Front End Technologies - Day 1

Agenda

- **Why Full stack web development?**
- **Introduction**
- **Layers of web application**
- **HTML**

Why Full Stack Web Development?

As we all are living in the era of emerging digital world, it is very important for each and every business to have its digital presence. As all information and all the needs are rights on the tip of our fingers.

As the great philanthropist, co-founder of Microsoft Corp Bill Gates said "**If your business is not on internet, then your business will be out of business**". And to have the digital presence we need to have an application, website or software.

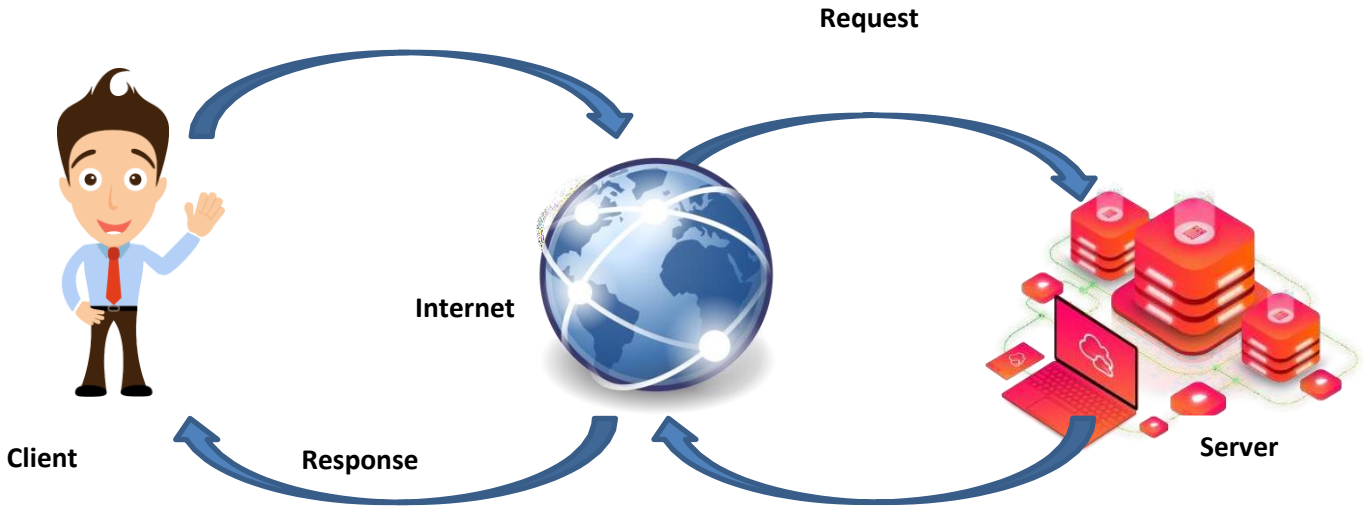
Traditionally, web and application development processes have included teams of back-end, front-end, and database specialists, who collaborated on complex technologies to deliver the end product. But today, the trend is dramatically shifting in favour of multi-faceted professionals or the jacks of all trades who fit into many roles. Thanks to this, the demand for Full Stack developers has never been higher.

Introduction

So what full stack developer skills one needs to acquire to succeed? Because versatility is their forte, a full stack developer is expected to have in-depth expertise on everything related to web and app development. This includes user front-end(interface creation), back-end(coding), and database.

Let us first understand what is a web application? Application isanother name for your software which is collection of programs. How is web application different from your mobile/computer application? To use certain application or software we have to first install it in our system. Only then we can use it whether it is any game or MS Office or any other software. But this is not the case with web application.A **web application** (or **web app**) is **application** software that runs on a **web** server, unlike computer-based software programs that are run locally on the operating system (OS) of the device. **Web applications** are accessed by the user through a **web** browser with an active **internet** connection.

To access the particular web application, we need to send the request to the server via the internet and the server will execute the request and send back the response in form of an application to you via internet.



Layers of web application

Let us get to know about the three main layers of web application by considering an example of mobile website

Front-end

1. Our expectation is to see all the mobiles with their photo, name and additional information. To arrange the data in certain way, we have to use a markup language that describes thestructure of the web page. Here we shall beusing the standard markup language that is **HTML (Hyper Text Markup Language)** toperform this task.

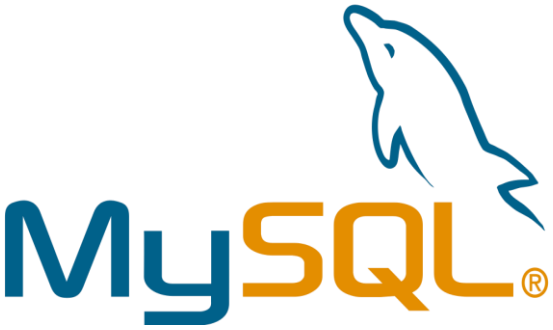
2. This particular data has to be displayed in certain format and design, for that we have **CSS (Cascading Style Sheets)** that describes how HTML elements are to be displayed on screen, paper, or in other media CSS saves a lot of work. It can controlthe layout of multiple web pages all at once.

3. We see certain websites have some pop-ups that try to interact with us and give some deals/discounts. For this interactive interface we need a scripting language such as **JavaScript**. It is a cross-platform, object-oriented scripting language used to make webpages interactive (e.g., having complex animations, clickable buttons, popup menus, etc.).

4. We certainly need a framework that will combine all the above operations. Bootstrap is themost popular HTML, CSS, and JavaScript frameworkfor developing responsive, mobile-first websites.

Database

To arrange all the data in certain format, we firstly need data management system and for this we have several DBMS (database management system) like MySQL, PostgreSQL, Oracle, mongoDB. Here we shall be making use of **MySQL**. It is a database system used for developing web-based software applications. **MySQL** used for bothsmall and large applications.



Back-end

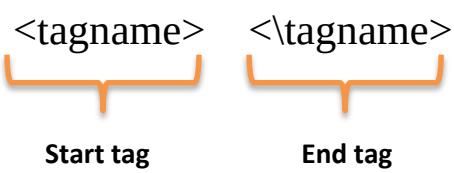
Last but not the least we need a mediator between the data and the front-end, because front-end cannot understand the language of database. And front-end cannot interact with database and fetch the details as per requirement. It is this layer that manages both front-end and database. We have several languages along with their framework to fulfil this need (**Java-Springs & Hibernate, JavaScript-Express JS & Node JS, Python-Django & Flask, C#/C-sharp-.NET Core & .NET MVC**). We shall be making use of Python and Django.

HTML

Before we start with the concept the key difference is to note the display of output. The output of a web application program doesn't appear on the command prompt or on any console whereas here it willappear on software i.e. the browser. And the browser understands only markup languages such as **HTML, KML, MathML, SGML, XHTML, and XML.**

Let us get started with HTML (Hyper Text Markup Language). The syntax of markup languages are composed of tags.

Syntax of tags:



We have several tags in HTML. You can visit the below link to get all the tags and its brief description

https://www.w3schools.com/tags/default.asp

But all the above tags will be represented in black & white colour. Certainly nowadays we have best visualized websites, and to better get styled format of these texts we shall use another language i.e. CSS.