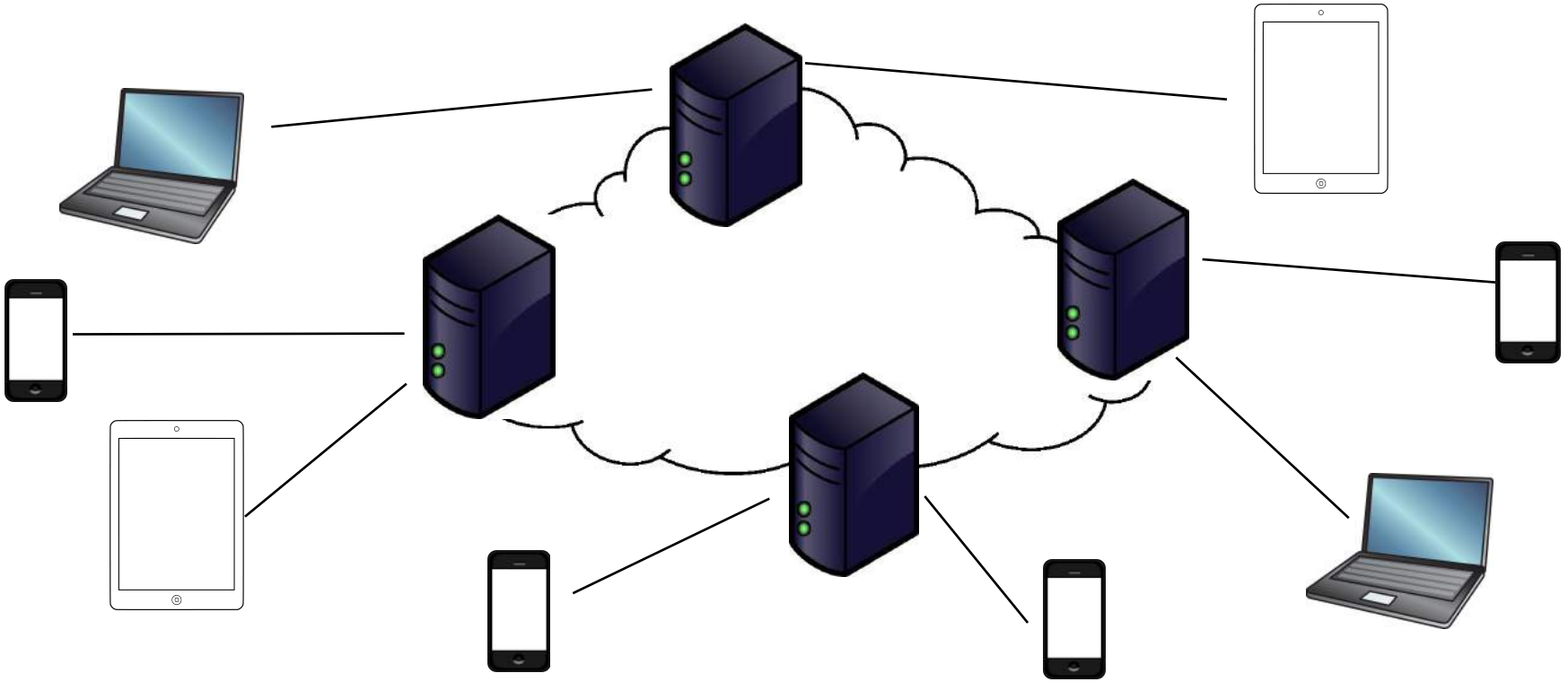
Video 1.1
Chris Murphy

