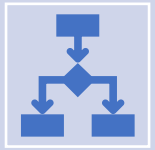
PYTHON-BASIC TO INTERMEDIATE

Learn with N@ima

Day 5

Sets

Python Sets



Sets are used to store multiple items in a single variable.

Sets are written with curly brackets.

set1 = {"apple", "banana“}

Set items

Set items are unordered, unchangeable, and **do not allow duplicate** values.

- Unordered means that the items in a set do not have a defined order.
- Set items can appear in a different order every time you use them, and cannot be referred to by index or key.
- Set items are unchangeable, meaning that we cannot change the items after the set has been created.
- Once a set is created, you cannot change its items, but you can remove items and add new items.
- Sets cannot have two items with the same value.
- To determine how many items a set has, use the **len()** function.
- Set items can be of any data type. A set can contain different data types

Access Set items

- You cannot access items in a set by referring to an index or a key.
- But you can loop through the set items using a for loop, or ask if a specified value is present in a set, by using the in keyword.

```
set1 = {"apple", "banana", "Orange"}

for x in set1:

  print(x)
```

Add Set items

- Once a set is created, you cannot change its items, but you can add new items.
- To add one item to a set use the add() method.
- To add items from another set into the current set, use the update() method.

```
set1 = {"apple", "banana”, ”Orange”}

set1.add(‘Cherry’)

print(set1)
```

Remove Set item

- To remove an item in a set, use the remove(), or the discard() method.
- If the item to remove does not exist, remove() will raise an error. But discard() will NOT raise an error.
- The pop() method also remove an item, but this method will remove the last item.
- The clear() method empties the set and the del keyword will delete the set completely.

```
set1 = {"apple", "banana”, ”Orange”}

set1.remove("banana”)

print(set1)
```

Join Sets

- The union() method that returns a **new set** containing all items from both sets
- The update() method that **inserts** all the items from one set into another.
- The intersection_update() method will keep only the items that are present in both sets.
- The intersection() method will return a **new set**, that only contains the items that are present in both sets.
- The symmetric_difference_update() method will keep only the elements that are NOT present in both sets.
- The symmetric_difference() method will return a new set, that contains only the elements that are NOT present in both sets.

Practice Work

1. Write a program to input seven numbers from the user and display all the unique numbers.
2. What will be the length of the following Set S after operations?

```
S = Set()
S.add(10)
S.add("10")
S.add(10.0)
```

THANK YOU