

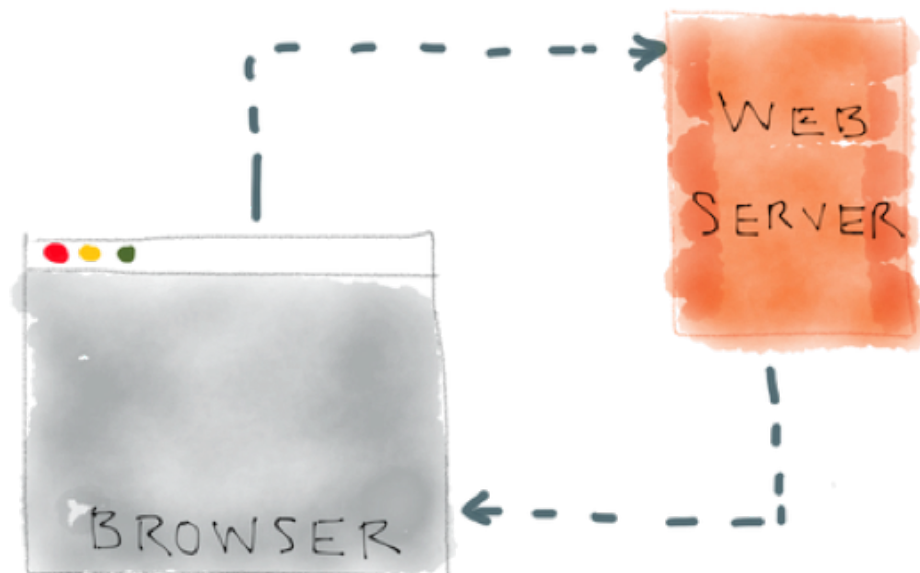
# Web Apps Basics

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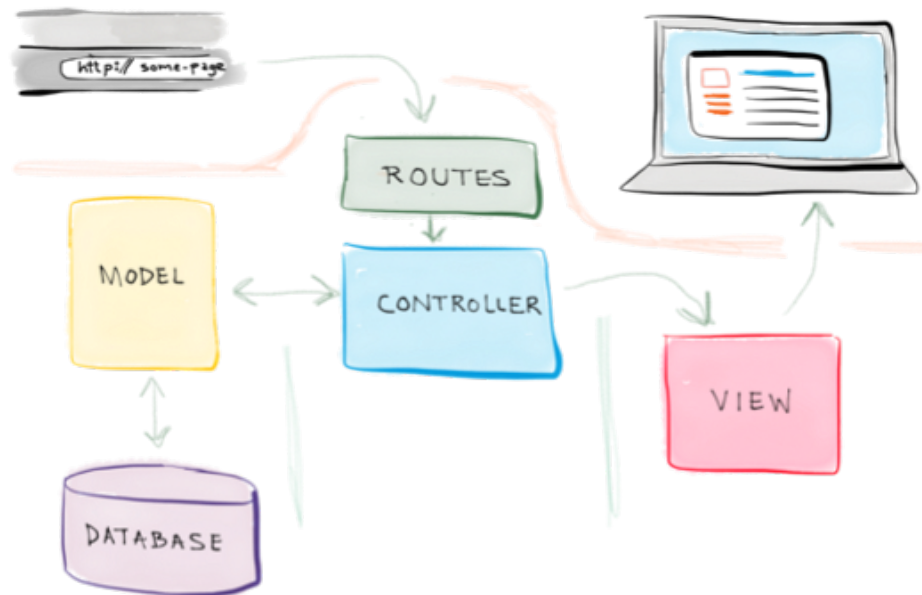
# Client-side vs. Server-side Programming

- Client-side programming: technologies are used to build web pages and applications that are run on the client (i.e., in the browser on the user's device).
- Server-side programming: the applications that respond to requests from client-side web applications.



# Model-View-Controller (MVC) in Web Apps

1. A user requests to view a page by entering a URL in a browser.
2. The Controller receives that request and asks..
3. The Model to retrieve all necessary data and send them back to the controller, which passes the data to...
4. The View, which uses that data to render the final webpage presented to the the user in the browser



# WWW, HTML, and HTTP

- 1989, Sir **Tim Berners-Lee** of CERN (the European Organization for Nuclear Research) began to develop a technology for sharing information via hyperlinked text documents.
- Berners-Lee called his invention the **HyperText Markup Language** (HTML). He also wrote communication protocols to form the backbone of his new information system, which he called theWorld Wide Web.
- In particular, he wrote the **Hypertext Transfer Protocol** (HTTP)—a communications protocol used to send information over the web.
- The URL (Uniform Resource Locator) specifies the address (i.e., location) of the web page displayed in the browser window. Each web page on the Internet is associated with a unique URL. URLs usually begin with http://.

# HTTPS

- Netscape Communications created HTTPS in 1994.
- URLs of websites that handle private information, such as credit card numbers, often begin with `https://`, the abbreviation for Hypertext Transfer Protocol Secure (HTTPS).
- HTTPS is the standard for transferring encrypted data on the web. It combines HTTP with the Secure Sockets Layer (SSL) and the more recent Transport Layer Security (TLS) cryptographic schemes for securing communications and identification information over the web.