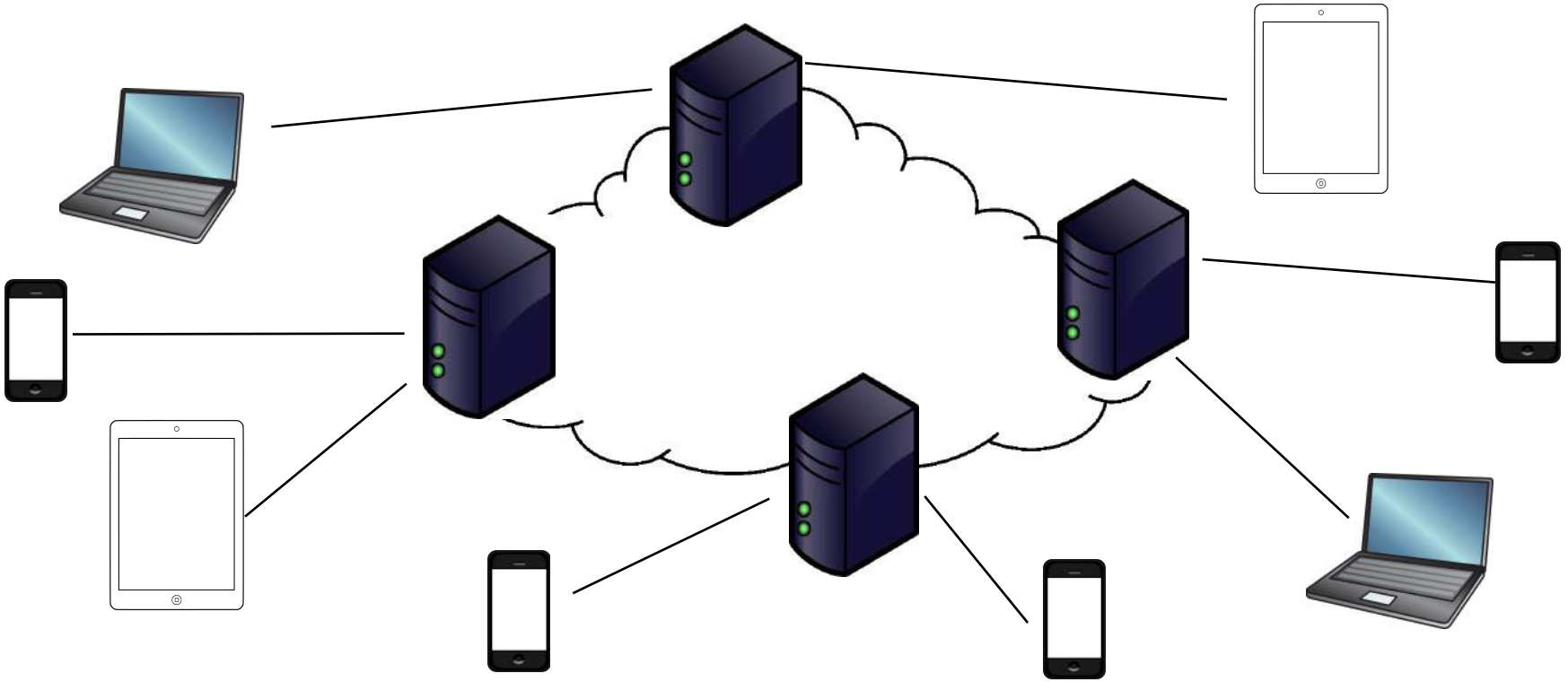
What is the Internet?

