

## Python dictionaries

- recall from our first python lecture that python has a dictionary type

```
#!/usr/bin/python
d = {'spam':2, 'ham':1, 'eggs':10}
print d['eggs']
```

```
./py13.py
10
```

## Python dictionaries

- can alter the dictionary
  - by adding new entries
  - by changing values
  - by removing entries
- we can test for the presence of an entry within the dictionary

## Python dictionaries

```
#!/usr/bin/python
d = {'spam':2, 'ham':1, 'eggs':10}
print d['eggs']

d['eggs']=12
d['bacon']=1
print d['bacon']
print d
```

```
./py14.py
10
1
{'spam': 2, 'ham': 1, 'bacon': 1, 'eggs': 12}
```

## Dictionary initialisation

- we can create an empty dictionary by:

```
d = {}
```

- we can add to a dictionary by:

```
d['foobar'] = 4
```

## Dictionary modification

- we can remove an entry via:

- `del d['eggs']`

## Dictionary modification

- we can test whether an item exists in the dictionary

- ```
#!/usr/bin/python
d = {'spam':2, 'ham':1, 'eggs':10}
if d.has_key('eggs'):
    print 'we have some eggs'
else:
    print 'we do not have any eggs'

if d.has_key('flour'):
    print 'we have some flour'
else:
    print 'we do not have any flour'
```