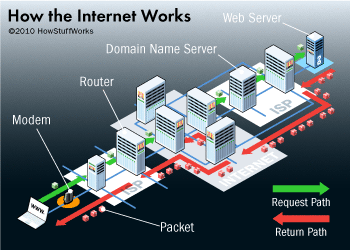
Internet Theory 1 - Internet Connections

Part of the Client Side Scripting Credit



If you did not watch the video “[The Internet: Wires, Cables & Wifi](https://www.youtube.com/watch?v=ZhEf7e4kopM&index=2&list=PLzdnOPI1iJNfMRZm5DDxco3UdsFegvuB7)” in class, watch it now.

**Part 1 - ISPs**

Go to Telus or Shaw (or search for another Edmonton ISP) and find their site for home Internet packages. Make sure you list their REGULAR price for Alberta, not the price ‘for the first three months’.

|  | Package Name | Regular Price Per Month | Download Speed | Upload Speed | One Other Feature OR Extra cost |
| --- | --- | --- | --- | --- | --- |
| Telus’ fastest package available at your home: |  |  |  |  |  |
| Shaw’s fastest |  |  |  |  |  |
| Next slowest (at either) |  |  |  |  |  |

Go to the Telus Fiber page. Is it available for your home address?

ISPs like to use ‘upload speed’ and ‘download speed’ but computer scientists prefer to measure bandwidth. “The bandwidth of a computer network is the maximum amount of data that can be sent in a fixed amount of time.” Are these two measures the same thing? Explain.

**Part 2 - Client-Server (and other types of) Networks**

Background: All communication over the Internet is based on the idea of a client-server relationship. When you save files onto your F: drive, you are also part of a client-server relationship. In the first case, you access a web server somewhere on the Internet. In the second case, you access a file server within the school.

1. Skim through [this page about the types of servers](https://www.webopedia.com/quick_ref/servers.asp).Not all of them are still being used in modern networks. Choose any 3 that you believe are still being used and paste a 1 sentence definition of each:

2. You use your smartphone to access a YouTube video which is stored on a computer somewhere on the Internet. Which device (smartphone or youtube) is the client? Which device is the server? **Don’t know the answer - this link will help:**

<http://study.com/academy/lesson/what-is-a-client-server-network-definition-advantages-disadvantages.html>

3. You use your home computer to purchase some new clothes from a website which is stored on a computer somewhere on the Internet. Which device is the client? Which device is the server?

4.aFind a picture of a home network that resembles your own home network or the school’s network. Paste it here:

b. Choose 3-5 computing devices in the image you found. Name the devices below and explain their roles in the network. (Devices could include: router, server, smart device, wifi booster, tablets, PCs, etc)

**Part 3 - Speed of the Internet**

Find and paste definitions that explain the relationship between these three concepts:

* Bandwidth
* Bitrate
* Latency

What are the units used to measure Bitrate:

What bitrate would you need to upload a 1 Gigabyte video to Youtube in 1 minute? Show your math.

At that rate, how long would it take for you to download a 10 Gigabyte movie (a 1080p movie is usually 8-15 GB)? Show your math.

It used to be common to download complete movies. Now, it is far more common to use a streaming service, such as Netflix. Search for one fact about the bitrates or files sizes regarding Netflix movies and explain it in one sentence. Any related numbers/facts will work.