IP-**IP** is **Internet Protocol**, which really just means that every computer (and phone and tablet) on the Internet follows a certain set of rules.

IP Address-**P address** is a unique address that identifies these devices on the Internet (well, these days we’re actually running out of addresses, but more on that in a second).

AP-  
router  
DNS- **Domain Name System**. These servers translate the URLs of websites to IP addresses, and vice versa.

TCP- **TCP**, **Transmission Control Protocol**, is another technology used on the Internet, often used together with IP (you may have seen TCP/IP).

Ports/Services-  With TCP, we have a set of conventional numbers associated with certain services:

* ports  
  21 FTP  
  25 SMTP  
  53 DNS  
  80 HTTP  
  443 HTTPS
* For example, **FTP**, file transfer protocol, was assigned a unique identifier of 21 some years ago.
* **SMTP**, for outbound email, is 25.
* **DNS** uses 53 for its queries, or questions of what the address of a website might be.
* And you may have seen that HTTP, web traffic, and HTTPS, secure web traffic, use 80 and 443.
  + The number for HTTPS can be greater than 255 because they have to do with TCP, not IP (which is 4 numbers, 0-255). A port number in TCP is a separate 16-bit integer value, so in theory can be really big, but in practice under a few thousand.

Traceroute-  We can actually see the routers that our messages go through.

HTTP-  Consider the following picture (it’s a bit dated as you can tell by the appearance of the computers):

* The client is your machine that asks for information, and the server is the machine that responds with information.

 **GET** is a term for how computers get information. They make a request in the form of a textual message that literally says something like this:

GET / HTTP/1.1

Host: www.google.com

...

* This simple message would be opened by the server on the other side, which then responds accordingly.
* The / right after GET is just asking for the root directory, or the highest directory. To properly visit a website, we should really be typing <http://www.facebook.com/> with that final / meaning we want the root of the hard drive, or the default page.
* The next part, HTTP/1.1, means that we’re using version 1.1 of HTTP to talk to the server.

SMTP-  **SMTP**, for outbound email, is 25.

HTML- Let’s also look at this bit of HTML:

1<!DOCTYPE html>

2

3<html>

4 <head>

5 <title>hello, world</title>

6 </head>

7 <body>

8 hello, world

9 </body>

**10**</html>

* It does nothing other than display hello, world, and we notice that the first line declares this piece of code as using HTML, followed by various tags beginning with < and ending with >.

 Let’s go to the appliance, or anywhere you have a text editor, and save a file titled hello.html somewhere simple, like the Desktop.