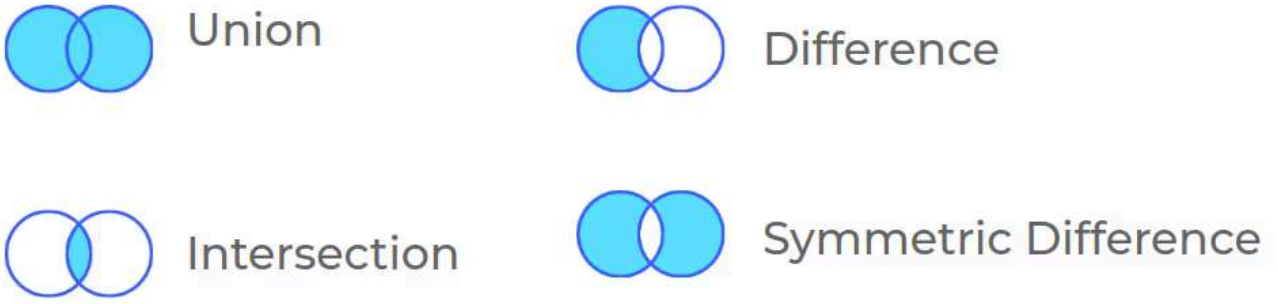
Cheat Sheet

Set Operations

Set objects also support mathematical operations like union, intersection, difference, and symmetric difference.



Union

Union of two sets is a set containing all elements of both sets.

set_a | set_b or set_a.union(sequence)

union() converts sequence to a set, and performs the union.

Code

PYTHON

```
set_a = {4, 2, 8}
set_b = {1, 2}
union = set_a | set_b
print(union)
```

Output

```
{1, 2, 4, 8}
```

Code

PYTHON

```python
set_a = {4, 2, 8}
list_a = [1, 2]
union = set_a.union(list_a)
print(union)
```

Output

```
{1, 2, 4, 8}
```

Intersection

Intersection of two sets is a set containing common elements of both sets.

set_a & set_b or set_a.intersection(sequence)

intersection() converts sequence to a set, and perform the intersection.

Code

PYTHON

```python
set_a = {4, 2, 8}
set_b = {1, 2}
intersection = set_a & set_b
print(intersection)
```

Output

```
{2}
```

Code

PYTHON

```python
set_a = {4, 2, 8}
```

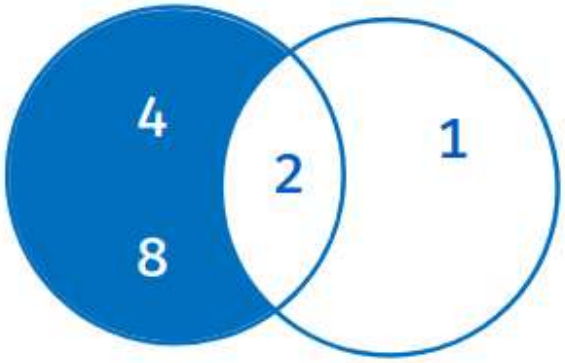
```
list_a = [1, 2]
intersection = set_a.intersection(list_a)
print(intersection)
```

Output

```
{2}
```

Difference

Difference of two sets is a set containing all the elements in the first set but not second.




```
set_a - set_b = {8, 4}
```

set_a - set_b or set_a.difference(sequence)

difference() converts sequence to a set.

Code

PYTHON

```
set_a = {4, 2, 8}
set_b = {1, 2}
diff = set_a - set_b
print(diff)
```

Output

```
{8, 4}
```

Code

PYTHON

```python
set_a = {4, 2, 8}
tuple_a = (1, 2)
diff = set_a.difference(tuple_a)
print(diff)
```

Output

```
{8, 4}
```

Symmetric Difference

Symmetric difference of two sets is a set containing all elements which are not common to both sets.

set_a ^ set_b or set_a.symmetric_difference(sequence)

symmetric_difference() converts sequence to a set.

