chapter 5 : Dictionary & sets.

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Dictionary is a collection of key-value pairs

syntax:

```
a = {"key" : "value",
     "kaif" : "code",
     "marks" : "100",
     "List" : [1,2,9]}
```

a["key"] ⇒ Prints "value"
a["List"] ⇒ Prints [1,2,9]

Properties of Python Dictionaries.

1) It is unordered
2) It is mutable
3) It is indexed.
4) Cannot contain duplicate keys.

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Dictionary methods.
Consider the following dictionary.

a = {"name": "Kaif",
"from": "India"
"marks": [95, 92, 89]}

2) a.items(): returns a list of (key, value) tuples.

2) a.key(): returns a list containing dictionarys keys.

3) a.update({"Friend": "Farhan"}):

Updates the dictionary with supplied key-value pairs.

4) a.get("name"): returns the value of the specified keys (and value is returned eg. "Kaif" is returned here)

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more methods are available on docs.Python.org.

sets in Python.

set is a collection of non repetitive elements.

s = set() ⇒ No repetition allowed!
s.add(2)
s.add(2) ⇒ or set = {1, 2}.

If you are a Programming begneer without much knowladge of mathematical operation on sets, you can simple look at sets in python as data types containing unique values.

Properties of sets.

2. sets are unordered ⇒ Element's order doesn't matter.
2) sets are unindexed. ⇒ Cannot access elements by index.

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3. There is no way to change items in sets.
4. sets cannot contain duplicate values.

operations on sets
Consider the following set:

$S = \{1, 8, 2, 3\}$

1) len(s): Returns 4, the length of the set

2) S.remove(8): updates the sets and remove 8 from S.

3. S.pop(): Removes an arbitrary element from the set and returns the element removed.

4. S.clear(): Empties the set s

5. S.union($\{8, 11\}$): Returns a new set with all items from both sets $\Rightarrow \{1, 8, 2, 3, 11$

6) S.intersection($\{8, 11\}$): Returns a set which contains only items in both sets $\Rightarrow$

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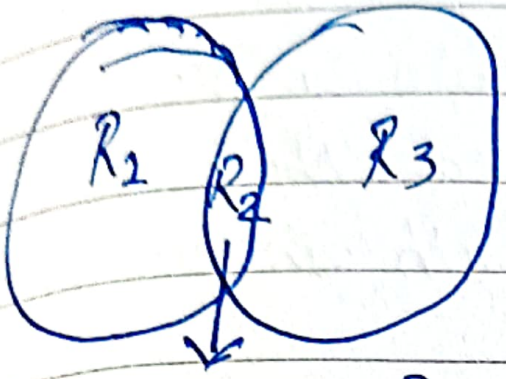

A $A \cap B$ B

$R_2 \Rightarrow A \cap B$

$R_1 + R_2 + R_3 \Rightarrow A \cup B$

$R_1 + R_3 \Rightarrow A \Delta B$

$R_1 \Rightarrow A - B$

$R_3 \Rightarrow B - A$.

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