Chapter 3

SYSTEM ANALYSIS AND REQUIREMENTS

3.1. INTRODUCTION

Here we discuss about the software and hardware requirements that are used to implement our project.

3.2. SOFTWARE USED

- HTML
- CSS
- Bootstrap
- PHP
- Online storage service
- Laravel

3.2.1. HTML

Hyper Text Markup Language, commonly abbreviated as HTML, is the standard markup language used to create web pages. Along with CSS, and JavaScript, HTML is a cornerstone technology used to create web pages, as well as to create user interfaces for mobile and web applications. Web browsers can read HTML files and render them into visible or audible web pages. HTML describes the structure of a website semantically and, before the advent of Cascading Style Sheets (CSS), included cues for the presentation or appearance of the document (web page), making it a markup language, rather than a programming language.[2]

HTML elements form the building blocks of HTML pages. HTML allows images and other objects to be embedded and it can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img /> and <input /> introduce content into the page directly. Others such as ... surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.[5] HTML markup can also refer the browser to Cascading Style Sheets (CSS) to define the look and layout of text and other material. The World Wide Web Consortium (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.[8]

In 1980, physicist Tim Berners-Lee, then a contractor at CERN, proposed and prototyped ENQUIRE, a system for CERN researchers to use and share documents. In 1989, Berners-Lee wrote a memo proposing an Internet-based hypertext system. Berners-Lee specified HTML and wrote the browser and server software in late 1990.

The first publicly available description of HTML was a document called "HTML Tags", first mentioned on the Internet by Tim Berners-Lee in late 1991. It describes 18 elements comprising the initial, relatively simple design of HTML. Except for the hyperlink tag, these were strongly influenced by SGML guide, an in-house Standard Generalized Markup Language (SGML)-based documentation format at CERN. Eleven of these elements still exist in HTML 4.[4]

HTML is a markup language that web browsers use to interpret and compose text, images, and other material into visual or audible web pages. Default characteristics for every item of HTML markup are defined in the browser, and these characteristics can be altered or enhanced by the web page designer's additional use of CSS. Many of the text elements are found in the 1988 ISO technical report TR 9537 Techniques for using SGML, which in turn covers the features of early text formatting languages such as that used by the RUNOFF command developed in the early 1960s for the CTSS (Compatible Time-Sharing System) operating system: these formatting commands were derived from the commands used by typesetters to manually format documents. However, the SGML concept of generalized markup is based on elements (nested annotated ranges with attributes) rather than merely print effects, with also the separation of structure and markup; HTML has been progressively moved in this direction with CSS.[5]

Further development under the auspices of the IETF was stalled by competing interests. Since 1996, the HTML specifications have been maintained, with input from commercial software vendors, by the World Wide Web Consortium (W3C). However, in 2000, HTML also became an international standard (ISO/IEC 15445:2000). HTML 4.01 was published in late 1999, with further errata published through 2001. In 2004, development began on HTML5 in the Web Hypertext Application Technology Working Group (WHATWG), which became a joint deliverable with the W3C in 2008, and completed and standardized on 28 October 2014.[7]

3.2.2 CSS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language. Although most often used to set the visual style of web pages and user interfaces written in HTML and XHTML, the language can be applied to any XML document, including plain XML, SVG and XUL, and is applicable to rendering in speech, or on other media. Along with HTML and JavaScript, CSS is a cornerstone technology used by most websites to create visually engaging webpages, user interfaces for web applications, and user interfaces for many mobile applications.[5]

CSS is designed primarily to enable the separation of document content from document presentation, including aspects such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple HTML pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content.[11]

This separation of formatting and content makes it possible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (when read out by a speech-based browser or screen reader) and on Braille-based, tactile devices. It can also be used to display the web page differently depending on the screen size or device on which it is being viewed. Readers can also specify a different style sheet, such as a CSS file stored on their own computer, to override the one the author has specified.

Changes to the graphic design of a document (or hundreds of documents) can be applied quickly and easily, by editing a few lines in the CSS file they use, rather than by changing markup in the documents.

The CSS specification describes a priority scheme to determine which style rules apply if more than one rule matches against a particular element. In this so-called cascade, priorities (or weights) are calculated and assigned to rules, so that the results are predictable.

The CSS specifications are maintained by the World Wide Web Consortium (W3C). Internet media type (MIME type) text/css is registered for use with CSS by RFC 2318 (March 1998). The W3C operates a free CSS validation service for CSS documents.

CSS was first proposed by Håkon Wium Lie on October 10, 1994.At the time, Lie was working with Tim Berners-Lee at CERN. Several other style sheet languages for the web were proposed around the same time, and discussions on public mailing lists and inside World Wide Web Consortium resulted in the first W3C CSS Recommendation (CSS1) being released in 1996. In particular, Bert Bos' proposal was influential; he became co-author of CSS1 and is regarded as cocreator of CSS.

3.2.3. BOOTSTRAP

Bootstrap is a free and open-source front-end library for creating websites and web applications. It contains HTML- and CSS-based design templates for typography, forms, buttons, navigation and other interface components, as well as optional JavaScript extensions. It aims to ease the development of dynamic websites and web applications.