Code

PYTHON

```python
set_a = {4, 2, 8}
set_b = {1, 2}
symmetric_diff = set_a ^ set_b
print(symmetric_diff)
```

Output

```
{8, 1, 4}
```

{8, 1, 4}

Code

PYTHON

```python
set_a = {4, 2, 8}
set_b = {1, 2}
diff = set_a.symmetric_difference(set_b)
print(diff)
```

Output

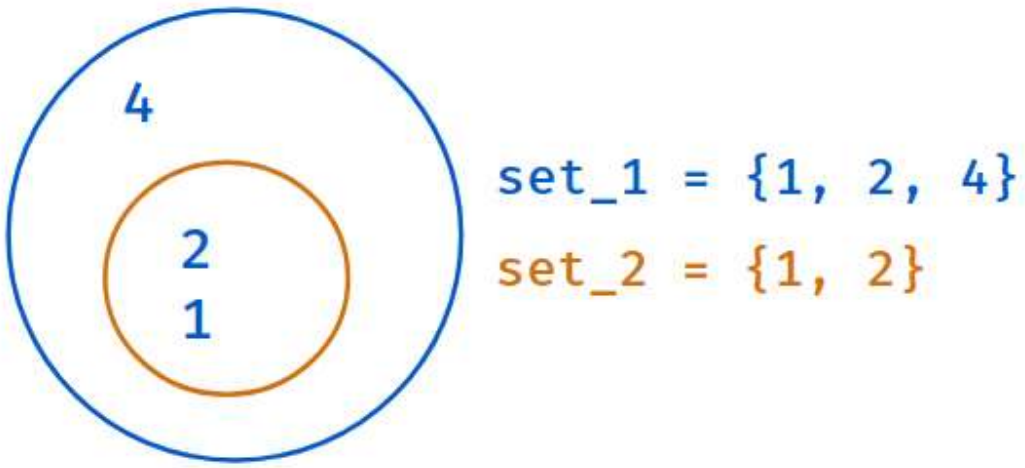
```
{8, 1, 4}
```

Set Comparisons

Set comparisons are used to validate whether one set fully exists within another

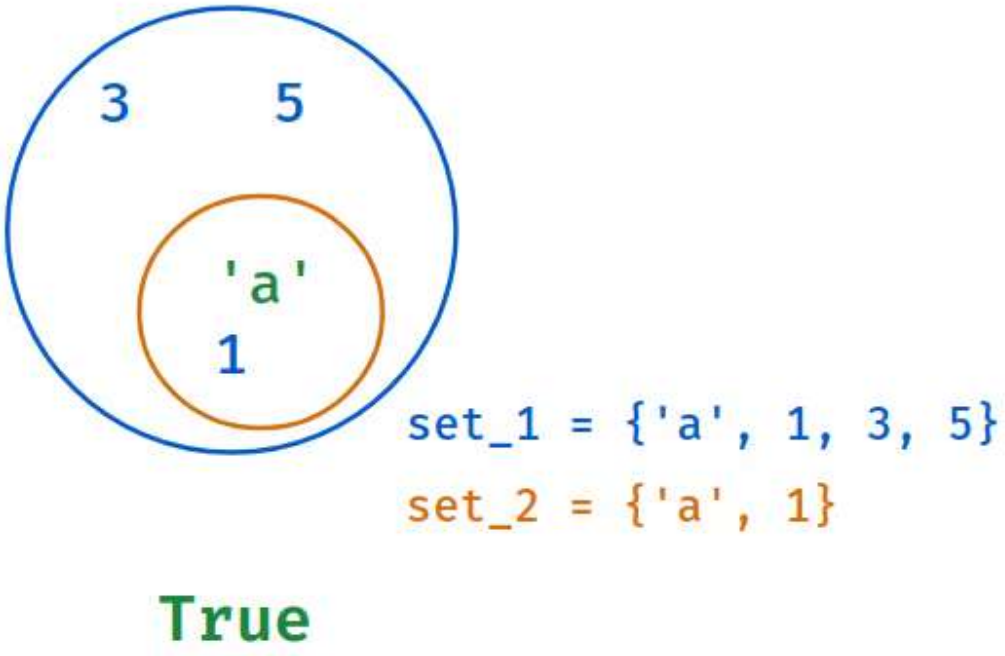
- issubset()
- issuperset()
- isdisjoint()

Subset



set2.issubset(set1) Returns True if all elements of second set are in first set. Else, False

