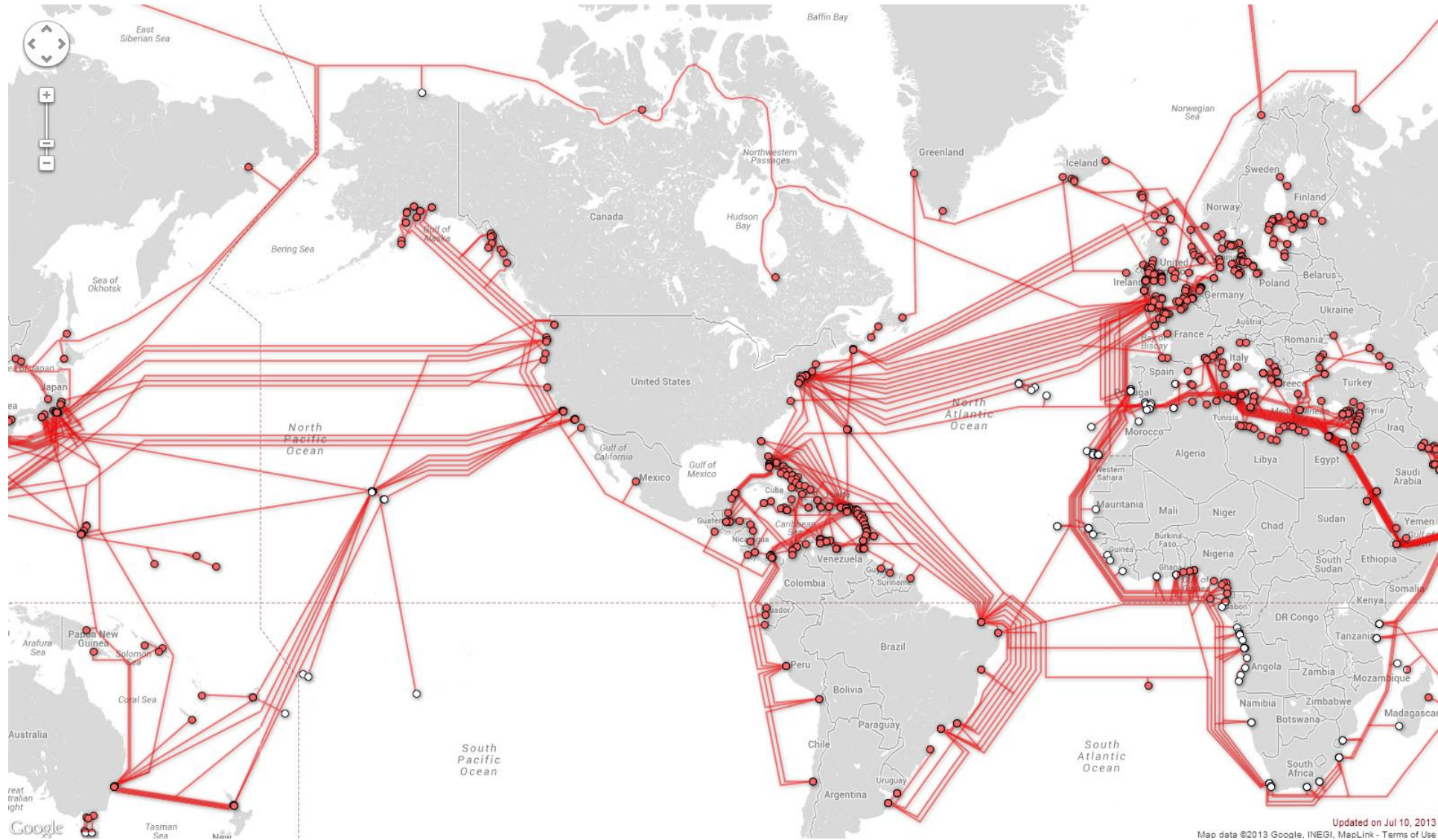# Internet Technologies

Module 3

MODULE OVERVIEW

- What is the internet?
- Clients, Servers and HTTP
- The Domain Name System
- HTTP Request Methods
- HTTP Requests and Responses
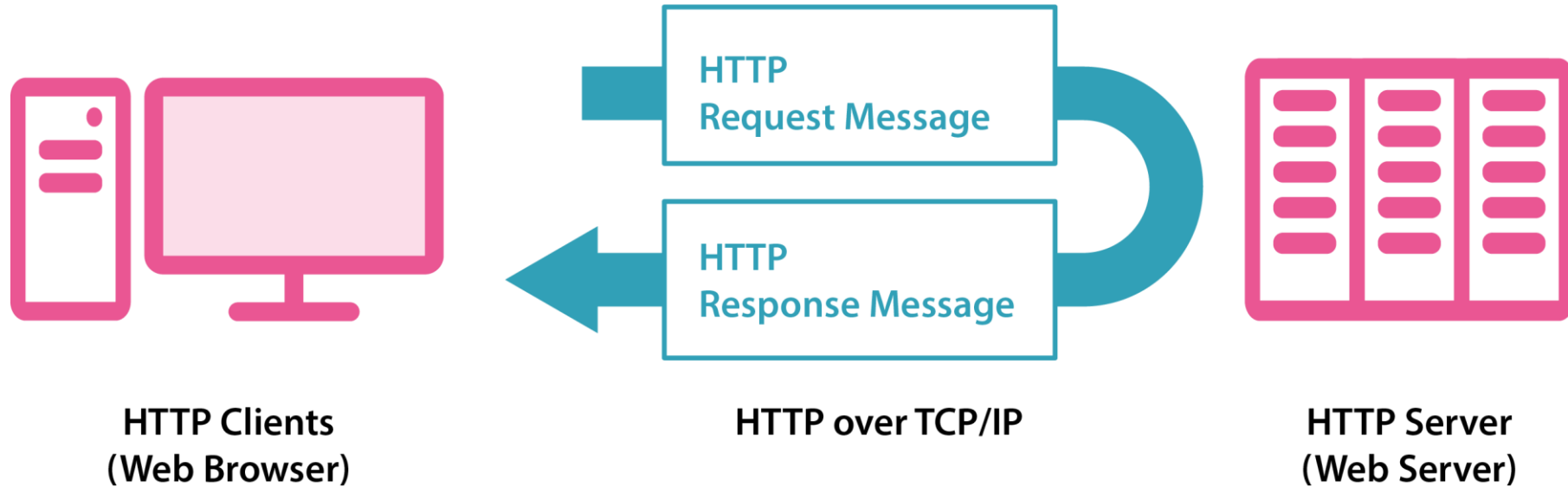- Web Architecture and Python
- Applications versus APIs

Exercise

Group research into key internet technologies
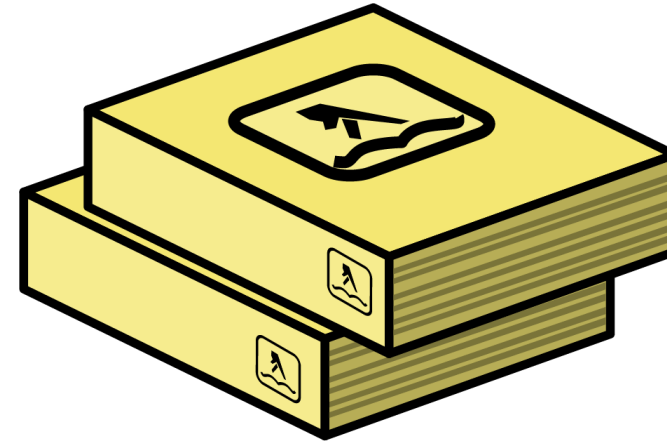
What is the Internet?

HTTP: The HyperText Transfer Protocol

HTTP Clients
(Web Browser)

HTTP over TCP/IP

HTTP Server
(Web Server)

