



Using Dictionaries

School of Information Studies
Syracuse University

Dictionary: Defined

Consists of a number of pairs

- Key
- Value

Previous lists were indexed by integers

Dictionary uses the key to index

Creating a Dictionary

```
>>>emptydict = dict ()
```

```
>>>emptydict
```

```
{}
```

```
>>>type (emptydict)
```

```
<class 'dict'>
```

Another way to initialize empty dictionary

```
>>>emptydict = {}
```

Adding Data to Dictionary

```
>>>phonedict = {'eric': '454-5555', 'john': '454-5195',  
'michael': '454-9999'}
```

```
>>>type (phonedict)
```

```
<class 'dict'>
```

```
>>>phonedict
```

```
{'eric': '454-5555', 'michael': '454-9999', 'john': '454-  
5195'}
```

```
>>>len (phonedict)
```

```
3
```

Items in Dictionary

Not necessarily in the same order

Cannot assume items in any particular order

Functions

- `Keys ()`
 - `>>>phonedict.keys ()`
 - `dict_keys (['eric', 'michael', 'john'])`
- `Values ()`
 - `>>>phonedict.values ()`
 - `dict_values (['454-5555', '454-9999', '454-5195'])`
- `Items ()`
 - `>>>phonedict.items ()`
 - `dict_items ([(('eric', '454-5555'), ('michael', '454-9999'), ('john', '454-5195'))])`

Items in Dictionary

To find a particular value

- `>>>phonedict['michael']`
- `'454-9999'`

Key that is not defined

- `>>>phonedict['chris']`
- Traceback (most recent call last):
- file “<stdin>”, line 1, in <module>
- `Keyerror: 'chris'`

Use 'in' Boolean operator

- `>>'michael' in phonedict`
- `True`
- `>>>'chris' in phonedict`
- `False`

Adding Items to Dictionary

Use the indexed element

- `>>>phonedict['chris'] = '454-7951'`
- `>>>phonedict`
- `{'eric': '454-5555', 'michael': '454-9999', 'john': '454-5195', 'chris': '454-7951'}`

To print items in dictionary

- `>>>for item in phonedict:`
- `... print (item)`
- `...`
- `eric`
- `michael`
- `john`

Printing Items in Dictionary

Use the indexed element

- `>>>for key in phonedict:`
- `... print (key, phonedict[key])`
- `...`
- `eric 454-555`
- `michael 454-9999`
- `john 454-5195`

Use the key and value

- `>>>for key, value in phonedict.items():`
- `... print (key, value)`
- `...`
- `eric 454-555`
- `michael 454-9999`
- `john 454-5195`

Sorting Items in Dictionary

Use the indexed element

- `>>>sorted (phonedict)`
- `['eric', 'john', 'michael']`

- `>>>for key in sorted (phonedict):`
- `... print(key, phonedict[key])`
- `...`
- `eric 454-555`
- `john 454-5195`
- `michael 454-9999`