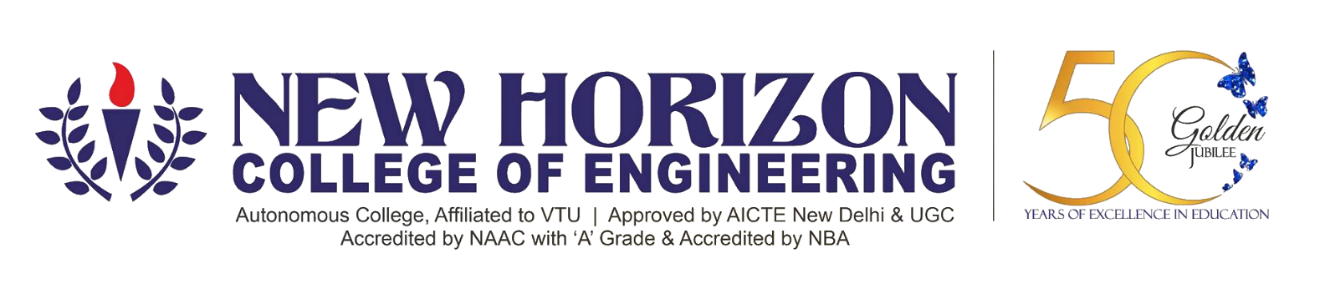
****

**A MINI PROJECT**

**REPORT**

*for*

*Mini Project in Web Frame Works or Operating System (20CSE68)*

**HOLD MY HOME**

*Submitted by*

**ANKITA TANDON**

**USN: 1NH18CS023,**

**Semester-Section: 6-A**

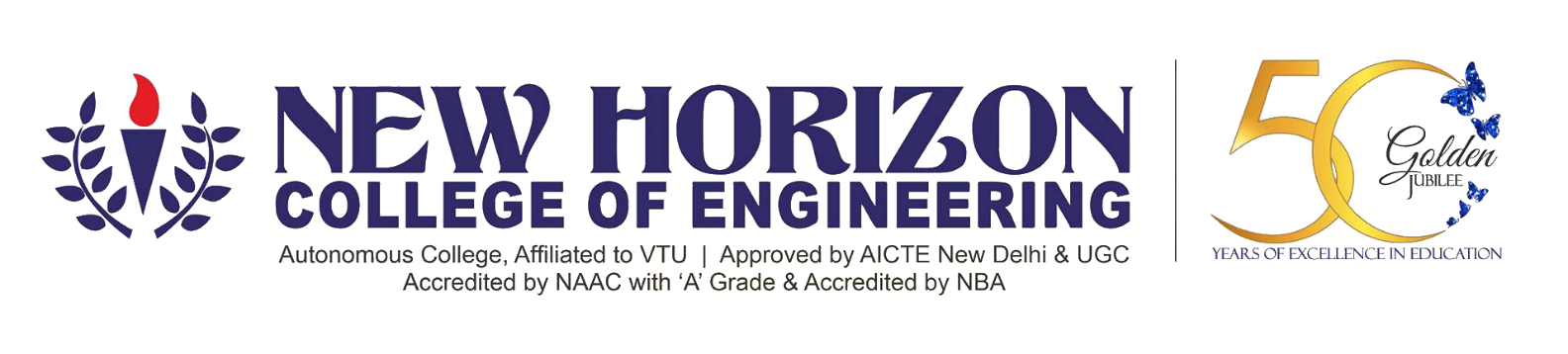
*In partial fulfillment for the award of*

*the degree of*

**Bachelor of Engineering**

*in*

**COMPUTER SCIENCE AND ENGINEERING**

***Certificate***

*This is to certify that the mini project work titled*

**HOLD MY HOME**

*Submitted in partial fulfillment of the degree of*

*Bachelor of Engineering in*

*Computer Science and Engineering by*

**ANKITA TANDON**

USN: 1NH18CS023

*DURING*

*EVEN SEMESTER 2020-2021*

*for*

*COURSE CODE: 20CSE68*

Signature of Reviewer Signature of HOD

SEMESTER END EXAMINATION

*Name of the Examiner Signature with date*

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ABSTRACT**

# An abstract (synopsis) not exceeding 500 words, indicating salient features of the work

# Keywords:

# ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be impossible without the mention of the people who made it possible, whose constant guidance and encouragement crowned our efforts with success.

I have great pleasure in expressing gratitude to **Dr. Mohan Manghnani**, Chairman of New Horizon Educational Institutions for providing necessary infrastructure and creating good environment.

