

The Internet

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Reminders

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Things that are due tomorrow:

- Homework 12
- Game of Life
- Participation 13p1
- Post-reading 13p1

Why we care

Where Data Comes From

- 1 Started with the data being hard-coded
- 2 Then we got data from the user: `input()`

Where Data Comes From

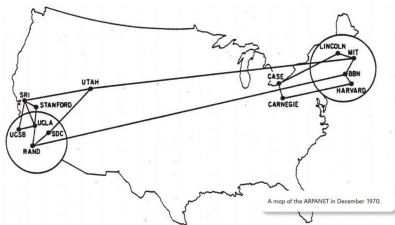
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- 3 Then we got it from files: `open(filepath).`

Where Data Comes From

- ❶ Started with the data being hard-coded
- ❷ Then we got data from the user: `input()`
- ❸ Then we got it from files: `open(filepath)`.
- ❹ Now, we can get it from the internet. The world's biggest file collection.
 - Recall, websites are just collections of files hosted on a computer.

History of the Internet

ARPANET



- Only a few users at government research facilities and universities
- Used for file transfer, not websites
- File Transfer Protocol (FTP, 1971) is still available and used today.
- Example:

Tim Berners-Lee and the Internet

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 - Link: First proposed by Vannevar Bush in "As we may think".
 - Proposed a hypothetical machine that could let a user jump to different locations across multiple documents. Sound familiar?
 - A browser, which could read and render the files.

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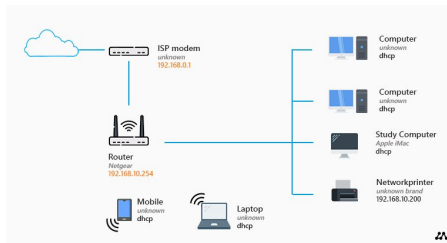
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 - A browser, which could read and render the files.
 - A set of rules (protocol), for transferring these files (HTTP).
- Recall, websites are just collections of files on another person's computer (server):

```
1 dev_website
2 |——index.html
3 |---elements
4 |   |—— about.html
5 |   |—— cv.html
6 |   |--- projects.html
```



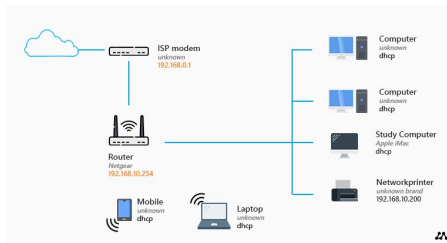
Internet Usage

Networks

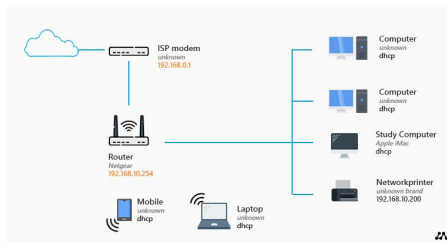


Networks

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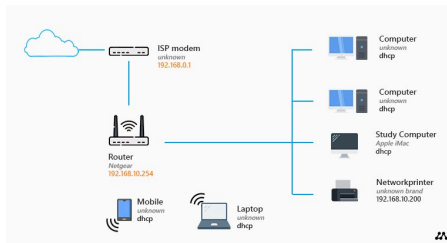


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- Router → Route data/traffic between networks.
- Modem → (1) Stands for "modulation-demodulation" (2) Converts between analog (waves) and digital (10101011101).

The early internet

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 - These still exist and can be accessed using the "teletype network" (telnet) protocol.
 - Telnet Example: Telnet Star Wars

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- Internet Relay Chat (IRC) → An early instant messaging system that allowed someone to use a IRC client program to connect to a server and chat.

IP Addresses, Domain Names, and URLs

IP Addresses

Domain Names

URLS

HTTP Protocol

Reading data from the internet

```
1 import requests
2
3 response = requests.get("https://www.google.com")
4
```

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- Ⓑ requests module: Given a URL, returns the document at that URL

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Lets try this on PrairieLearn :D