

What is a Full Stack ?

- Able to work on front-end and back-end portions of an application.
- **Front-end:** Portion of an application the user will see or interact with
- **Back-end:** Part of an application that handles the logic, database interactions, user authentication, server configuration, etc.
- **Database:** Structured set of data held in a computer, more organized and complex sometimes.

Full Stack Developer

I define the basic stack as follows:

- HTML
- CSS
- JavaScript
- One general-purpose programming language (Ruby, Python, PHP, etc)
- One relational database system (Postgres, MySQL, Oracle, etc)
- One web server (nginx, Apache, etc)
- One deployment operating system (Ubuntu, CentOS, FreeBSD, etc)
- One version-control system (git. don't bother with the etc)

Keys for Full Stack

FRONT END

HTML

HTML5

Java Script

J Query

CSS3

BACKEND

Ruby on Rails

PHP

Angular2

Node.js

.Net

DATABASE

MySQL

MongoDB

CouchDB

MS SQL

VERSION CONTROL

GIT

Grunt

Xdebug

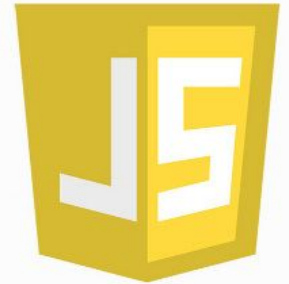
Subversion

HTML/ CSS

- HTML: HyperText Markup Language
- CSS: Cascading Style Sheets
- Basically called as “building blocks of the web”
- HTML - Allows you to add content to the website
- CSS - Allows you to style your content
- Bootstrap: a framework for helping design and layout content on a page



JavaScript



- JavaScript: Most popular language in Full-Stack, Front-end, and Back-end Development.
- Only language that runs natively in the browser, and can double up as a server-side language as well.
- It's a high-level programming language
- It's a language that is also characterized as dynamic, weakly typed, prototype-based and multi-paradigm.
- Frameworks: Angular & React
- JSON: JavaScript Object Notation

Back-end Language

- Will handle stuff like database operations, user authentication, and application logic.
- **Node.js**: framework that will aid you in developing web application is Express. 
- **Ruby**: frameworks for developing in Ruby are Rails and Sinatra. 
- **Python**: frameworks for developing in Python are Django and Flask. 
- **Java**: frameworks for developing in Java are Spring MVC, Struts, Hibernate, JSF, Vaadin, etc. 
- **PHP**: frameworks for developing in PHP are Symfony, Lavarel, Zend, CakePHP, Phalcon, Drupal, etc. 

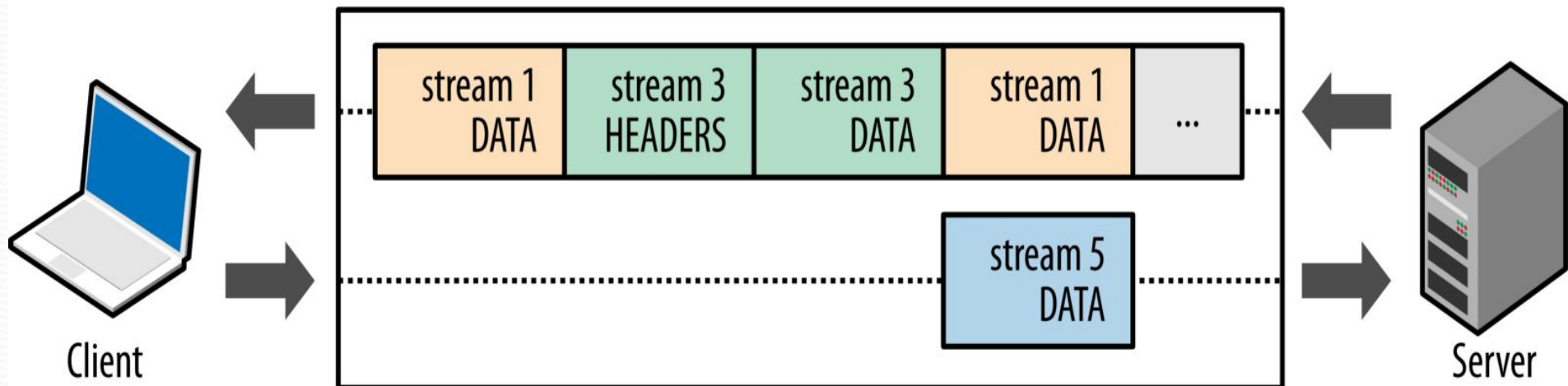
Databases & Web Storage

- Relational Databases like SQL Server, MySQL, Oracle.
- NoSQL databases like MongoDB, Cassandra.
- Connection between a database with a chosen back-end language (e.g. Node.js + MongoDB)
- In-memory data stores like Redis, memcached, etc.
- Web storage to store sessions, cookies, and cached data in the browser.
- Scaling database like ACID and ORM.

