SIX WEEKS SUMMER TRAINING

REPORT

On

Web Development

Submitted by

Shivansh Upadhyay

Registration No: 11708962

Programme Name: B. Tech (CSE)

Under the Guidance of

Sarvesh Agrawal

School of Computer Science & Engineering

Lovely Professional University, Phagwara

(June-July, 2019)

DECLARATION

I hereby declare that I have completed my six weeks summer training at Internshala online platform from 01/06/2019 to 20/07/2019 under the guidance of Sarvesh Agrawal. I have declare that I have worked with full dedication during these six weeks of training and my learning outcomes fulfil the requirements of training for the award of degree of Bachelor Of Technology in Computer Science and Technology, Lovely Professional University, Phagwara.

SHIVANSH UPADHYAY

11708962

Date: 20/07/2019

Acknowledgement

I would like to express my sincere gratitude to Internshala, Mr. Sarvesh Agrawal (Founder and CEO) for providing their invaluable guidance, comments and suggestions throughout the course.

I would specially thank Ms. Shruti my training mentor for constantly motivating me to work harder and for encouragement and invaluable assistance.

Also, I would like to thanks to my parent for giving encouragement and support. Without their constant support, I might not be able to complete this training properly. I would also like to say thanks to my friends for being there for me when I needed their help.

SHIVANSH UPADHYAY

11708962

Date: 20/07/2019

Training Certificate:

INTERNSHALA TRAININGS

CERTIFICATE OF TRAINING

Web Development

Shivansh Upadhyay from **Lovely Professional University** has successfully undergone a six weeks online summer training on Web Development. The training program consisted of HTML & CSS, Bootstrap, SQL and PHP modules and lasted for six weeks from 1st June, 2019 to 13th July, 2019.

We wish Shivansh all the best for future endeavours.

Sarvesh Agrawal

Founder & CEO

Date of certification: 2019-07-20

Certificate Number : BC07CC04-9497-7C7B-C039-3955C9CDAABC

For certificate authentication please visit https://trainings.internshala.com/verify_certificate

Introduction

Web development is the work involved in developing a web site for the Internet. Web development can range from developing a simple single static page of plain text to complex web-based internet applications, electronic businesses, and social network services.

There are two broad divisions of web development – front-end development (also called client-side development) and back-end development (also called server-side development).

Front-end development refers to constructing what a user sees when they load a web application – the content, design and how you interact with it. This is done with three codes – HTML, CSS and JavaScript.

HTML, short for Hyper Text Mark-up Language, is a special code for 'marking up' text in order to turn it into a web page. Every web page on the net is written in HTML, and it will form the backbone of any web application. CSS, short for Cascading Style Sheets, is a code for setting style rules for the appearance of web pages. CSS handles the cosmetic side of the web. Finally, JavaScript is a scripting language that's widely used to add functionality and interactivity to web pages.

Back-end development controls what goes on behind the scenes of a web application. A back-end often uses a database to generate the front-end. Back-end scripts are written in many different coding languages and frameworks, such as…

- PHP
- Ruby on Rails
- ASP.NET
- Perl
- Java
- Node.js
- Python

But, I have learnt PHP as the Back-end script in my summer training. Because PHP is the most popular scripting language on the web. Currently, it is one of the most loved languages used for dynamic web pages. It is widely used open source general-purpose scripting

language which is best for web development. I also learned Structured Query language in Wampp server for handling Relational database Management system.

Technology Learnt

I learnt web Development from Internshala's summer training program. I learnt these technologies during the 1.5 month training period:

- HTML
- CSS
- Bootstrap
- SQL
- PHP

Basic Hardware/Software Requirements:

Operating System:

- Windows 7, Windows 8 or Windows 10
- Mac OSX 10.8, 10.9, 10.10 or 10.11

Hardware:

- Processor (CPU) with 2 gigahertz (GHz) frequency or above
- A minimum of 2 GB of RAM
- Monitor Resolution 1024 X 768 or higher
- A minimum of 20 GB of available space on the hard disk

Browsers:

- Chrome* 36+
- Edge* 20+
- Mozilla Firefox 31+
- Internet Explorer 11+ (Windows only)
- Safari 6+ (MacOS only)

There is a lot more to say about it. Web site is actually laid out in three fundamental layers, namely:

1. **Structure Layer**: We use HTML to give structure and semantic meaning to the content.
2. **Presentation Layer:** Use CSS to give a layout and visual presentation to the content.
3. **Behaviour Layer:** Use JavaScript to give additional interaction to the website.

