Dictionaries Cheat Sheet

A Python dictionary (**`dict`**) is a special container type. It contains a collection of ***items***, which are called ***key-value pairs*** and have the following form

`key:val`

The **`key`** in an item must be an *immutable* object and the **`val`** can be any type of object. The items contained in a dictionary are delimited by curly braces (**`{`**and **`}`**) and separated by commas. For example,

```
A = {'CA':38332521, 'TX':26448193, 'MI':9895622}
```

creates a new **`dict`** containing 3 items and assigns variable **`A`** a reference to it.

The keys in a dictionary are used to retrieve and update values, and to create items.

- To create an item or update a value for a key: **`a_dict[k] = exp`**

  If **`a_dict`** contains an item whose key equals **`k`**, then the assignment replaces the value in this item with the value of **`exp`**; otherwise, the assignment creates an item with key equal to **`k`** and value equal to **`exp`** and adds this new item to **`a_dict`**.

- To retrieve a value: when not on the left-side of an assignment, **`a_dict[k]`** returns the value in the item in **`a_dict`** whose key equals **`k`**; or raises a **`KeyError`**, if **`a_dict`** does not contain any item whose key equals **`k`**.

A **`dict`** is iterable; but you iterate through a **`dict`** using its keys.

`exp in a_dict`: returns **`True`** if **`exp`** is a *key* in **`a_dict`**; and **`False`**, otherwise.

`for var in a_dict`: iterates through the *keys* of **`a_dict,`** assigning each key to **`var`** in its turn and executing the associated suite

`len(a_dict)`: returns the number of *items* in **`a_dict`**
`max(a_dict)`: returns the maximum *key* in **`a_dict`**
`min(a_dict)`: returns the minimum *key* in **`a_dict`**

`a_dict.keys()`: returns the collection (iterable) of keys in **`a_dict`**
`a_dict.values()`: returns the collection (iterable) of values in **`a_dict`**
`a_dict.items()`: returns the collection (iterable) of items in **`a_dict`**
`del a_dict[exp]`: deletes the item in **`a_dict`** whose key equals **`exp`**