I take this opportunity to express my profound gratitude to **Dr. Manjunatha,** Principal, New Horizon College of Engineering, for his constant support and encouragement.

I am grateful to **Dr. Amarjeet Singh,** Dean - Academics, for his unfailing encouragement and suggestions, given to me in the course of my project work.

I would also like to thank **Dr. B. Rajalakshmi**, Professor and Head, Department of Computer Science and Engineering, for her constant support.

I also express my gratitude to **Ms./Dr. Suganya**, **Professor**, Department of Computer Science and Engineering, my project guide, for constantly monitoring the development of the project and setting up precise deadlines. Her valuable suggestions were the motivating factors in completing the work.

**ANKITA TANDON**

**1NH18CS023**

**CONTENTS**

**ABSTRACT I**

**ACKNOWLEDGMENT II**

**LIST OF FIGURES VI**

**LIST OF TABLES VII**

1. **INTRODUCTION** 
   1. PROBLEM DEFINITION **1**
   2. OBJECTIVES **1**
   3. METHODOLOGY TO BE FOLLOWED **2**
   4. EXPECTED OUTCOMES **2**
2. **FUNDAMENTALS OF WEB PROGRAMMING 3**
   1. INTRODUCTION
   2. WORLD WIDE WEB
   3. WEB BROWSERS
   4. OPERATION OF WWW
   5. WEB 2.0
   6. HTML
   7. HTML TAGS
   8. XHTML
   9. CSS
   10. JAVASCRIPT
3. **REQUIREMENTS AND SPECIFICATION**
   1. HARDWARE REQUIREMENTS **22**
   2. SOFTWARE REQUIREMENTS  **22**
   3. WEBSITE STRUCTURE DIAGRAM **22**
4. **DESIGN**
   1. DESIGN GOALS **27**
   2. FLOWCHART  **30**
5. **IMPLEMENTATION** 
   1. MODULE 1 FUNCTIONALITY **47**
   2. MODULE 2 FUNCTIONALITY  **49**
   3. MODULE 3 FUNCTIONALITY **51**
   4. MODULE 4 FUNCTIONALITY **53**
6. **RESULTS** 
   1. OUTPUT SCREENS **56**
7. **CONCLUSION 82**

**REFERENCES 83**

**LIST OF FIGURES**

|  |  |  |
| --- | --- | --- |
| **Figure No** | **Figure Description** | **Page No** |
| 1 | XXX | 4 |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**LIST OF TABLES**

|  |  |  |
| --- | --- | --- |
| **Table No** | **Table Description** | **Page No** |
| 1 | XXX | 23 |

**CHAPTER 1**

**INTRODUCTION**

**1.1 COURSE OBJECTIVES**

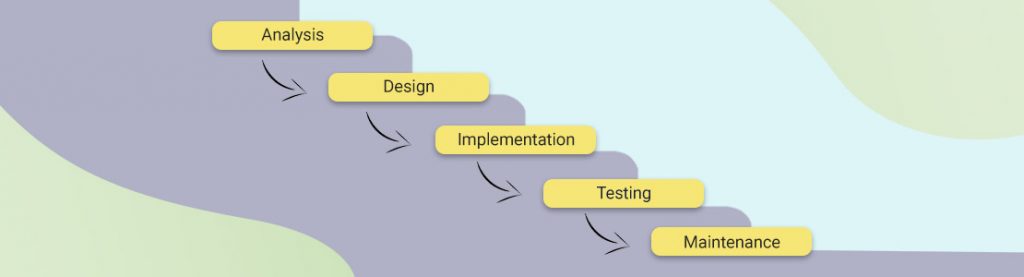
The objective of this mini project is to learn to apply the programming knowledge into the real-world problems and get exposed to the massive opportunity for learning how programming language can help us solve real-world problems to become a good engineer.

**1.2 PROBLEM DEFINITION**

The aim of the project is to build a user-friendly webpage for Selling, Buying, Renting or lease a house or rooms at a hotel, apartment or any living area real estate at an affordable rate in the nearby locality for users’ benefit and well-being. Using HTML, CSS and JavaScript coding languages.

**1.3 METHODOLOGY TO BE FOLLOWED**

***Waterfall*** is the most conventional software development methodology. In fact, it has been one of the most popular approaches for web development projects for several decades due to its plan-driven approach. The Waterfall approach requires a lot of structure and documentation. The process is divided into several stages that form a sequence:



**Fig 1.1: Stages of Waterfall Methodology**

The first stage is critical and requires a complete understanding of the project’s demands and scope by both the developers and the product owners.

