Python Sets

Creating a Set:

```
my_set = {1, 2, 3, 4, 5}              # Creating a set with multiple elements
```

Set Length:

```
my_set = {1, 2, 3, 4, 5}
length = len(my_set)                  # Getting the number of elements in the set
```

Set Membership Testing:

```
my_set = {1, 2, 3, 4, 5}
exists = 3 in my_set                  # Checking if an element exists in the set
```

Set Addition (Adding Elements):

```
my_set = {1, 2, 3}
my_set.add(4)                         # Adding a single element to the set
my_set.update([5, 6, 7])              # Adding multiple elements to the set
```

Set Removal (Removing Elements):

```
my_set = {1, 2, 3, 4, 5}
my_set.remove(3)                      # Removing an element from the set
my_set.discard(6)                     # Removing an element if it exists, without raising an error
my_set.pop()                          # Removing and returning an arbitrary element from the set
```

Set Clearing:

```
my_set = {1, 2, 3, 4, 5}
my_set.clear()                        # Removing all elements from the set
```

Set Union:

```
set1 = {1, 2, 3}
set2 = {3, 4, 5}
union_set = set1.union(set2)          # Creating a new set with elements from both sets
```

Set Intersection:

```
set1 = {1, 2, 3}
set2 = {3, 4, 5}
intersection_set = set1.intersection(set2)   # Creating a new set with common elements from both sets
```

Set Difference:

```
set1 = {1, 2, 3}
set2 = {3, 4, 5}
difference_set = set1.difference(set2)       # Creating a new set with elements in set1 but not in set2
```

Set Symmetric Difference:

```
set1 = {1, 2, 3}
set2 = {3, 4, 5}
symmetric_difference_set = set1.symmetric_difference(set2)   # Creating a new set with elements that are in either of the sets, but not both
```

Set Subset Testing:

```
set1 = {1, 2, 3}
set2 = {1, 2, 3, 4, 5}
is_subset = set1.issubset(set2)         # Checking if set1 is a subset of set2
```

Set Superset Testing:

```
set1 = {1, 2, 3, 4, 5}
set2 = {1, 2, 3}
is_superset = set1.issuperset(set2)     # Checking if set1 is a superset of set2
```

Set Disjoint Testing:

```
set1 = {1, 2, 3}
set2 = {4, 5, 6}
is_disjoint = set1.isdisjoint(set2)     # Checking if set1 and set2 have no common elements
```

Set Copying:

```
my_set = {1, 2, 3}
new_set = my_set.copy()                 # Creating a copy of the set
```

Frozenset:

```
my_set = {1, 2, 3}
frozen_set = frozenset(my_set)          # Creating an immutable version of the set using frozenset
```

Set Comprehension:

```
numbers = {1, 2, 3, 4, 5}
squares = {x ** 2 for x in numbers}     # Creating a new set with the square of each element in numbers using set comprehension
```