print(my_dict) # Output: {'name': 'John', 'age': 35, 'city': 'New York'}

# Dictionaries do not maintain order (prior to Python 3.7)
for key, value in my_dict.items():
    print(key, ': ', value)
```

Output:

Rishabh Rathore  
0827CI211155

[10, 2, 3, 4, 5]

10

2

3  
4  
5

1  
2  
3  
4  
5

{1,2,3,4,5,6}

1  
2  
3  
4  
5  
6

{'name': 'John', 'age': 35, 'city': 'New York'}

name : John  
age : 35  
city : New York

**Note:-**

To be or not to be