The Domain Name System

Domain Name System

The DNS is a central part of the Internet, providing a way to match names (e.g. www.qa.com) to numbers (the address for the webserver that hosts the website). Anything connected to the Internet - laptops, tablets, mobile phones, websites - has an Internet Protocol (IP) address made up of numbers.
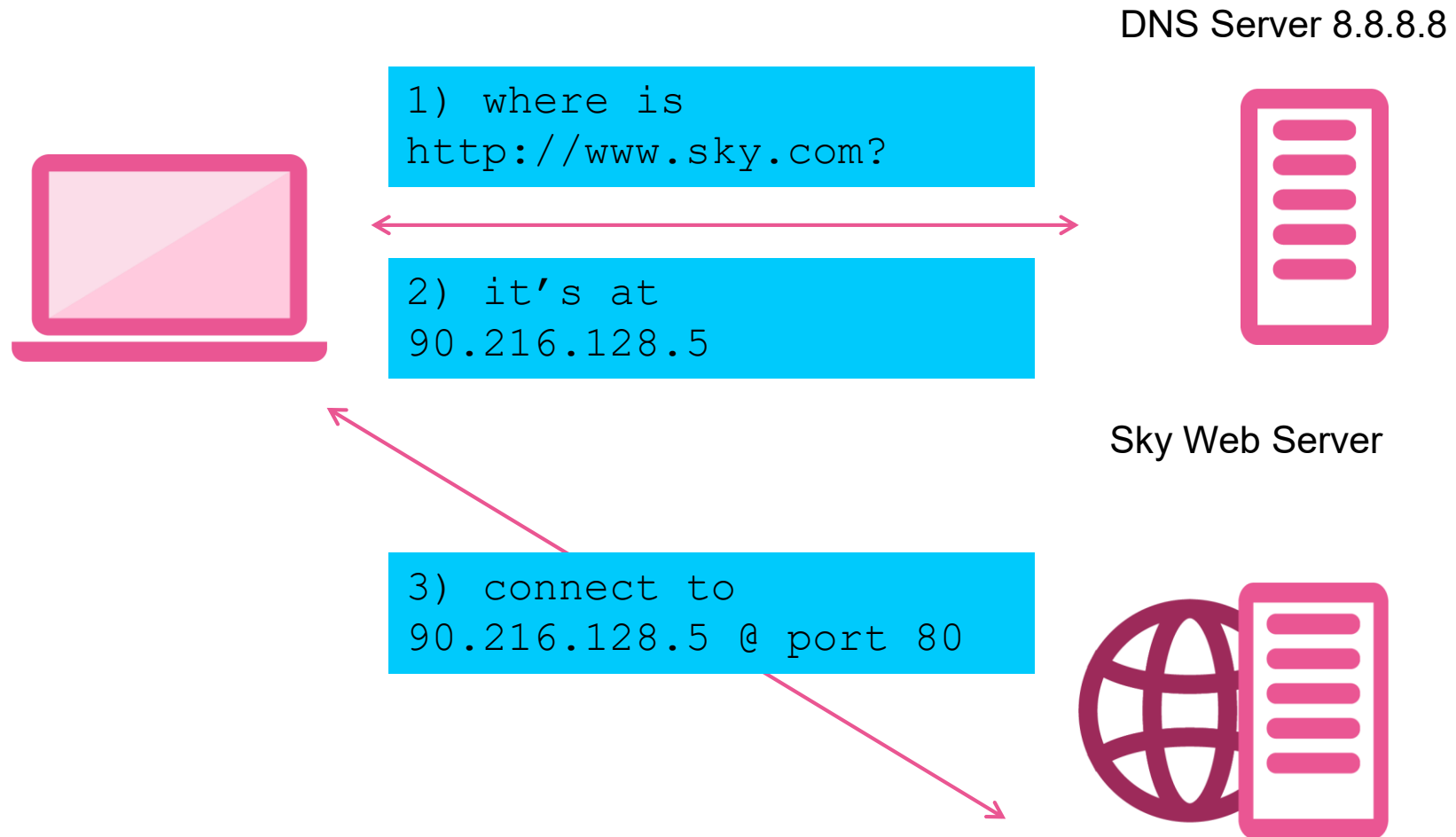
Activity: Ping

```
> ping
```

DNS in Action

1) where is
http://www.sky.com?

2) it's at
90.216.128.5

3) connect to
90.216.128.5 @ port 80

DNS Server 8.8.8.8

Sky Web Server

HTTP Request Methods

HTTP GET

Requests data from a specified resource. Any data sent with the request is visible within the URL. Do not use with sensitive data. Only use to retrieve data. The request can be cached and bookmarked and has some restrictions on data length.

HTTP POST

Submits data to be processed to a specified resource. Any data is sent in the message body not the URL. The request is never cached, cannot be bookmarked and has no restrictions on data length.