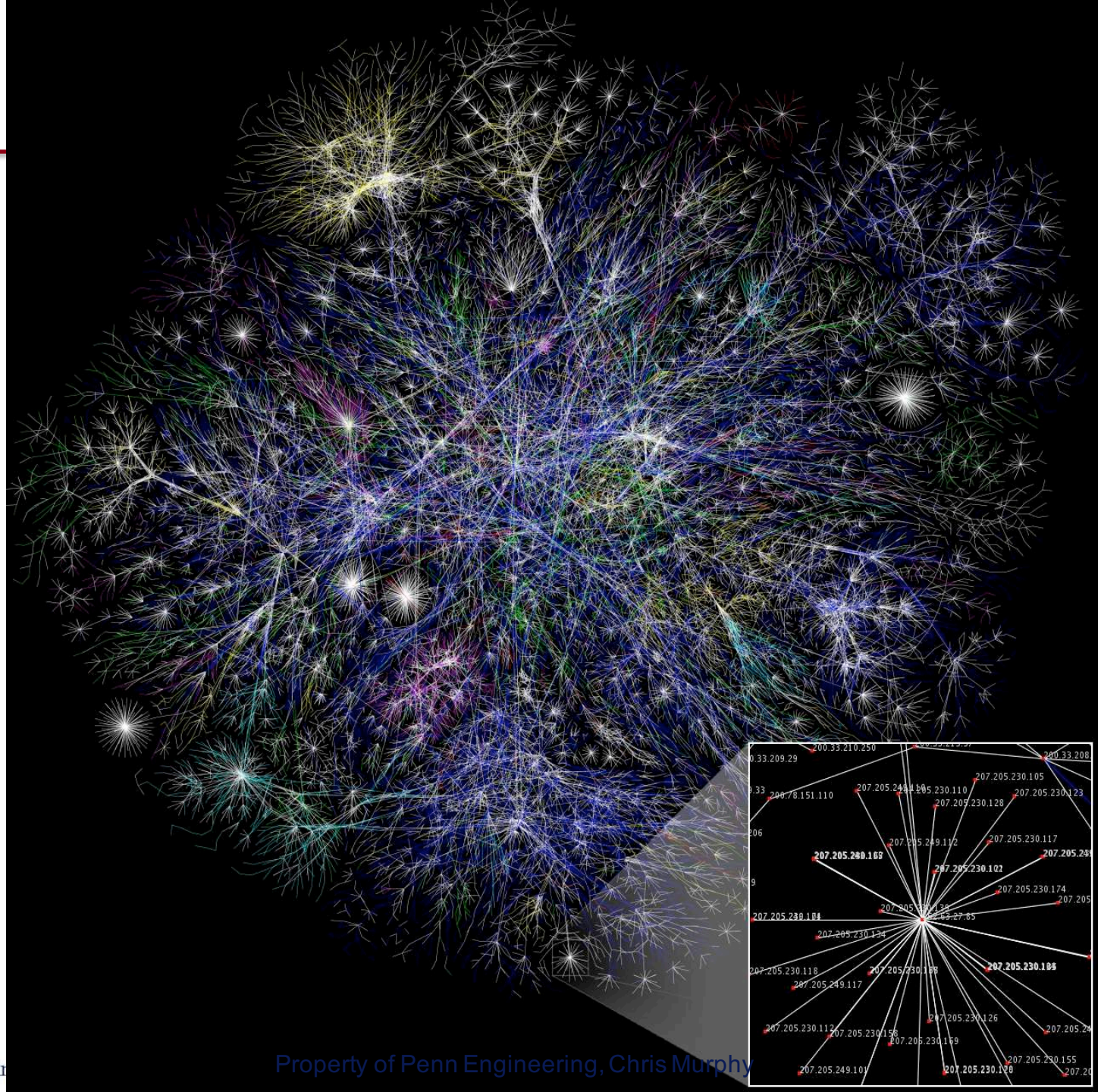
- **Internet** – network of machines (servers, clients, routers, switches, etc.) connected by media (fiber, wifi, etc.) that allows communication among devices



The Internet

- We can think of the Internet as a graph:
  - Nodes represent devices and information
  - Edges represent a connection (physical or virtual)

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207.205.230.167
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207.205.230.112
207.205.230.156
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World Wide Web == Internet?

- **No!** They're not the same!

- The World Wide Web is an **application** that operates **over the Internet**
  - Internet provides infrastructure
  - World Wide Web utilizes the infrastructure to run an application on which users connect and exchange data

- Other applications use the Internet as well, e.g email

What is the World Wide Web?

