Python Dictionary

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# Python Dictionary

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| * Dictionaries are used to store data values in key:value pairs. * A dictionary is a collection which is ordered\*, changeable and does not allow duplicates. * The values in dictionary items can be of any data type * From Python's perspective, dictionaries are defined as objects with the data type 'dict':   >>> print(type(thisdict))  <class 'dict'> | Dictionaries are written with curly brackets, and have keys and values:  Create and print a dictionary:  **thisdict = {**  **"brand": "Ford",**  **"model": "Mustang",**  **"electric": False,**  **"colors": ["red", "white", "blue"]**  **"year": 1964**  **}**  **print(thisdict)** |
| * [**List**](https://www.w3schools.com/python/python_lists.asp) is a collection which is ordered and changeable. Allows duplicate members. * [**Tuple**](https://www.w3schools.com/python/python_tuples.asp) is a collection which is ordered and unchangeable. Allows duplicate members. * [**Set**](https://www.w3schools.com/python/python_sets.asp) is a collection which is unordered, unchangeable\*, and unindexed. No duplicate members. * **Dictionary** is a collection which is ordered\*\* and changeable. No duplicate members. | Get the value of the "model" key:  **x = thisdict["model"]**  **x = thisdict.get("model")**  Get the keys of the dictionary:  **x = thisdict.keys()** |
| **Loops**  Print all key **names** in the dictionary, one by one:  **for x in thisdict:**  **print(x)**  Print all values in the dictionary, one by one:  **for x in thisdict:**  **print(thisdict[x])**  **for x in thisdict.values():**  **print(x)**  return the keys of a dictionary:  **for x in thisdict.keys():**  **print(x)**  Loop through both keys and values, by using the items() method:  **for x, y in thisdict.items():**  **print(x, y)** | **dictionary that contain three dictionaries:**  **myfamily = {**  **"child1" : {**  **"name" : "Emil",**  **"year" : 2004**  **},**  **"child2" : {**  **"name" : "Tobias",**  **"year" : 2007**  **},**  **"child3" : {**  **"name" : "Linus",**  **"year" : 2011**  **}**  **}**  create one dictionary that will contain the other three dictionaries:  **child1 = {**  **"name" : "Emil",**  **"year" : 2004**  **}**  **child2 = {**  **"name" : "Tobias",**  **"year" : 2007**  **}**  **child3 = {**  **"name" : "Linus",**  **"year" : 2011**  **}**  **myfamily = {**  **"child1" : child1,**  **"child2" : child2,**  **"child3" : child3**  **}** |

# Dictionary Methods

Python has a set of built-in methods that you can use on dictionaries.

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| **Method** | **Description** |
| [clear()](https://www.w3schools.com/python/ref_dictionary_clear.asp) | Removes all the elements from the dictionary |
| [copy()](https://www.w3schools.com/python/ref_dictionary_copy.asp) | Returns a copy of the dictionary |
| [fromkeys()](https://www.w3schools.com/python/ref_dictionary_fromkeys.asp) | Returns a dictionary with the specified keys and value |
| [get()](https://www.w3schools.com/python/ref_dictionary_get.asp) | Returns the value of the specified key |
| [items()](https://www.w3schools.com/python/ref_dictionary_items.asp) | Returns a list containing a tuple for each key value pair |
| [keys()](https://www.w3schools.com/python/ref_dictionary_keys.asp) | Returns a list containing the dictionary's keys |
| [pop()](https://www.w3schools.com/python/ref_dictionary_pop.asp) | Removes the element with the specified key |
| [popitem()](https://www.w3schools.com/python/ref_dictionary_popitem.asp) | Removes the last inserted key-value pair |
| [setdefault()](https://www.w3schools.com/python/ref_dictionary_setdefault.asp) | Returns the value of the specified key. If the key does not exist: insert the key, with the specified value |
| [update()](https://www.w3schools.com/python/ref_dictionary_update.asp) | Updates the dictionary with the specified key-value pairs |
| [values()](https://www.w3schools.com/python/ref_dictionary_values.asp) | Returns a list of all the values in the dictionary |

# Python Collections (Arrays)

There are four collection data types in the Python programming language:

* [**List**](https://www.w3schools.com/python/python_lists.asp) is a collection which is ordered and changeable. Allows duplicate members.
* [**Tuple**](https://www.w3schools.com/python/python_tuples.asp) is a collection which is ordered and unchangeable. Allows duplicate members.
* [**Set**](https://www.w3schools.com/python/python_sets.asp) is a collection which is unordered, unchangeable\*, and unindexed. No duplicate members.
* **Dictionary** is a collection which is ordered\*\* and changeable. No duplicate members.

# Resources

* [Python Dictionaries](https://www.w3schools.com/python/python_dictionaries.asp)