HTTP Requests and Responses

A client first connects to a server http://www.sky.com using its IP address at port 80. The browser sends this request to the server machine
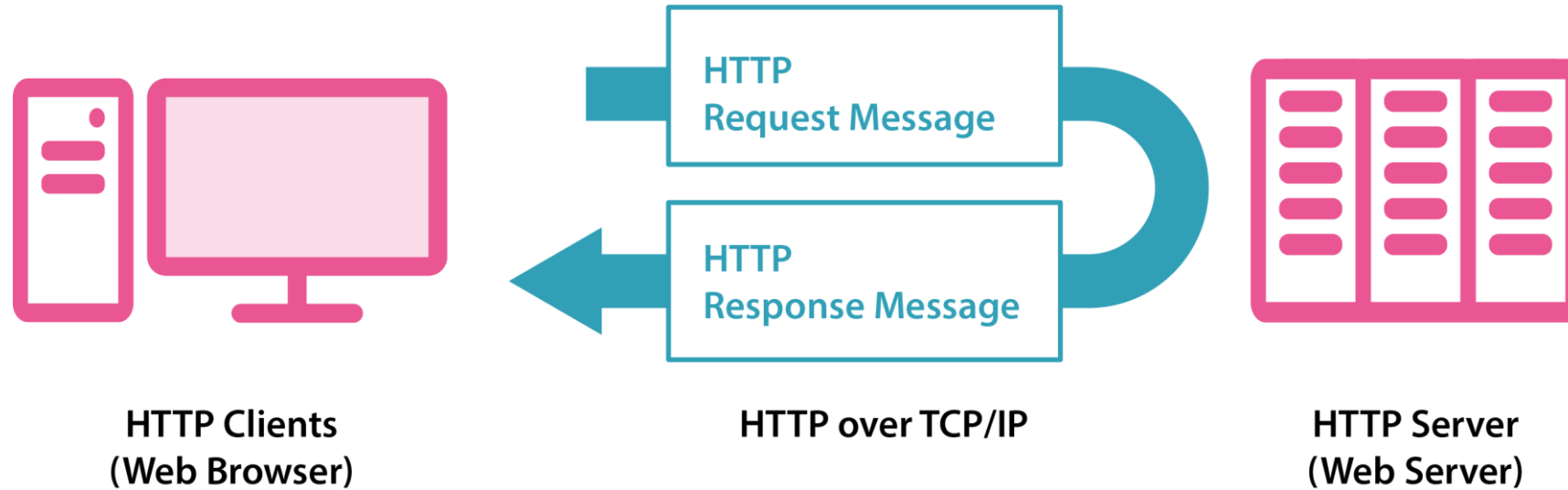
```
GET /folder/file.html HTTP/1.1
```

