Day 5 – Dictionary,Sets

Dictionary:

- Python provides another composite datatype called a **dictionary**, which is similar to a list in that it is a collection of objects.
- A dictionary consists of a collection of key-value pairs. Each key-value pair maps the key to its associated value.
- Dictionary can be defined by enclosing a comma-separated list of key-value pairs in curly braces ({}). A colon (:) separates each key from its associated value

```
dictionary = {<key>: <value>,
              <key>: <value>,}
```

Example:

```
capitals={"Maharashtra":"Mumbai",
          "Telangana":"Hyderabad",
          "Tamilnadu":"Chennai",
          "Karnataka":"Bengaluru",
          "Bihar":"Patna"}
```

- A value is retrieved from a dictionary by specifying its corresponding key in square brackets

Example:

```
print(capitals['Maharastra'])
```

- Adding an entry to an existing dictionary is simply a matter of assigning a new key and value

Example:

```
capitals['Goa'] ='panaji'
```

- If you want to update an entry, you can just assign a new value to an existing key

Example:

```
capitals['Tamilnadu'] ='Madras'
```

- Delete an entry, use the `del` statement, specifying the key to delete

Example:

```
del capitals['Maharastra']
```

- There is no restrictions on dictionary values.A dictionary value can be any type of object Python supports, including mutable types like lists and dictionaries, and user-defined objects
- a given key can appear in a dictionary only once. Duplicate keys are not allowed
- dictionary key must be of a type that is immutable. A tuple can also be a dictionary key, because tuples are immutable

Method	Description
clear()	Removes all the elements from the dictionary
copy()	Returns a copy of the dictionary
fromkeys()	Returns a dictionary with the specified keys and value
get()	Returns the value of the specified key
items()	Returns a list containing a tuple for each key value pair
keys()	Returns a list containing the dictionary's keys
pop()	Removes the element with the specified key
popitem()	Removes the last inserted key-value pair
setdefault()	Returns the value of the specified key. If the key does not exist: insert the key, with the specified value
update()	Updates the dictionary with the specified key-value pairs
values()	Returns a list of all the values in the dictionary

Sets:

- A set is a collection which is unordered and unindexed. In Python, sets are written with curly brackets.
  Example: `CSK = {"dhoni", "bravo", "jadeja"}`
- Set cannot access items in a set by referring to an index or a key.
- To add one item to a set use the add() method& To add more than one item to a set use the update() method.
- Remove an item in a set, use the remove(), or the discard() method.

Exercise:

1) Write a Python script to merge two Python dictionaries
2) Write a Python program to remove a key from a dictionary
3) Write a Python program to map two lists into a dictionary
4) Write a Python program to find the length of a set
5) Write a Python program to remove the intersection of a 2nd set from the 1st set