HTML:

HTML is an acronym which stands for "**Hyper Text Markup Language**" which is used for creating web pages and web applications.

In the late 1980's, a physicist, Tim Berners-Lee who was a contractor at CERN, proposed a system for CERN researchers. In 1989, he wrote a memo proposing an internet based hypertext system.

Tim Berners-Lee is known as the father of HTML. The first available description of HTML was a document called "HTML Tags" proposed by Tim in late 1991. The latest version of HTML is HTML5. Let's see what is meant by Hypertext Markup Language, and Web page.

Hyper Text: Hypertext simply means "Text within Text." A text has a link within it, is a hypertext. Whenever you click on a link which brings you to a new webpage, you have

clicked on a hypertext. Hypertext is a way to link two or more web pages (HTML documents) with each other.

Markup language: A markup language is a computer language that is used to apply layout and formatting conventions to a text document. Markup language makes text more interactive and dynamic. It can turn text into images, tables, links, etc.

Web Page: A web page is a document which is commonly written in HTML and translated by a web browser. A web page can be identified by entering an URL. A Web page can be of the static or dynamic type. With the help of HTML only, we can create static web pages.

Hence, HTML is a markup language which is used for creating attractive web pages with the help of styling, and which looks in a nice format on a web browser. An HTML document is made of many HTML tags and each HTML tag contains different content.

CSS:

CSS stands for Cascading Style Sheet. CSS is used to design HTML tags.CSS is a widely used language on the web. HTML, CSS and JavaScript are used for web designing. It helps the web designers to apply style on HTML tags. CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes. SGML (Standard Generalized Markup Language) is the origin of CSS. It is a language that defines markup languages.

CSS handles the look and feel part of a web page. Using CSS, you can control the colour of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colours are used, layout designs, and variations in display for different devices and screen sizes as well as a variety of other effects.

CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.There are many advantages of web development.

You can write CSS once and then reuse same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want. To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.

CSS can be used to style HTML elements in three ways:

1. **Inline:** CSS rule applied as an attribute to the HTML element. Has the most precedence.

2. **Internal:** Many CSS rules can be written inside the same HTML file for elements. It has less precedence than the above one.

3. **External:** CSS rules are written in a separate file and then linked to the respective HTML file. Has the less precedence.

Advantages of CSS

CSS saves time − you can write CSS once and then reuse same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want.

Pages load faster − If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So less code means faster download times.

Easy maintenance − To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.

Superior styles to HTML − CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.

Multiple Device Compatibility − Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be presented for handheld devices such as PDAs and cell phones or for printing.

Global web standards − Now HTML attributes are being deprecated and it is being recommended to use CSS. So it's a good idea to start using CSS in all the HTML pages to make them compatible to future browsers.

Limitations of CSS:

- Ascending by selectors is not possible
- Limitations of vertical control
- No expressions
- No column declaration
- Pseudo-class not controlled by dynamic behaviour
- Rules, styles, targeting specific text not possible

CSS frameworks are the pre-planned libraries which make easy and more standard compliant web page styling. The frequently used CSS framework is Bootstrap which I have learned in this training.

Bootstrap:

Bootstrap is an open-source JavaScript framework developed by the team at Twitter. They Used HTML CSS JS for building user defined interface! We can say it “Front-end-framework”.

Bootstrap is a CSS based framework used to make websites responsive. The Purpose of bootstrap is to make faster responsive websites, which will adjust itself on all devices like Mobile phones, tablets, computer, Laptop and all. Bootstrap is the world’s most popular front end framework to develop mobile first, responsive website very easily. It is very easy to get started with, it is highly customizable, and you can develop websites very quickly. The Bootstrap community is pretty huge as well.