Bootstrap is a front end web framework, that is, an interface for the user, unlike the server-side code which resides on the "back end" or server.

Bootstrap is the second most-starred project on GitHub, with over 95 thousand stars and more than 40 thousand forks. Bootstrap, originally named Twitter Blueprint, was developed by Mark Otto and Jacob Thornton at Twitter as a framework to encourage consistency across internal tools. Before Bootstrap, various libraries were used for interface development, which led to inconsistencies and a high maintenance burden.[4]

3.2.4. PHP

PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. Originally created by Rasmus Lerdorf in 1994, the PHP reference implementation is now produced by The PHP Group.PHP originally stood for Personal Home Page, but it now stands for the recursive backronym PHP: Hypertext Preprocessor.

PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management system and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical applications.

The standard PHP interpreter, powered by the Zend Engine, is free software released under the PHP License. PHP has been widely ported and can be deployed on most web servers on almost every operating and platform, free of charge. The PHP language evolved without a written formal specification or standard until 2014, leaving the canonical PHP interpreter as a *de facto* standard. Since 2014 work has gone on to create a formal PHP specification. During the 2010s there have been increased efforts towards standardisation and code sharing in PHP applications by projects such as PHP-FIG in the form of PSR-initiatives as well as Composer dependency manager and the Packagist repository.

PHP development began in 1995 when Rasmus Lerdorf wrote several Common Gateway Interface (CGI) programs in C, which he used to maintain his personal homepage. He extended them to work with web forms and to communicate with databases, and called this implementation "Personal Home Page/Forms Interpreter" or PHP/FI. PHP/FI could be used to build simple, dynamic web applications. To accelerate bug reporting and improve the code, Lerdorf initially announced the release of PHP/FI as "Personal Home Page Tools (PHP Tools) version 1.0" on the Usenet discussion group comp.infosystems.www.authoring.cgion June 8, 1995.This release already had the basic functionality that PHP has as of 2013. This included Perl-like variables, form handling, and the ability to embed HTML. The syntax resembled that of Perl but was simpler, more limited and less consistent.

The fact that PHP was not originally designed but instead was developed organically has led to inconsistent naming of functions and inconsistent ordering of their parameters. In some cases, the function names were chosen to match the lower-level libraries which PHP was "wrapping", while in some very early versions of PHP the length of the function names was used internally as a hash function, so names were chosen to improve the distribution of hash values

3.2.5. ONLINE STORAGE SERVER

Online file storage provider is an Internet hosting service specifically designed to host user files. It allows users to upload files that could then be accessed over the internet from a different computer, tablet, smart phone or other networked device, by the same user or possibly by other users, after a password or other authentication is provided.

3.2.6. LARAVEL

Laravel is a free, open-source PHP web framework, created by Taylor Otwell and intended for the development of web applications following the model–view–controller (MVC) architectural pattern. Some of the features of Laravel are a modular packaging system with a dedicated dependency manager, different ways for accessing relational databases, utilities that aid in application deployment and maintenance, and its orientation toward syntactic sugar.

As of March 2015, Laravel is regarded as one of the most popular PHP frameworks, together with Symfony, Nette, CodeIgniter, Yii2 and other frameworks.

The source code of Laravel is hosted on GitHub and licensed under the terms of MIT License.

Laravel 1 included built-in support for authentication, localisation, models, views, sessions,

routing and other mechanisms, but lacked support for controllers that prevented it from being a true MVC framework.

Laravel 2 was released in September 2011, bringing various improvements from the author and community. Major new features included the support for controllers, which made Laravel 2 a fully MVC-compliant framework, built-in support for the inversion of control (IoC) principle, and a templating system called Blade. As a downside, support for third-party packages was removed in Laravel 2.[5]

Laravel 3 was released in February 2012 with a set of new features including the command-line interface (CLI) named Artisan, built-in support for more database management systems, database migrations as a form of version control for database layouts, support for handling events, and a packaging system called Bundles. An increase of the Laravel's userbase and popularity lined up with the release of Laravel 3.

Laravel 4, codenamed Illuminate, was released in May 2013. It was made as a complete rewrite of the Laravel framework, migrating its layout into a set of separate packages distributed through Composer, which serves as an application-level package manager. Such a layout improved the extendibility of Laravel 4, which was paired with its official regular release schedule spanning six months between minor point releases[5]. Other new features in the Laravel 4 release include database seeding for the initial population of databases, support for message queues, built-in support for sending different types of email, and support for delayed deletion of database records called soft deletion.

Laravel 5 was released in February 2015 as a result of internal changes that ended up in renumbering the then-future Laravel 4.3 release. New features in the Laravel 5 release include support for scheduling periodically executed tasks through a package called Scheduler, an abstraction layer called Flysystem that allows remote storage to be used in the same way as local file systems, improved handling of package assets through Elixir, and simplified externally handled authentication through the optional Socialite package. Laravel 5 also introduced a new internal directory tree structure for developed applications.

SUMMARY

This chapter discussed about the project requirements in detail which includes the software that are used in the completion of this project.