Waterfall lacks flexibility which means that every phase should be fully completed before moving forward to the next stage. Once any modifications are needed or any errors are detected during the course of the project, Waterfall will require a full restart. As a result, projects managed under the Waterfall method might require much more time. On the other hand, it is great for ensuring that all deliverables meet expectations and it allows for easily measuring the progress since you see the full scope of the project in advance.

Waterfall methodology is mostly used for web development projects with a clear and predefined scope, with a fixed timeframe for project completion and few iterations or revisions.

**1.4 EXPECTED OUTCOMES**

* List down all the houses or rooms available within the range set by the user.
* Effectively efficient webpage to minimize the unbearable stress of finding the right home at the right place and price.
* Simple, easy to use with an attractive layout.
* Integrated map to find the nearest listed houses/rooms.
* Sign up and Login authentication page for security reasons.

**CHAPTER 2**

**FUNDAMENTALS OF WEB PROGRAMMING**

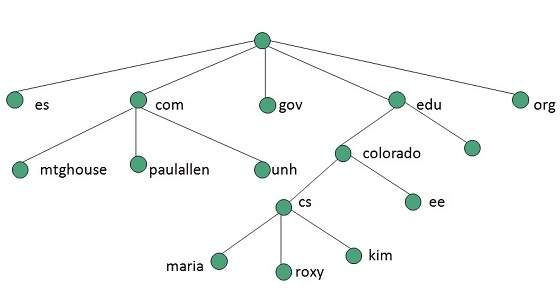
**2.1** **INTRODUCTION**

A web framework (WF) or web application framework (WAF) is a software framework that is designed to support the development of web applications including web services, web resources, and web APIs. Web frameworks provide a standard way to build and deploy web applications on the World Wide Web. Web frameworks aim to automate the overhead associated with common activities performed in web development. For example, many web frameworks provide libraries for database access, templating the frameworks, and session management, and they often promote code reuse. Although they often target development of dynamic web sites, they are also applicable to static websites.

**2.2** **WORLD WIDE WEB**

WWW stands for World Wide Web. A technical definition of the World Wide Web is: all the resources and users on the Internet that are using the Hypertext Transfer Protocol (HTTP). A broader definition comes from the organization that Web inventor Tim Berners-Lee helped found, the World Wide Web Consortium (W3C).

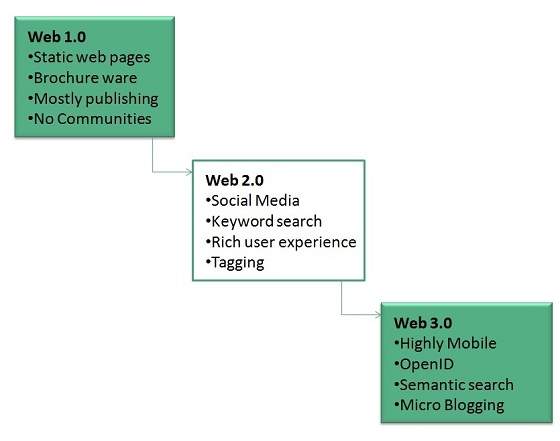
The World Wide Web is the universe of network-accessible information, an embodiment of human knowledge. In simple terms, The World Wide Web is a way of exchanging information between computers on the Internet, tying them together into a vast collection of interactive multimedia resources. Internet and Web is not the same thing: Web uses internet to pass over the information.



**Fig 2.1: Flowchart of www**

## Evolution

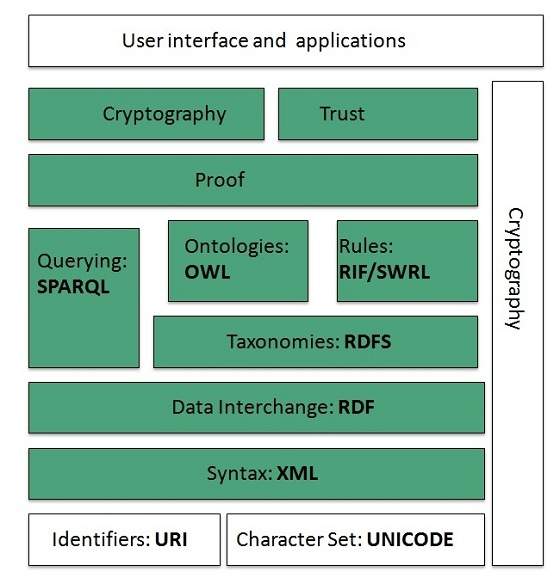
World Wide Web was created by Timothy Berners Lee in 1989 at CERN in Geneva. World Wide Web came into existence as a proposal by him, to allow researchers to work together effectively and efficiently at CERN. Eventually it became World Wide Web. The following diagram briefly defines evolution of World Wide Web:



**Fig 2.2: Evolution of www**

## WWW Architecture

WWW architecture is divided into several layers as shown in the following diagram:



**Fig 2.1: Architecture of www**

### Identifiers and Character Set

Uniform Resource Identifier (URI) is used to uniquely identify resources on the web and UNICODE makes it possible to build web pages that can be read and write in human languages.

### Syntax

XML (Extensible Markup Language) helps to define common syntax in semantic web.

### Data Interchange

Resource Description Framework (RDF) framework helps in defining core representation of data for web. RDF represents data about resource in graph form.

### Taxonomies

RDF Schema (RDFS) allows more standardized description of taxonomies and other ontological constructs.

### Ontologies

Web Ontology Language (OWL) offers more constructs over RDFS. It comes in following three versions:

* OWL Lite for taxonomies and simple constraints.
* OWL DL for full description logic support.
* OWL for more syntactic freedom of RDF

### Rules

RIF and SWRL offers rules beyond the constructs that are available from RDFs and OWL. Simple Protocol and RDF Query Language (SPARQL) is SQL like language used for querying RDF data and OWL Ontologies.

### Proof

All semantic and rules that are executed at layers below Proof and their result will be used to prove deductions.

### Cryptography

Cryptography means such as digital signature for verification of the origin of sources is used.

### User Interface and Applications

On the top of layer User interface and Applications layer is built for user interaction. The World Wide Web (WWW), commonly known as the Web, is an [information system](https://en.wikipedia.org/wiki/Information_system) where documents and other [web resources](https://en.wikipedia.org/wiki/Web_resource) are identified by [Uniform Resource Locators](https://en.wikipedia.org/wiki/URL) (URLs, such as https://example.com/), which may be interlinked by [hyperlinks](https://en.wikipedia.org/wiki/Hyperlink), and are accessible over the [Internet](https://en.wikipedia.org/wiki/Internet). The resources of the Web are transferred via the [Hypertext Transfer Protocol](https://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol) (HTTP), may be accessed by users by a [software application](https://en.wikipedia.org/wiki/Software_application) called a [*web browser*](https://en.wikipedia.org/wiki/Web_browser), and are published by a software application called a [*web server*](https://en.wikipedia.org/wiki/Web_server)*.* The World Wide Web is not synonymous with the Internet, which pre-dated the Web in some form by over two decades and upon which technologies the Web is built.

English scientist [Sir Timothy Berners-Lee](https://en.wikipedia.org/wiki/Tim_Berners-Lee) invented the World Wide Web in 1989. He wrote the first web browser in 1990 while employed at [CERN](https://en.wikipedia.org/wiki/CERN) near Geneva, Switzerland. The browser was released outside CERN to other research institutions starting in January 1991, and then to the general public in August 1991. The Web began to enter everyday use in 1993-4, when [websites for general use](https://en.wikipedia.org/wiki/List_of_websites_founded_before_1995) started to become available. The World Wide Web has been central to the development of the [Information Age](https://en.wikipedia.org/wiki/Information_Age), and is the primary tool billions of people use to interact on the Internet.

Web resources may be any type of downloaded media, but [*web pages*](https://en.wikipedia.org/wiki/Web_page) are hypertext documents [formatted](https://en.wikipedia.org/wiki/Formatted_text) in [Hypertext Markup Language](https://en.wikipedia.org/wiki/HTML) (HTML). Special HTML syntax displays embedded [hyperlinks](https://en.wikipedia.org/wiki/Hyperlink) with URLs which permits users to [navigate](https://en.wikipedia.org/wiki/Web_navigation) to other web resources. In addition to [text](https://en.wikipedia.org/wiki/Plain_text), web pages may contain references to [images](https://en.wikipedia.org/wiki/Image), [video](https://en.wikipedia.org/wiki/Video), [audio](https://en.wikipedia.org/wiki/Audio_signal), and software components which are either displayed or internally executed in the [user's](https://en.wikipedia.org/wiki/User_(computing)) web browser to render pages or streams of [multimedia](https://en.wikipedia.org/wiki/Multimedia) content.