Example - 1



Code

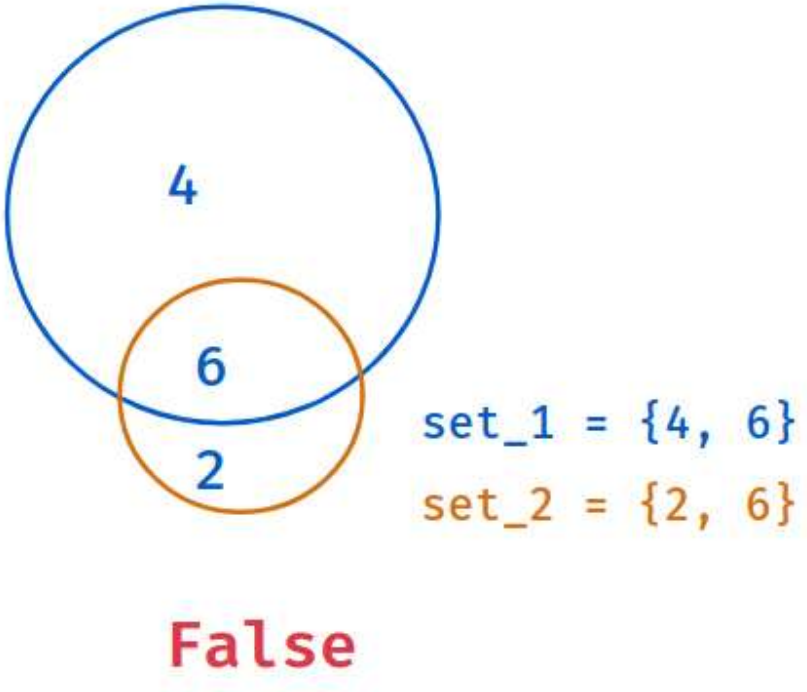
PYTHON

```
set_1 = {'a', 1, 3, 5}
set_2 = {'a', 1}
is_subset = set_2.issubset(set_1)
print(is_subset)
```

Output

```
True
```

Example - 2



Code

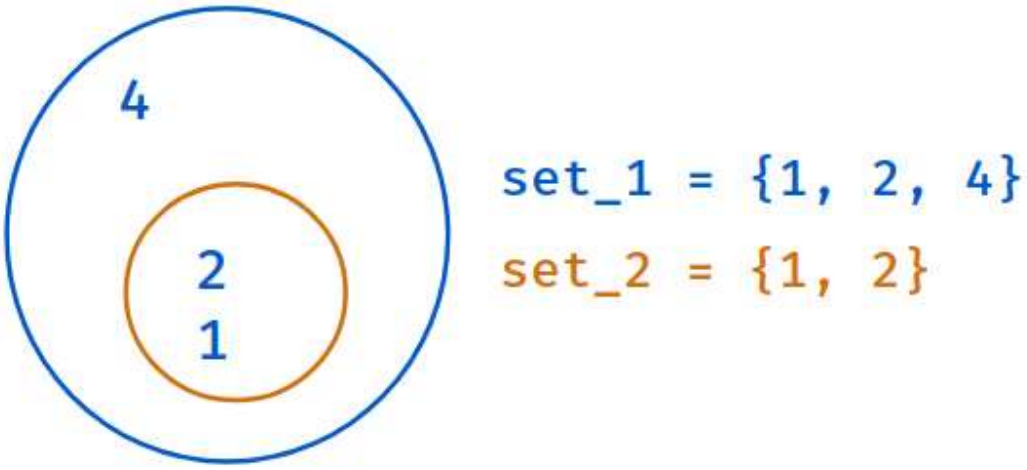
PYTHON

```
set_1 = {4, 6}
set_2 = {2, 6}
is_subset = set_2.issubset(set_1)
print(is_subset)
```