Earlier whenever we are writing CSS we used to define all the properties in the separate CSS file that we want to attach the separate CSS file, wherein bootstrap they have already written some classes in the bootstrap.css file. You just have to import that CSS file and use their classes.

In addition, Bootstrap requires Jquery to work. Jquery is a popular and widely used JavaScript library which both simplifies and adds JavaScript cross-browser compatibility.

Bootstrap can be boiled down to three main files:

- Bootstrap.css – a CSS framework
- Bootstrap.js – a JavaScript/Jquery framework
- Glyphicons – a font (an icon font set)

In addition, Bootstrap requires Jquery to work. Jquery is a popular and widely used JavaScript library which both simplifies and adds JavaScript cross-browser compatibility.

Advantages of Bootstrap

The biggest advantage of using Bootstrap is that it comes with free set of tools for creating flexible and responsive web layouts as well as common interface components. Here are some more advantages, why one should opt for Bootstrap:

- **Save lots of time** — you can save lots of time and efforts using the Bootstrap predefined design templates and classes and concentrate on other development work.
- **Responsive features** — Using Bootstrap you can easily create responsive designs. Bootstrap responsive features make your web pages to appear more appropriately on different devices and screen resolutions without any change in markup.
- **Consistent design** — All Bootstrap components share the same design templates and styles through a central library, so that the designs and layouts of your web pages are consistent throughout your development.
- **Easy to use** — Bootstrap is very easy to use. Anybody with the basic working knowledge of HTML and CSS can start development with Bootstrap.

- **Compatible with browsers** — Bootstrap is created with modern browsers in mind and it is compatible with all modern browsers such as Mozilla Firefox, Google Chrome, Safari, Internet Explorer, and Opera.
- **Open Source** — And the best part is, it is completely free to download and use

Future Scope

One thing we can all agree on is that we need to understand what will happen in the future to Bootstrap, for the sake of web development's future. Bootstrap's Github states that as of now (insert date) they're almost done with V4.1 which is concerned with a constant grid system, utilities, and small new features. They're also working on V4.2 that promises to bring enhancements to forms and components.

The conclusion we can draw from this is that the people behind Bootstrap are very invested in it, super hard working and definitely continuously. That's the first good sign. Having Twitter behind is the other. Let's face it, any framework backed by a huge company does well. And it makes all the sense in the world. As I was saying earlier, a huge company means loads of funds.

SQL: Structured Query Language

SQL is Structured Query Language, which is a computer language for storing, manipulating and retrieving data stored in a relational database. The letters are NOT an acronym for Structured Query Language. SQL is a derivative of a language originally created by IBM named SEQUEL, which was an acronym for Structured English Query Language. It was a query language whose syntax was a form of structured English. The syntax of SQL retains the property of being a form of structured English, and is still a query language.

SQL is the standard language for Relational Database System. All the Relational Database Management Systems (RDMS) like MySQL, MS Access, Oracle, Sybase, Informix, Postgres and SQL Server use SQL as their standard database language.

A database is an organized collection of data, so that it can be easily accessed and managed. You can organize data into tables, rows, columns, and index it to make it easier to find relevant information. The main purpose of the database is to operate a large amount of information by storing, retrieving, and managing data. There are many dynamic websites on the World Wide Web nowadays which are handled through databases. For example, a model that checks the availability of rooms in a hotel. It is an example of a dynamic website that uses a database.

Advantages

SQL is widely popular because it offers the following advantages −

- Allows users to access data in the relational database management systems.
- Allows users to describe the data.
- Allows users to define the data in a database and manipulate that data.
- Allows to embed within other languages using SQL modules, libraries & pre-compilers.
- Allows users to create and drop databases and tables.
- Allows users to create view, stored procedure, functions in a database.
- Allows users to set permissions on tables, procedures and views.