# Domain Name

- See this URL: <http://lerner.udel.edu/>
- <http://lerner.udel.edu> is the server's fully qualified domain name - the name of the web-server computer on which the resource resides, also referred to as the host.
- The domain name <http://lerner.udel.edu> is translated into an IP (Internet Protocol) address.
- An Internet Domain Name System (DNS) server maintains a database of hostnames and their corresponding IP addresses and performs the translations automatically.

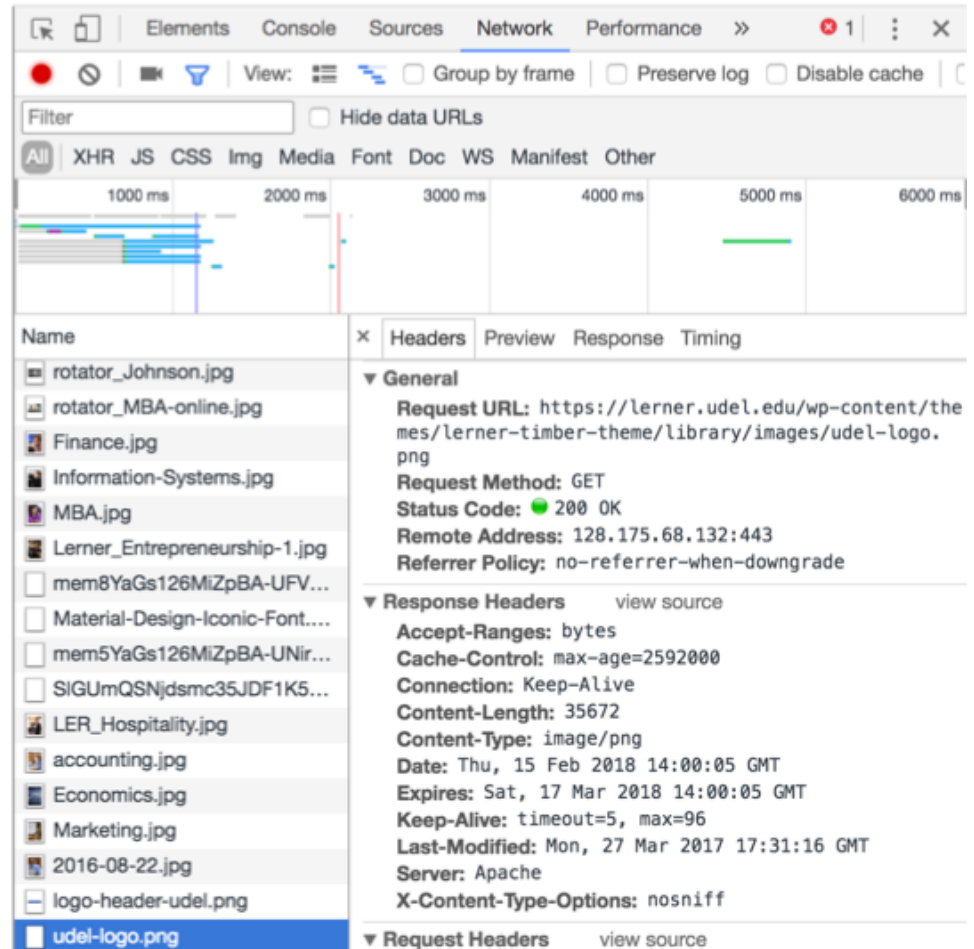
# Chrome Developer Tools (DevTools)

- <https://developer.chrome.com/devtools>
- DevTools are a set of web authoring and debugging tools built into Google Chrome.
- The DevTools provide web developers deep access into the internals of the browser and their web application.
- To access the DevTools, open a web page or web app in Google Chrome then try one of the followings
  - Select the Chrome menu Chrome Menu at the top-right of your browser window, then select Tools > Developer Tools.
  - Right-click on any page element and select Inspect Element.

# GET Request

<http://lerner.udel.edu/> in Chrome

- From the client computer, the web browser sends an HTTP request to the server to retrieve some resources, which is called a GET method.
- A GET request also provides the path name of the resource.
- A numeric code is returned by the server to indicate the status of the request, e.g., 200 OK indicates success, 404 indicates Not found





# POST Request

- A POST request sends form data as part of the HTTP message.

