

# Dictionaries

**Spoken Tutorial Project**

**<http://spoken-tutorial.org>**

**National Mission on Education through ICT**

**<http://sakshat.ac.in>**

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# Learning Objectives



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- ▶ **Create dictionaries**



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- ▶ **Add and delete data from dictionaries**



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- ▶ **Retrieve data from dictionaries**



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- ▶ **Check for presence of keys**



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- ▶ **Retrieve data from dictionaries**
- ▶ **Check for presence of keys**
- ▶ **Iterate over elements**



# System Specifications





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## ► Ubuntu Linux 16.04



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- ▶ **Python 3.4.3**



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- ▶ **Ubuntu Linux 16.04**
- ▶ **Python 3.4.3**
- ▶ **IPython 5.1.0**



# Pre-requisite

**To practise this tutorial, you should know how to -**



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- ▶ **use basic data types and operators**



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If not, see the relevant Python tutorials on <http://spoken-tutorial.org>



# Overview of Dictionaries





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- ▶ Dictionary is an unordered collection of items which has key:value pairs



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- ▶ Dictionary is an unordered collection of items which has **key:value** pairs
- ▶ Dictionary is used to look up for a specific **key** and retrieve the corresponding **value**



# Overview of Dictionaries

- ▶ **Keys** are unique within a dictionary while **values** may not be



# Overview of Dictionaries

- ▶ **Keys** are unique within a dictionary while **values** may not be
- ▶ **The values of a dictionary can be of any data type**



# Overview of Dictionaries

- ▶ **Keys** are unique within a dictionary while **values** may not be
- ▶ The **values** of a dictionary can be of any data type
- ▶ **But the keys must be of immutable data type such as strings, numbers or tuples**



# Accessing Elements



# Accessing Elements

**The value of a dictionary can be accessed using the corresponding keys**



# Accessing Elements

The value of a dictionary can be accessed using the corresponding keys

► **Syntax**

`dictionary_name[key]`





# Usage of in

- ▶ The method `in` will return `True` if the key is found in the dictionary



# Usage of in

- ▶ The method **in** will return **True** if the key is found in the dictionary
- ▶ It will return **False** if key is not present



# Usage of in

- ▶ The method **in** will return **True** if the key is found in the dictionary
- ▶ It will return **False** if key is not present
- ▶ **Note that we can check only for the presence of the keys in dictionaries and not values**



# Usage of in

- **Keys of a dictionary are not ordered**



# Usage of in

- ▶ **Keys** of a dictionary are not ordered
- ▶ Hence, slicing and striding are not valid on dictionaries



# Retrieve keys and values



# Retrieve keys and values

- ▶ **keys()** is used for getting a list of the keys



# Retrieve keys and values

- ▶ **keys()** is used for getting a list of the keys
- ▶ **values()** is used for getting a list of values





# Exercise 1

```
student = {'name':'raj', 'age':16,  
'gender':'male', 'class':10}
```

Print the **keys** and **values** of the dictionary **student** one by one

Hint: use **items()** and **for** loop



# Summary

- ▶ Create dictionaries
- ▶ Access elements of a dictionary using **keys**
- ▶ Add elements to a dictionary by assigning a **value** to a **key**
- ▶ Delete elements from a dictionary by using the function **del**



# Summary

- ▶ Retrieve the **keys** and **values** by using the methods **keys()** and **values()** respectively
- ▶ Iterate over elements of a dictionary using a **for** loop



# Evaluations

1. Given  $d = \{1:'a', 2:'b'\}$

How do you retrieve the value 'b'?

2. Delete the value 'b' from the dictionary  $d$



# Solutions

1. `d[2]`

2. `del d[2]`



# Forum to answer questions

- ▶ Do you have questions in **THIS Spoken Tutorial?**
- ▶ Choose the minute and second where you have the question.
- ▶ Explain your question briefly.
- ▶ Someone from the **FOSSEE** team will answer them. Please visit

<http://forums.spoken-tutorial.org/>



# Forum to answer questions

- ▶ Questions not related to the Spoken Tutorial?
- ▶ Do you have general / technical questions on the Software?
- ▶ Please visit the FOSSEE Forum  
<http://forums.fossee.in/>
- ▶ Choose the Software and post your question.



# Textbook Companion Project

- ▶ The FOSSEE team coordinates coding of solved examples of popular books
- ▶ We give honorarium and certificate to those who do this

For more details, please visit this site:

<http://tbc-python.fossee.in/>





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- ▶ **It is supported by the National Mission on Education through ICT, MHRD, Government of India**
- ▶ **More information on this mission is available at:**

<http://spoken-tutorial.org/NMEICT-Intro>



# THANK YOU!

For more information, visit our website  
<http://fossee.in/>