Future Aspect

SQL today remains the backbone of every relational database and many non-relational databases. There currently is no viable replacement for SQL though more people are using SQL generators than ever before, such as tools that let you diagram your database graphically or “code first” methods which allow you to design your database using code. SQL isn’t going anywhere in the near future and if you are doing serious transactional work neither are relational databases. So, put it on your short list of languages you should learn sooner rather than later, and certainly before designing an application.

PHP: Hypertext Pre-processor

PHP is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites. It is

integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.

It is powerful enough to be at the core of the biggest blogging system on the web (WordPress). It is deep enough to run the largest social network (Facebook). It is also easy enough to be a beginner's first server side language!

Common uses of PHP

- PHP performs system functions, i.e. from files on a system it can create, open, read, write, and close them.
- PHP can handle forms, i.e. gather data from files, save data to a file, through email you can send data, return data to the user.
- You add, delete, and modify elements within your database through PHP.
- Access cookies variables and set cookies.
- Using PHP, you can restrict users to access some pages of your website.
- It can encrypt data.

We can secure of a great future for PHP. But, in this technical age, no one technology is constant. But if we want to choose a better option we choose PHP. Here in this thing, I will tell you why it is the best option.

1. Visibility over internet
2. PHP in blogging
3. CMS supporting PHP
4. PHP and MySQL
5. Simplicity of PHP
6. Regular updates in PHP

Laravel is certainly one of the most widely accepted and currently the most relevant PHP development framework available to make the developer’s efforts even more effective, faster and easier. Much of it is due to the MVC architecture it has brought into the picture, which has essentially changed the shape of web development for the better.

Reason for choosing Web Development

Simple answer I loved it. I loved the thrill. I love to see my imagination come to life. I loved gadgets. I choose to be a web developer to bring my ideas to life and help others see what I think a better world looks like. World Wide Web is everywhere or everyone is on World Wide Web. These are few reasons:

1. **Front-end web developers are in demand**. Whether you want to work for an organization or as a self-employed freelancer, front-end web developers are in demand. In fact, the Creative Group has named front-end web development one of the Top 10 Creative and Marketing jobs of 2017.
2. **It's a lucrative career**. Front-end web development pays well. According to the Creative Group Salary Guide, a front-end web developer with three years of experience can earn from $80,000–$119,500.
3. **Flexibility**. As a front-end developer, you can work from anywhere, including home. This makes it one of the most flexible careers you can choose. The skill set you acquire allows you to work in different areas like Image editing, UX/UI, mobile development and more.
4. **Creativity.** Front-end web development is all about creativity and creative problem-solving. As a front-end web developer, you'll have the skills to build customized websites to create the best possible user experience.
5. **Many career options**. Online presence has become a main factor in all sectors and client/user engagement is a constant challenge for companies. Whether you choose to work for corporations, non-profits or become a self-employed freelancer, you can create a successful career.
6. **A constantly evolving field**. Front-end web development is an exciting career because it's always evolving and constantly changing. This means you'll always have the opportunity to interact with new tools and learn new skills, keeping you engaged in your career. It's a field that provides many opportunities for hands-on learning.

Web gave us all a lot. I want to thank each and every one who put their work in making our life easy and that is why I choose to be a web developer now it is my turn to make people life easy and make this world a better place.

Learning Outcomes

From this training of 6 weeks which we underwent in our summer vacation I learnt to develop front end web pages using html, css and Boootstrap and server side scripting using PHP and accessing, retrieving and manipulating databases using SQL. This technology will help me in my future in getting job and I will be able to create responsive web pages. This technology will help us in future in many ways:

The web is regularly evolving and developing, serving the population throughout the world. Many people are wondering what the web development future will bring. Similarly, as with many predictions (sources), we are just able to find the indications and future trends of web development that can help to point us in the right direction. Some of these trends are an update to a previous trend which expels all its drawbacks while some are totally new to the field.

Role of Artificial Intelligence (AI) in Web Design and Development

Whenever there is a mention of the future of web development, you cannot lack the topic of artificial intelligence. In recent years, AI has undergone a lot of research and advancements. AI-enabled chatbots can be the cutting-edge enterprise digital assistants of your brand on the internet. The programmers will embed machine learning algorithm and APIs in the web applications to influence them to convey personalized and rich user experience.

