Lesson Number 1

Name:

Introduction to Server Side Programming

Description:

Who am I? — 00:00
Quick insight into the history of Shaun.

- Programming since 2016
- Started with PHP
- Learned PHP by building a catalogue website for Sun City RV
- Built a few more sites, than gave it up to pursue a career in low voltage installations
- In 2010 had a nasty accident, so returned to school to reskill
- Built a few sites while studying. Started with WordPress, finished with PHP Laravel
- In 2013 graduated with honours in the Web Program at Georgian
- Learned Ruby and Rails in 2014 (favourite language and framework so far)
- Worked for GShift and freelanced for 2 years
- In late 2015, I left GShift to teach at Georgian
- Taught Introduction to Programming, then Bitmap & Vector

Introducing You — 00:15
An exercise to briefly introduce each student.

1. What is your name?
2. Where are you from?
3. Have you programmed with PHP before?

Class by Class Structure — 00:30
An overview of the flow of a typical class.

Introduction to Class Tools — 00:45
FTP, IDE, Documentation, Text Book, MySQL Workbench

Break - 01:00 |

Introducing Client/Server Architecture — 01:15
A brief introduction to web app architecture.

Explanation

Servers

- they share resources such as files, printers, websites, databases, and email to clients
- servers can operate on every operating system
- some of the most common web servers are Apache VS Nginx
    - Apache
    - Nginx
    - IIS
- a web server shares websites to a client's web browser

Clients

- clients allow users to interact with server content
- clients recieve and output/mutate the information from the server
- common clients are
    - email applications
    - web browsers
    - online/multiplayer games
    - cloud based applications
    - database applications
    - home media interfaces

Networks

- a network is a communication system that allows servers and clients to communicate with one another
- routing is a process in which information is transferred from one computer to another
- a router is a device that connects to two or more networks and handles the flow of information

Local Area Network

- LAN stands for Local Area Network
- a LAN is a small network of computers usually within the same building
- LAN is also sometimes known as an intranet
- LANs will sometimes host local web applications that are accessible by LAN connected users only

Wide Area Networks

- WAN stands for Wide Area Network
- a WAN consists of multiple LANs connected together through routers

Internet Service Provider

- ISP stands for Internet Service Provider
- An ISP is a company that owns a WAN that is connected to the internet
- An ISP leases access to its network giving user access to the internet

The Internet

- the internet is a global network consisting of multiple WANs that have been connected together
- Internet Exchange Points (IXP) connect ISP's WANs together providing the ability to exchange information with anyone connected IT Crowd (Jen and the Internet) 3:00

Anatomy of a Static Web Page — 01:30
Review of HTML and CSS

How Static Web Pages are Processed

1. User requests a web page in their web browser (either by typing a link in the address bar or by clicking a link)
2. A request is built by the web browser and sent to the web server
   NOTE: this request is known as an HTTP Request
3. The HTTP Request contains the following information Anatomy of an HTTP Request
   1. The request type (GET, POST, PUT, DELETE, HEAD, TRACE, CONNECT) Request Types
   2. The file being requested (/index.html, directory/index.php)
   3. The HTTP version being used (HTTP/1.1)
   4. The host address that has the file we're requesting (www.example.com)
4. When the hosting server receives the request, it checks the requested file's extension to establish which program or server should process the request
5. Once the request has been processed it the host server returns the requested file as an HTTP Response
6. The HTTP Response contains the following information:
   1. The HTTP Response Status (HTTP/1.1 200 OK) HTTP Response Codes
   2. The Content Type (MIME type - Multipurpose Internet Mail Extensions) (text/html, application/x-doom, image/png) MIME Types
   3. Content-Length
   4. Server (Apache, Nginx, IIS)
   5. The actual content
7. This request and response process relies on two protocols
   1. HTTP - HyperText Transfer Protocol
      a protocol that web browsers and servers use to communicate. It sets the specificatons for HTTP requests and responses
   2. TCP/IP - Transmission Control Protocol/Internet Protocol
      a suite of protocols that let two computers communicate over a network

Anatomy of a Dynamic Web Page — 01:45
Introducing PHP at a glance

How Dynamic Web Pages are Processed

1. User requests a web page in their web browser (either by typing a link in the address bar or by clicking a link)
2. A request is built by the web browser and sent to the web server
3. When the hosting server receives the request, it checks the requested file's extension to establish which program or server should process the request
4. A dynamic web page will use script in order to generate a web page with data from a script, database, API, file, or another source
5. Once the request has been processed it the host server returns the requested file as an HTTP Response

Break - 02:00 |

Basic PHP — 02:15
Looking at basic programming concepts with PHP syntax