

5.

## Dictionary & Sets

Page No.

Date

Dictionary is a collection of key value pairs.

Syntax:

`a = { }`

`"key" : "value",`

`"Tejas" : "Code",`

`"marks" : "100",`

`"Lists" : [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.

5.

## Dictionary & Sets

Page No.

Date

### Dictionary Methods

Consider the following dictionary

$a = \{$

"name": "Tejas",

"from": "Nagpur",

"marks": [92, 98, 96]

$\}$

1. `a.items()`:

Return a list of (key, value) tuples.

2. `a.keys()`:

Returns a list containing dictionary keys.

3. `a.update({"friend": "Dumbo"})`:

Updates the dictionary with supplied key value pairs.

4. `a.get("name")`:

Returns the value of a specified key (and value is returned eg: "Tejas" return here)

- \* More methods are available on python.org documents.

## Sets

~~Set~~ is a collection of non repetitive element.

~~s~~ = set()

→ Non repetition allowed!

2. Add (1)

3. Add (2)

→ or set = {1, 2}

If you are a programming beginner without much knowledge of mathematical operations on sets, you can simply look at sets in python as data type containing unique value.

## Properties of Sets

1. Sets are unordered →

Element's order doesn't matter.

2) Set are Unindexed → ~~you can't~~ →  
Cannot access element by index.

3. There is no way to change items in sets.
4. Sets cannot duplicate value.

### Operators 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) :

Updating the set S & removes 8 from S.

3] s.pop() :

Remove an arbitrary element from the set & returns the element removed.

4]  $s.\text{clear}()$ :

Empties the set  $s$

5]  $s.\text{union}(\{8, 11\})$ :

Returns a new set with

all items from both sets.

$\hookrightarrow \{1, 8, 2, 3, 11\}$

6]  $s.\text{intersection}()$ : Returns a set which  
contains only item in both  
sets  $\Rightarrow \{8\}$

1] Write a program to create a dictionary of Hindi words with values as their English translations provide user with an option to look it up!

: (S11, 23) Ques. 2 [a]

2] Write a program to input eight numbers from the user & display all the unique numbers (once).

3] Can we have a set with 18(int) & "18"(str) as a value in it.

4] What will be the length of following set - 5 :

$s = \{ \}$

$s.add(20)$

$s.add(20.0)$

$s.add("20")$

↳ Length of s after these operations?

5]  $s = \{ \}$

What is the type of s.

6] Create an empty dictionary. Allow 4 friends to enter their favourite languages as values & use keys as their names.

Assume that the names are unique.

- 7] If names of 2 friends are same, what will happen to the program in problem 6.
- 8] If languages of two friends are same; what will happen to the program in problem 6?
- 9] Can you change the values inside a list which is contained in set S.

$$S = \{ 8, 7, 12, "Tejas", [1, 2] \}$$