1.1 Python

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

Solution:

```python
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:

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

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

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

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