LNK Python Webserver

How Does the web work?

- After you enter a URL in the browser.. What happens?

- Use the IP of www.yahoo.com instead of url

- What is the default port for http?

How Does the Internet Work?

- How does your laptop communicate to the internet?

OSI Model				
Layer	**Protocol data unit (PDU)**	**Function**[3]		**Examples**
Host layers	7. Application	Data	High-level APIs, including resource sharing, remote file access, directory services and virtual terminals	TLS, FTP, HTTP, HTTPS, SMTP, SSH, Telnet
	6. Presentation		Translation of data between a networking service and an application; including character encoding, data compression and encryption/decryption	CSS, GIF, HTML, XML, JSON
	5. Session		Managing communication sessions, i.e. continuous exchange of information in the form of multiple back-and-forth transmissions between two nodes	RPC, SCP, PAP
	4. Transport	Segment (TCP) /Datagram (UDP)	Reliable transmission of data segments between points on a network, including segmentation, acknowledgement and multiplexing	NETBEUI, TCP, UDP
Media layers	3. Network	Packet	Structuring and managing a multi-node network, including addressing, routing and traffic control	AppleTalk, ICMP, IPsec, IPv4, IPv6
	2. Data link	Frame	Reliable transmission of data frames between two nodes connected by a physical layer	IEEE 802.2, L2TP, LLDP, MAC, PPP
	1. Physical	Bit	Transmission and reception of raw bit streams over a physical medium	DOCSIS, DSL, Ethernet physical layer, ISDN, USB

Wireshark

Sniff some packets

Python Webserver

Python Bottle is a micro webframework. http://bottlepy.org/docs/dev/index.html

Start with hello world tutorial http://bottlepy.org/docs/dev/tutorial.html#quickstart-hello-world

```python
from bottle import route, run

@route('/hello')
def hello():
    return "Hello World!"

run(host='localhost', port=8080, debug=True)
```

Exercises

1. Make hello world pretty.. Add html tags
2. Hello world with one parameter
3. Hello world with two parameters
4. Add a default page to the site

Templates

HTML template that can call inserted python objects:

http://bottlepy.org/docs/dev/tutorial.html#templates

Syntax for templates - http://bottlepy.org/docs/dev/stpl.html

Exercise

1. Write a webpage that when called will display a list of names. Use templates to display the list

Database Access from Webserver

Refer to tutorial http://bottlepy.org/docs/dev/tutorial_app.html

1. Create page to create db for list of names and ages
2. Create page to populate name and age
3. Create page to retrieve all display all names and ages (avg age if you can)