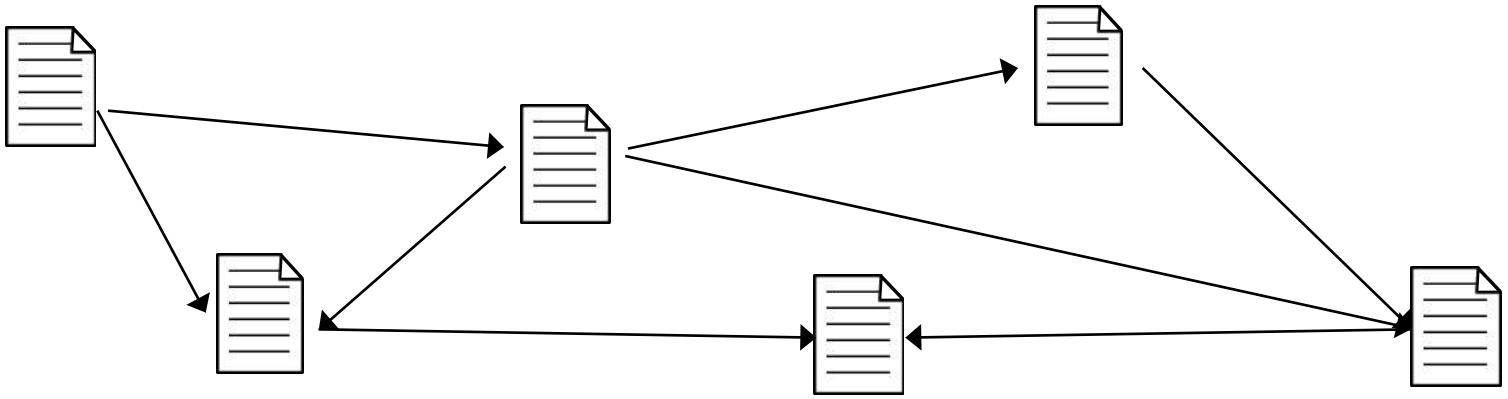
- **World Wide Web (WWW)** – an application on the Internet that combines many protocols to allow for communication and transfer of data between machines

- Web is composed of documents that are logically **linked** to each other

- Originally designed to:
  - Provide easy access to documents for anyone
  - Provide way in which users can discover documents through a **browser**

The World Wide Web

- Web follows similar network structure as the Internet
- Web pages link to other web pages, thus forming a graph where:
  - Nodes represent an individual document/resource
  - Edges represent a link from one document/resource to another (directed edges)



Web Page Addresses

- **Uniform Resource Identifier (URI)** – alphanumeric string of characters used to uniquely identify a web page or resource

- **Uniform Resource Locator (URL):** type of URI that specifies the location on the WWW and the mechanism (protocol) for retrieving it

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Protocol **Host Name**

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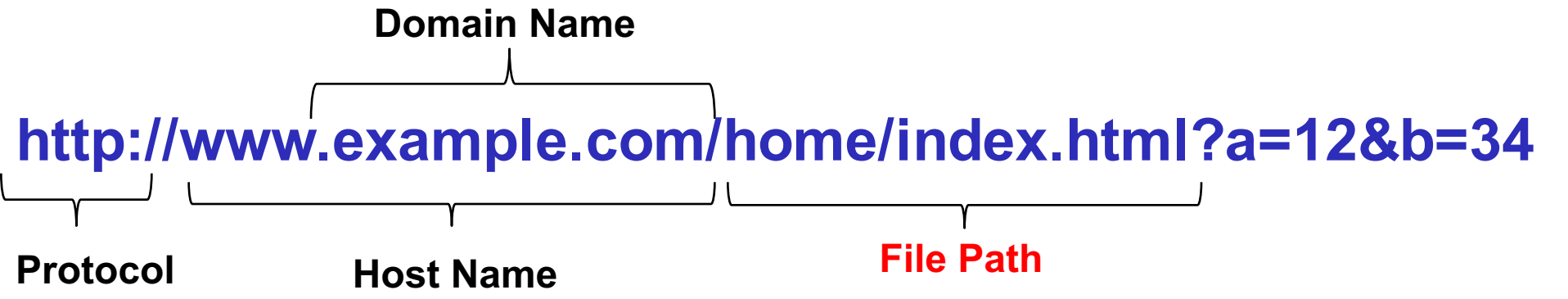

