



# Python Programming

Session 7

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# TOPICS

## Python Fundamentals and Programming

### ❖ **Sets** and **Dictionaries**

# Multiple value in one variable

What if we wanted a variable which could have multiple value

We can use:

**LIST**

**Tuple**

**Set**

**Dictionary**



# Set

- Sets are used to store multiple items in a single variable.
- Sets are one of the 4 built-in data types in python used to store collections of data.
- Sets are written with curly brackets

```
thisset = {"apple", "banana", "cherry"}
```



## Sets features

Set items can appear in a different order every time you use them, and can not be referred to by index or key.

Sets Items are:

1. Unordered
  - a. Unordered means that the items in a set do not have a defined order.
2. Unchangeable
  - a. Meaning that we cannot change the items after the set has been created.
3. Duplicates Not Allowed
  - a. Sets can not have two items with the same value.

## Access Set Items

We can not access items in a set by referring to an index or key as we said, So how to access item ?

We can access set's items by using loop or asking if a specified value is present.

Also, once a set is created, we cannot change its items, but we can add new items.



## Exercise #1

Research for how to add item or items to a set?

Research for how to remove item or all items from a set?

Research for how to Join sets?



# Dictionary

Dictionary are used to to store data values in form key:value pairs.

Dictionaries are written with brackets as we wrote sets, but dictionary have keys and values, actually in dictionary we determine the index of each element within it and the index are not by default from 0 to ...

```
thisdict = {  
    "brand": "Ford",  
    "model": "Mustang",  
    "year": 1964  
}
```



# Dictionary features

Dictionaries items are:

1. Ordered
  - a. It means that the items have a define order, and that order will not change.
  - b. Unordered means that the item does not have a defined order and you cannot refer to an item by using an index.
2. Changeable
  - a. Dictionaries are changeable, meaning that we can change, add or remove items after the dictionary has been created.
3. Duplicates Not Allowed
  - a. Dictionaries cannot have two items with the same key, it results overwrite



## Exercise #2

Research for how to access key or value in dictionaries?

Research for how to change the value of a item in dictionary?

Research for how to add a new item to the dictionary?

Research for how to remove a item from the dictionary?

