

Python While Loop

```
#!/usr/bin/python
n = 12
i = 1
while i<=12:
    print i,"x 8 =", i*8
    i=i+1
print "hello world"
```

Python Functions

```
#!/usr/bin/python
def mult8(i):
    return i*8
for i in range(1,13):
    print i,"x 8 =", mult8(i)
```

if statement and functions

```
#!/usr/bin/python
def mult8(i):
    print i,"x 8 =", i*8
    if i<12:
        mult8(i+1)
mult8(1)
```

Python Modules

- there are many Python modules available
- which cover many topics
 - networking modules
 - graphic modules, OpenGL, GUI, graphing
 - mail, http, telnet, pop3, imap modules
 - operating system modules
- html parsing modules
- examine the Python modules [python online docs](http://flopsie.comp.glam.ac.uk/python/html/index.html) (<http://flopsie.comp.glam.ac.uk/python/html/index.html>)

urllib

- used to download files from servers using
 - ftp, http and local file access

urllib example

```
#!/usr/bin/python
from urllib import urlretrieve
urlretrieve('http://floppsie.comp.glam.ac.uk/index.html',
            'temp.html')
```

urllib example

```
#!/usr/bin/python
import os
import urllib
Version = '1.5'
filename = 'python-%s.tar.gz' % Version
remoteaddr = 'ftp://ftp.python.org/pub/python/src/'
print "attempting to download a file", filename
print "from", remoteaddr
urllib.urlretrieve(remoteaddr + filename,
                  filename)
```

- in this example the contents of the string being passed to the function (method) is incorrect
 - the python file has moved, so see if you can locate a similar file on the remote website and then modify the above code to download this new file
 - hint use a browser to navigate to the correct file, then cut and paste the url into your code

smtp module

- Simple Mail Transport Protocol is the most common protocol whereby email is transmitted across the Internet

```
#!/usr/bin/python
import smtplib, string, sys, time
mailserver = "localhost"
From = string.strip(raw_input('From: '))
To = string.strip(raw_input('To: '))
Subject = string.strip(raw_input('Subject: '))
Date = time.ctime(time.time())
Header = ('From: %s\nTo: %s\nDate: %s\nSubject: %s\n\n'
         % (From, To, Date, Subject))
Text = "my message"
server = smtplib.SMTP(mailserver)
failed = server.sendmail(From, To, Header + Text)
server.quit()
if failed:
    print 'failed to send mail'
else:
    print 'all done..'
```

Testing your mail program

- `$ python sendmail.py`

Python Gotya's

- be careful to ensure that your code is indented correctly
- be very careful not to name your file to a name used by a library you are importing
- for example do **not** call this file `string.py`

- ```
#!/usr/bin/python
import string
words=string.split('hello world again')
print words
```

## Python Gotya's

- the python interpreter will read your file twice
  - one when you run the file
  - and again when it comes across the `import string!`
- name the file `teststring` and it will work fine
  - if you did call it `string.py` and run then you will need to remove `string.py` and also `string.pyc`

## Tutorial

- type in the `urllib` example given during the lecture and check that it works
  - now modify this example so that your script prompts the user for
    - the url
    - the local file name
- write a python program which writes some text to a file (hint see file handling in python notes)
- write a python program which appends some text to the file
- write a python program which reads the contents of a file and displays it on the screen
- now write a python program which prints a small menu and depending upon the input choice (1, 2, 3) calls, a function:
  - to write text to a file
  - to append text to a file
  - to read the file and display the contents