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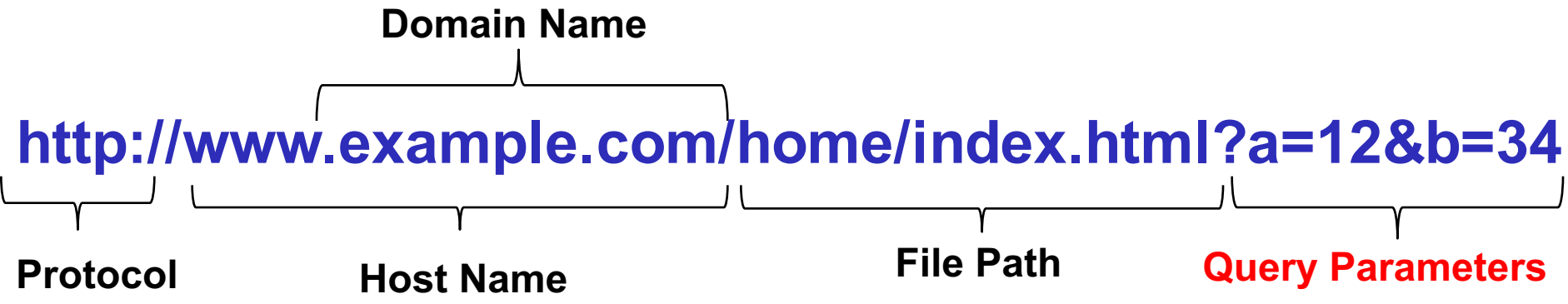

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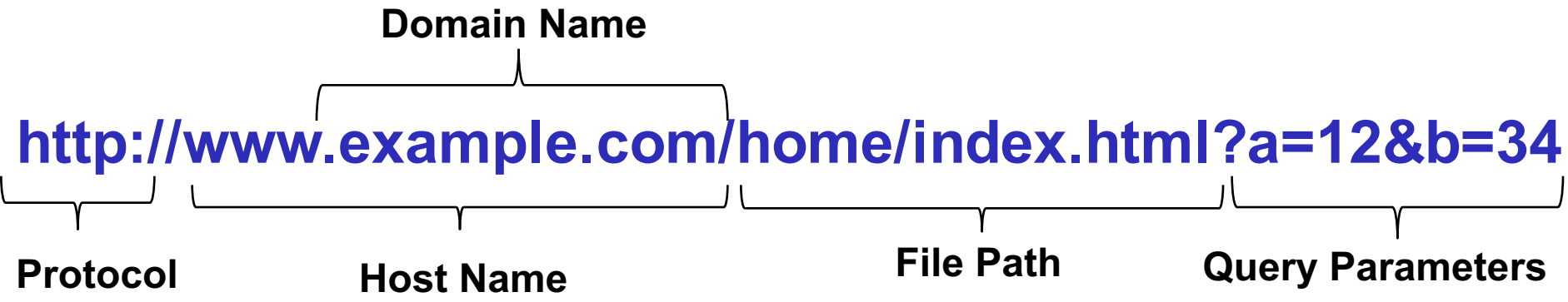

Content on the World Wide Web

- **Static:** same for all users and at all times
  - Appearance may vary based on specific browser, but content itself is the same
  - Technologies: HTML, CSS
- **Dynamic:** programmatically generated depending on the user, context, configuration, arguments, etc.
  - Technologies: JavaScript

Looking Ahead

- How does a browser request a web page or resource?
  - what does it send?
  - what does it receive?
- Once the content is received, how does a browser display it?
- Later: how can you write programs to generate dynamic content in the browser?