

sets

November 3, 2022

A *set* is an un-ordered collection of *distinct* objects.

- Sets are like dictionaries except with only keys, no values.
- Like dictionaries, sets can only contain mutable (hashable objects).
- Checking if an item is in a set is fast, regardless of the size of the set.

```
[1]: s = {1, 2, 3, 4, 5}
     3 in s
```

```
[1]: True
```

```
[4]: # uniqueness is enforced
     t = {3, 4, 5, 6, 6, 6, 7}
     t
```

```
[4]: {3, 4, 5, 6, 7}
```

```
[6]: # intersection
     s & t
```

```
[6]: {3, 4, 5}
```

```
[7]: # union
     s | t
```

```
[7]: {1, 2, 3, 4, 5, 6, 7}
```

```
[9]: # set difference
     print(s)
     print(t)
     print(s - t)
     print(t - s)
```

```
{1, 2, 3, 4, 5}
{3, 4, 5, 6, 7}
{1, 2}
{6, 7}
```

```
[12]: # set symmetric difference
     s ^ t
```

[12]: {1, 2, 6, 7}

```
[13]: # compare the speed of finding an item in a list  
big_list = list(range(10**8))
```

```
[20]: -1 in big_list
```

[20]: False

```
[17]: big_set = set(big_list)
```

```
[21]: -1 in big_set
```

[21]: False

```
[ ]:
```