

## Training Report Day-5

**11 June 2024**

### ❖ SETS IN PYTHON:-

A Python set is a well-defined collection of distinct objects, called elements or members.

Sets are unordered. Set elements are unique—if you try to add an element to a set a second time, it has no effect.

A set itself may be modified, but the elements contained in a set must be immutable (actually hash able, but for the types you are familiar with so far, immutable and hash able are effectively the same thing).

Sets are unordered collections of unique objects; there are two types of set:

1. Sets - They are mutable and new elements can be added once sets are defined.

Example:-

```
basket = {'apple', 'orange', 'apple', 'pear', 'orange', 'banana'}
print(basket)
# duplicates will be removed
a = set('abracadabra')
print(a)
```

2. Frozen Sets - They are immutable and new elements cannot add after it's defined.

Example:-

```
b = frozenset('asdfagsa')
print(b)
cities = frozenset(["Frankfurt", "Basel", "Freiburg"])
print(cities)
```

### ✓ Operations on sets:-

# with other sets

# Intersection

```
{1, 2, 3, 4, 5}.intersection({3, 4, 5, 6})
```

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

# Union

```

{1, 2, 3, 4, 5}.union({3, 4, 5, 6})
# {1, 2, 3, 4, 5, 6}
{1, 2, 3, 4, 5} | {3, 4, 5, 6}
# Difference
{1, 2, 3, 4}.difference({2, 3, 5})
# {1, 4}
{1, 2, 3, 4} - {2, 3, 5}
# Symmetric difference with
{1, 2, 3, 4}.symmetric_difference({2, 3, 5})
{1, 2, 3, 4} ^ {2, 3, 5}
# Superset check
{1, 2}.issuperset({1, 2, 3})
{1, 2} >= {1, 2, 3}
# Subset check
{1, 2}.issubset({1, 2, 3})
{1, 2} <= {1, 2, 3}

```

### ✓ Get the unique elements of a list:-

Let's say you've got a list of restaurants -- maybe you read it from a file. You care about the unique restaurants in the list. The best way to get the unique elements from a list is to turn it into a set:

#### Example:-

```

restaurants = ["McDonald's", "Burger King", "McDonald's", "Chicken Chicken"]
unique_restaurants = set(restaurants)
print(unique_restaurants)

restaurants = ["McDonald's", "Burger King", "Burger king", "McDonald's", "Chicken
Chicken"]
restaurants.remove("McDonald's")
restaurants
# Removes all duplicates and returns another
listlist(set(restaurants))

```