AI has gained a lot of exposure in recent years. It is no longer a buzzword or some Hollywood Sci-Fi movie gimmick.

AI is now a reality which is shaping our digital world. AI is extensively being used in almost every industry including manufacturing, transportation, and aviation and in almost all web and IT solutions.

Artificial Intelligence in web development can seriously yield a great outcome for business owners by drastically increasing their conversion rates and ROI.

Imagine a user browsing through your website and based upon his/her interest in certain products, the web interface automatically shows the user some promotional offers centred around that interest so that he/she buys the product at that instance.

Chatbots – Better Reply Predictions

Google Trends shows exponential growth in Chatbots over time.

Chatbots are nothing but programs powered by Natural Language Processing (NLP) and Machine Learning.

Suppose you are looking to buy sports shoes for yourself. Now the basic step involves a Google search and then landing on a website.

In the website, first you will search for the Sports Shoes and in the filter section, you can select different options according to your requirement such as size, colour, price range etc.

After going through plenty of options, you decide to go with one option. After that, there is again a set of actions that need to be performed such as checkout, billing before you can actually place the order.

Whereas in a Chatbot, all the browsing is replaced by a Q&A session.

Already, every major player like Google, Microsoft, IBM, Facebook, Amazon etc. have introduced their open-source chat building tools and frameworks for developers.

The normal user doesn't need to download any other app for this but can use Facebook Messenger, Kik, Telegram etc. where they just need to search for the brand they are looking for and can start a conversation with the chatbot just like doing it with your friend.

Role of Progressive Web Apps (PWA) in Web Design and Development

Progressive Web Applications (PWA) is the future of web app development. PWA with Android Instant Apps is the next advancement in web industry after Responsive Web Design.

Progressive Web Apps uses progressive enhancements that offers features similar to a native mobile application.

Progressive Web Apps and Android Instant Apps combined together lets you create beautiful apps with material design and animations without the need of installing them on any device.

Have you ever encountered a popup while browsing a website on mobile device saying "ADD TO HOME SCREEN"? When you click on the button, the application installs itself in the background. Now that application sits in your app drawer and offers the experience of a native mobile application.

The app was downloaded from a web application without seeing the face of a Play Store or App Store. Isn't it great!!! These apps offer offline access to the content without the need of an internet connection.

Greater User Experience

AI will help UX designers to reduce the analysis time by converting large chunks of data into something that can be accumulated quickly and efficiently.

Today, everyone is recognizing the effect of AI in the UX sector. As the number of people using AI increases, enterprises will focus more on enhancing customer experience.

Soon we will be entering the new era of interface i.e. no interface. According to the Golden Krishna, designer at Google and author of the book "The Best Interface Is No Interface", we will be entering an era where there is no need of physical screens thereby offering users with more secure products.

AI is no longer confined to developers and data scientists anymore. As the world is changing rapidly it becomes important for the designers to start thinking beyond displays and interfaces.

We should not limit ourselves to what we are currently having but should also focus on inspiration from anything and everything as today the whole world is an interface.