Output

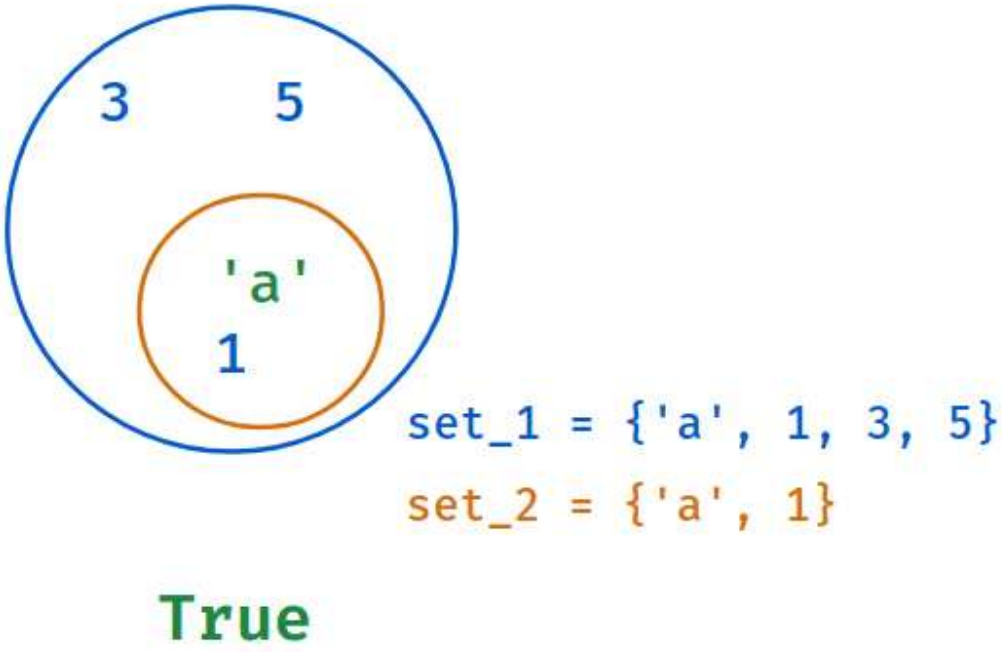
```
False
```

SuperSet



set1.issuperset(set2) Returns True if all elements of second set are in first set. Else, False

Example - 1



Code

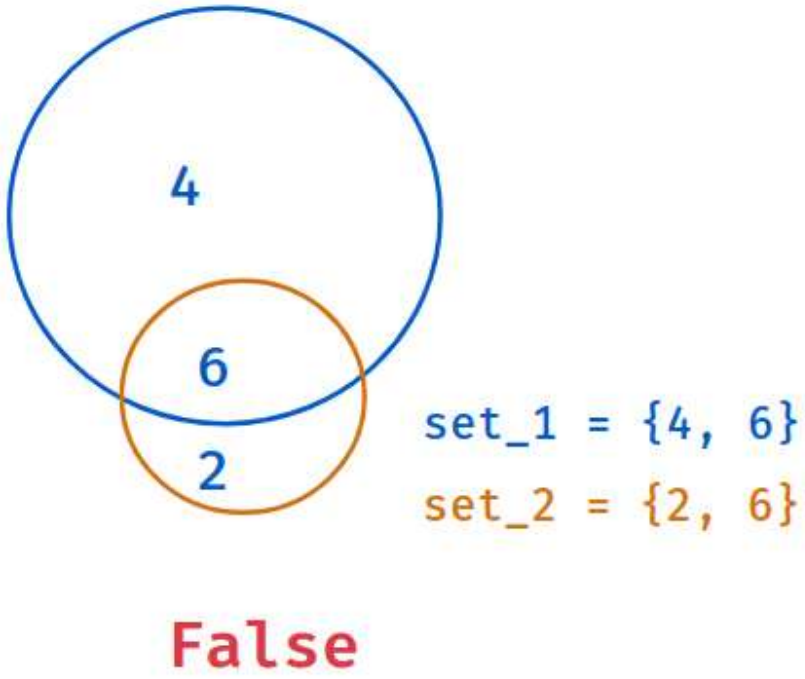
PYTHON

```
set_1 = {'a', 1, 3, 5}
set_2 = {'a', 1}
is_superset = set_1.issuperset(set_2)
print(is_superset)
```

Output

```
True
```

Example - 2



Code

PYTHON

```python
set_1 = {4, 6}
set_2 = {2, 6}
is_superset = set_1.issuperset(set_2)
print(is_superset)
```

Output

```
False
```

Disjoint Sets

set1.isdisjoint(set2) Returns True when they have no common elements. Else, False

Code

PYTHON

```python
set_a = {1, 2}
set_b = {3, 4}
is_disjoint = set_a.isdisjoint(set_b)
print(is_disjoint)
```

Output

```
True
```

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