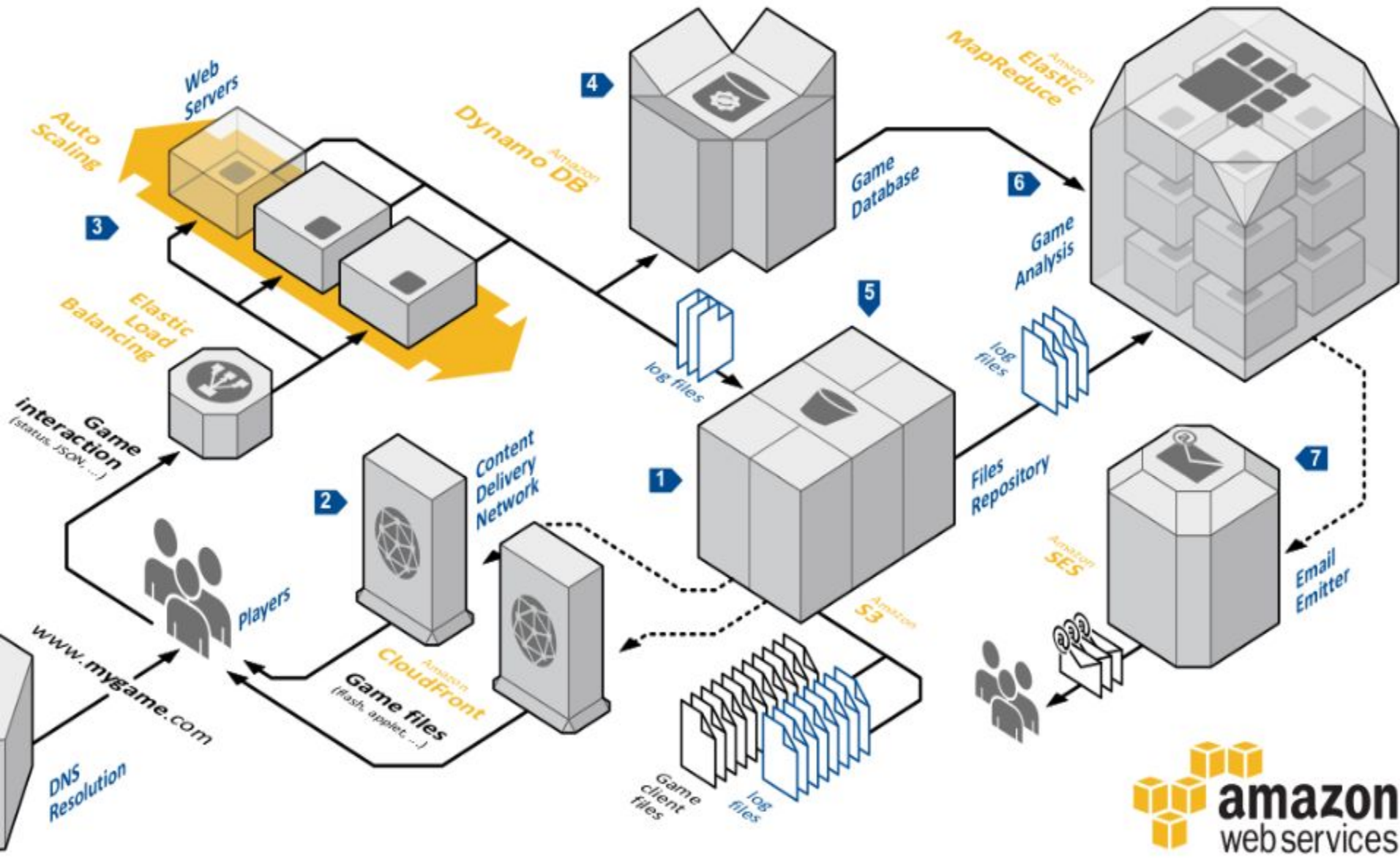
HTTP & REST

- HTTP: HyperText Transfer Protocol
 - Application protocol on the internet
 - Allows clients to communicate with servers
 - For ex: JS code can make AJAX req on back-end happens via HTML
- RESTful or SOAP API's

HTTP 2.0 connection



Web App Architecture



Web App Architecture ...contd

- A framework that is comprised of the relationships and interactions between application components, such as **middleware systems**, user interfaces, and databases.
- A web application or web app is a client-server computer program which the client (including the user interface and client-side logic) **runs** in a web browser.
- **Common** web applications include webmail, online retail sales, and online auction.