Voice Based Search

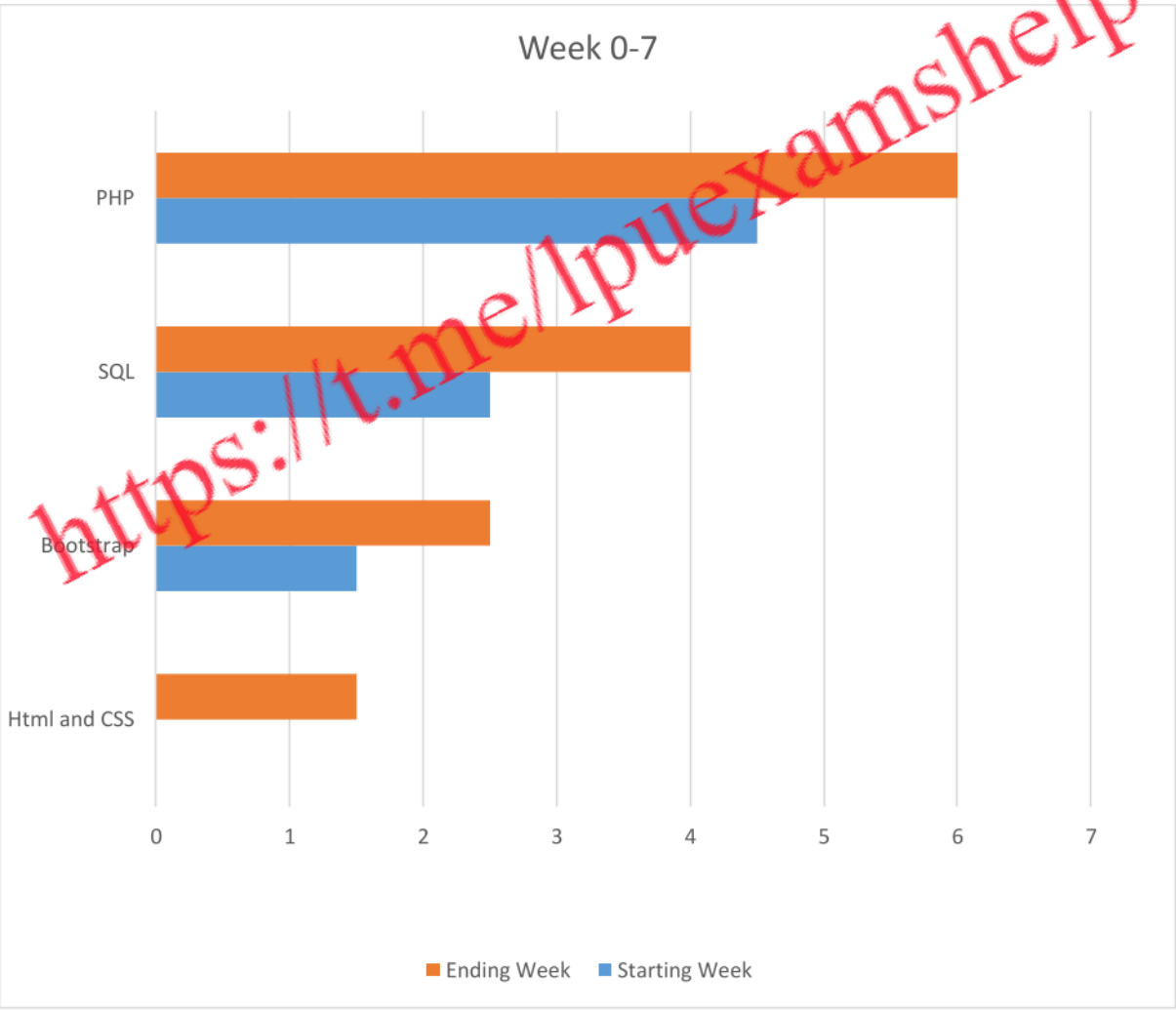
Voice-based search has recently gained a huge momentum due to the introduction of various Virtual Assistants like Google Assistant, Amazon Alexa, and Apple Siri and so on.

With the increase in the use of these digital assistants, website development needs to look into the evolution of voice-based search.

This voice-based technology will become a complete necessity in virtual shopping and e-commerce companies need to keep a close look into it.

AI bots powered by voice and search will be the future of this technology.

Gantt chart



Bibliography

- https://fonts.google.com/specimen/Roboto?selection.family=Roboto
- https://jquery.com/downloads/
- https://getbootstrap.com/docs/3.3/components/
- http://download.cnet.com/WampServer-64-Bit/3000-10248_4-75544590.html
- https://trainings.internshala.com/
- https://www.w3schools.com/
- https://www.wikipedia.org/
- https://www.tutorialspoint.com/
- https://www.geeksforgeeks.org/
- https://www.javatpoint.com/