The web server software on this machine (Apache / IIS) parses this request and returns a response
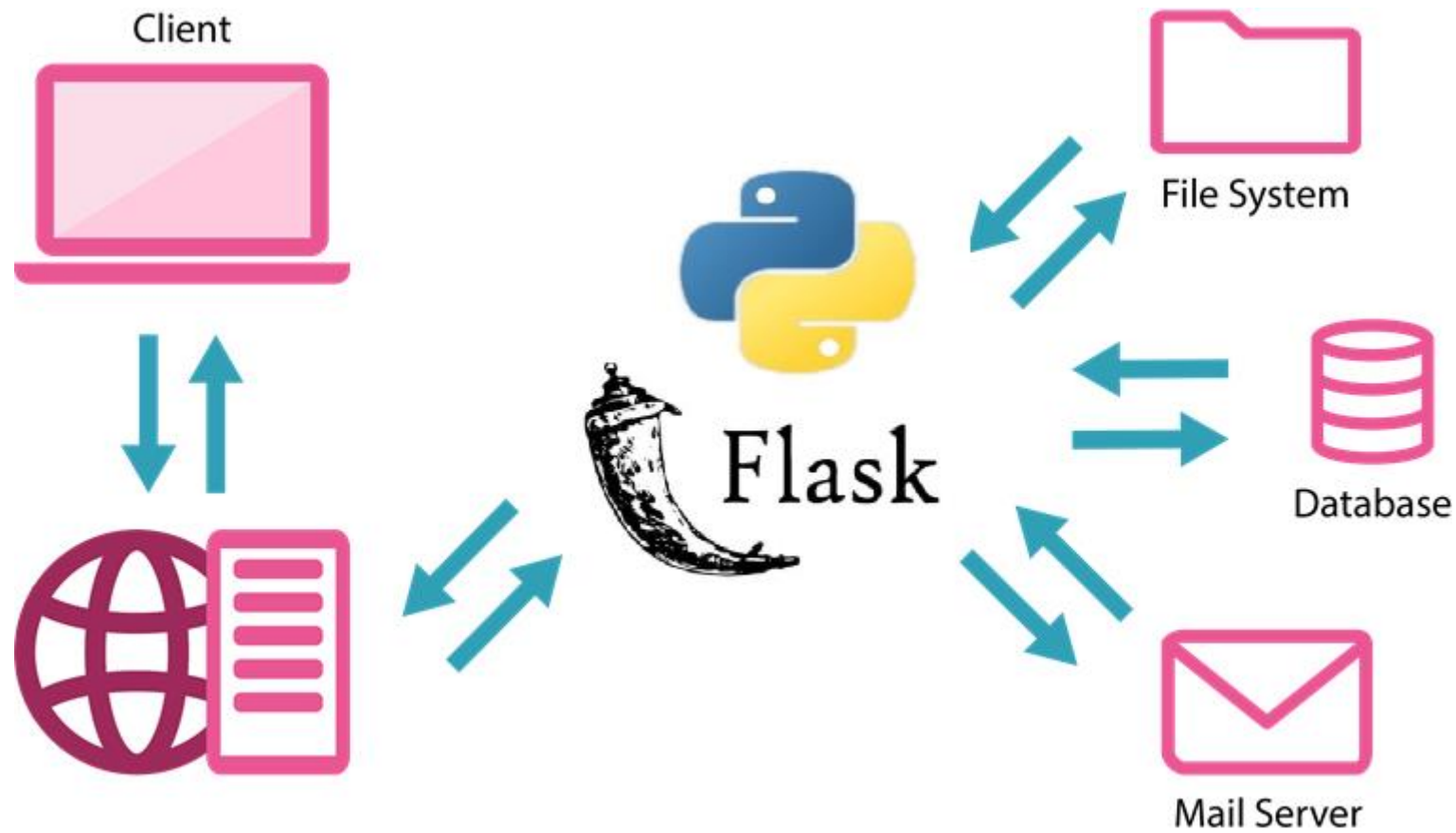
```
HTTP/1.1 200 OK
Date: Thu, 31 Mar 2016 23:59:59 GMT
Content-Type: text/html
Content-Length: 1354
<html><body><h1>The File!</h1></body></html>
```

The web browser parses this response and renders a page for you to view
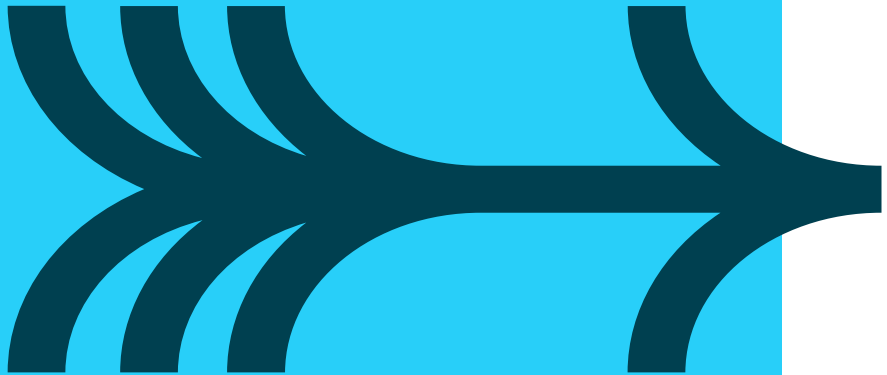
Web Clients and Web Servers

HTTP Clients
(Web Browser)

HTTP over TCP/IP

HTTP Server
(Web Server)

HTTP
Request Message

HTTP
Response Message

Web Architecture and Python

INSTRUCTOR WHITEBOARD

Applications versus APIs

Activity:
Exercise 3

Any questions?