

Data Structures II : Dictionaries & Set

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Course: Introduction to Scientific Programming
Book: Data Structures II : Dictionaries & Set

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Dictionaries

A dictionary is a mapping data structure that maps each key to some value. For instance, think about capitals as a dictionary, which uses a country name as the key. Capitals would map "Bangladesh" to "Dhaka".

```
>> capitals = {"Bangladesh": "Dhaka", "Belgium": "Brussels"}
```

Key	:	Value
{		
"Bangladesh"	:	"Dhaka",
"Belgium"	:	"Brussels",
"Germany"	:	"Berlin"
}		

Dictionaries are appropriate for storing data organized by name, rather than position:

- Index of a programming book
- Contacts in your phone
- Temperature records for each city of a country
- Number of occurrences of each word in a text file

Set

Sets are used to group unordered collections of **unique** and **immutable** objects. The uniqueness of a set means that an object only appears once in a set whereas immutability means that it is not possible to update the objects within a set.

```
a = set({ 'Landsat 1', 'Landsat 2', 'Landsat 3' })
```

Several operations on a set include:

- Set difference
- Set intersection
- Set union
- Symmetric set difference
- Subset test

§Superset test

Presentations & Exercises

Recorded Lectures:

- [Dictionary and Sets](#)

Presentations

- Slides: [SL_ISC_05_Dictionaries](#)

Exercises

- [Dictionaries and Sets](#)