**CONTACT ME**  
— ★ —

Name  
\_\_\_\_\_  
Email Address  
\_\_\_\_\_  
Message  
\_\_\_\_\_  
\_\_\_\_\_

× Headers Preview Response Cookies Timing

▼ General

**Request URL:** https://formspring.io/your@email.com

**Request Method:** POST

**Status Code:** ● 200

**Remote Address:** [2400:cb00:2048:1::6819:a424]:443

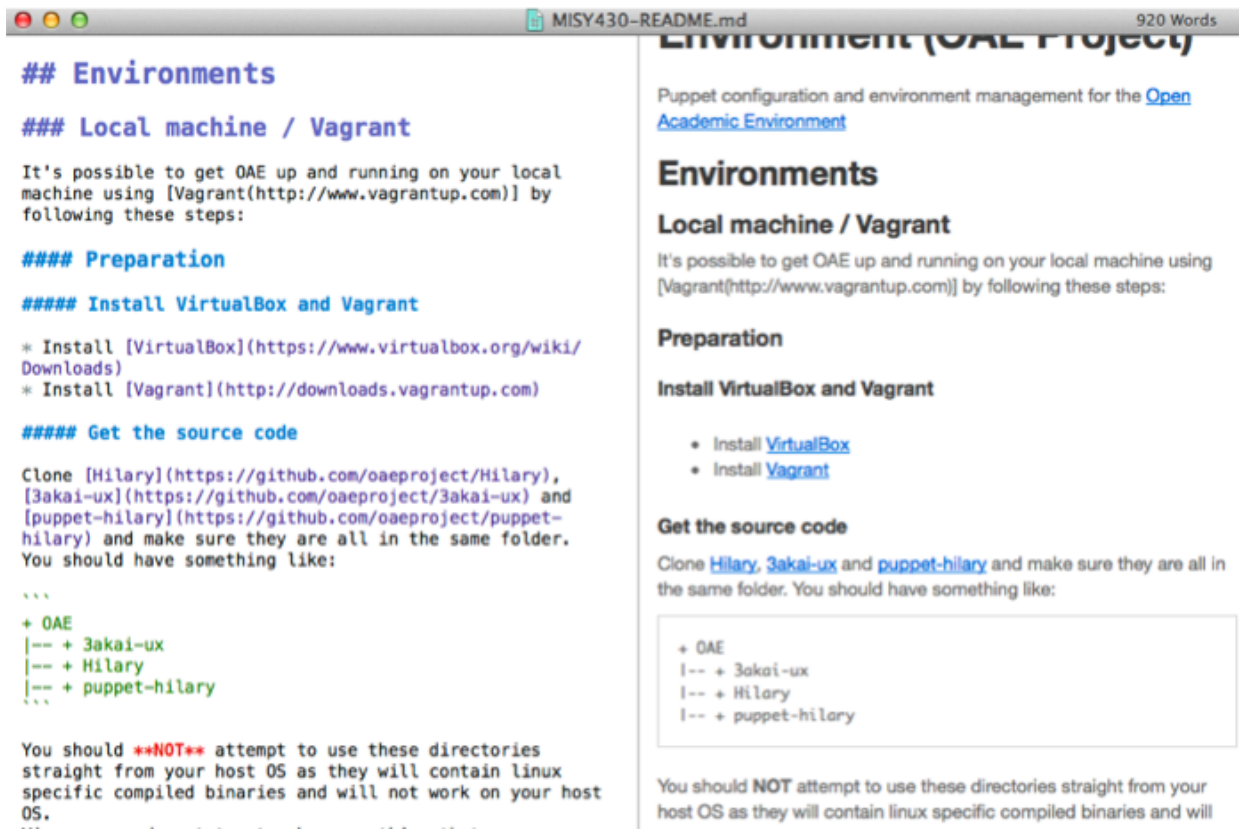
**Referrer Policy:** no-referrer-when-downgrade

▼ Form Data    view source    view URL encoded

**name:** Harry Wang  
**\_replyto:** hjwang@udel.edu  
**message:** Hello

# Markdown

- Markdown is a lightweight markup language for HTML
- Used by many sites including Github to create messages, issues, comments, etc. (learn more at <https://guides.github.com/features/mastering-markdown> )



The image displays a side-by-side comparison of a README file, showing both the raw Markdown source on the left and the rendered HTML output on the right. The window title is 'MISY430-README.md' with a word count of '920 Words'.

**Raw Markdown (Left):**

```
## Environments

### Local machine / Vagrant

It's possible to get OAE up and running on your local machine using [Vagrant](http://www.vagrantup.com)] by following these steps:

#### Preparation

##### Install VirtualBox and Vagrant

* Install [VirtualBox](https://www.virtualbox.org/wiki/Downloads)
* Install [Vagrant](http://downloads.vagrantup.com)

##### Get the source code

Clone [Hilary](https://github.com/oaeproject/Hilary), [3akai-ux](https://github.com/oaeproject/3akai-ux) and [puppet-hilary](https://github.com/oaeproject/puppet-hilary) and make sure they are all in the same folder. You should have something like:

```
+ OAE
|-- + 3akai-ux
|-- + Hilary
|-- + puppet-hilary
```

You should **NOT** attempt to use these directories straight from your host OS as they will contain linux specific compiled binaries and will not work on your host OS.
```

**Rendered HTML (Right):**

Environment (OAE Project)

Puppet configuration and environment management for the [Open Academic Environment](#)

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# Atom Emmet Package

- <https://emmet.io>
- Emmet is a plugin for many popular text editors which greatly improves HTML&CSS workflow
- Atom Menu → Preferences → Packages