Multiple web resources with a common theme and usually a common [domain name](https://en.wikipedia.org/wiki/Domain_name), make up a [website](https://en.wikipedia.org/wiki/Website). Websites are stored in computers that are running a [web server](https://en.wikipedia.org/wiki/Web_server), which is a program that responds to requests made over the Internet from web browsers running on a user's computer. Website content can be provided by a publisher, or interactively from [user-generated content](https://en.wikipedia.org/wiki/User-generated_content). Websites are provided for a myriad of informative, entertainment, commercial, and governmental reasons.

**2.3** **WEB BROWSERS**

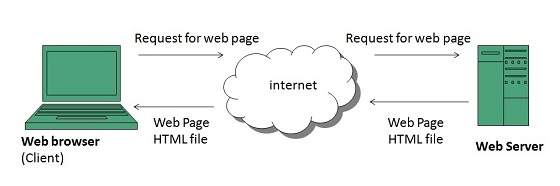
A web browser (commonly referred to as a browser) is [application software](https://en.wikipedia.org/wiki/Application_software) for accessing the [World Wide Web](https://en.wikipedia.org/wiki/World_Wide_Web). When a [user](https://en.wikipedia.org/wiki/User_(computing)) requests a [web page](https://en.wikipedia.org/wiki/Web_page) from a particular [website](https://en.wikipedia.org/wiki/Website), the web browser retrieves the necessary content from a [web server](https://en.wikipedia.org/wiki/Web_server) and then displays the page on the user's device. A web browser is not the same thing as a [search engine](https://en.wikipedia.org/wiki/Search_engine), though the two are often confused. A search engine is a website that provides [links](https://en.wikipedia.org/wiki/Hyperlink) to other websites. However, to connect to a website's server and display its web pages, a user must have a web browser installed.

Web browsers are used on a range of devices, including [desktops](https://en.wikipedia.org/wiki/Desktop_computer), [laptops](https://en.wikipedia.org/wiki/Laptop), [tablets](https://en.wikipedia.org/wiki/Tablet_computer), and [smartphones](https://en.wikipedia.org/wiki/Smartphone). In 2020, an estimated 4.9 billion people used a browser. The [most used](https://en.wikipedia.org/wiki/Usage_share_of_web_browsers) browser is [Google Chrome](https://en.wikipedia.org/wiki/Google_Chrome), with a 64% global market share on all devices, followed by [Safari](https://en.wikipedia.org/wiki/Safari_(web_browser)) with 19%.

**2.4 OPERATION OF WWW**

WWW works on client- server approach. Following steps explains how the web works:

1. User enters the URL (say, http://www.tutorialspoint.com) of the web page in the address bar of web browser.
2. Then browser requests the Domain Name Server for the IP address corresponding to www.tutorialspoint.com.
3. After receiving IP address, browser sends the request for web page to the web server using HTTP protocol which specifies the way the browser and web server communicates.
4. Then web server receives request using HTTP protocol and checks its search for the requested web page. If found it returns it back to the web browser and close the HTTP connection.
5. Now the web browser receives the web page, it interprets it and display the contents of web page in web browser’s window.



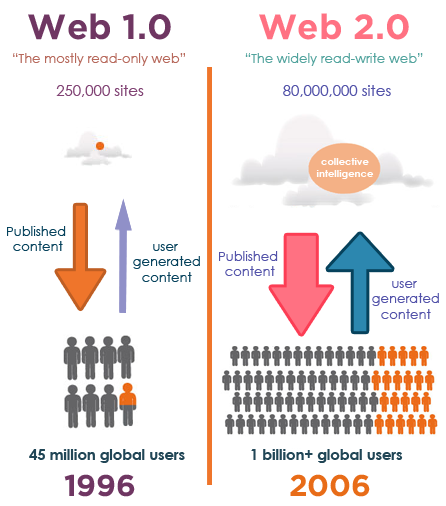
**Fig 2.4: Operation of www**

**2.5 WEB 2.0**

When it comes to defining web 2.0. the term means such internet applications which allow sharing and collaboration opportunities to people and help them to express themselves online.

***“Web 2.0 is the business revolution in the computer industry caused by the move to the internet as a platform, and any attempt to understand the rules for success on that new platform.”–*** Tim O’ Reilly.

It’s a simply improved version of the first worldwide web, characterized specifically by the change from static to dynamic or user-generated content and also the growth of social media. The concept behind Web 2.0 refers to rich web applications, web-oriented architecture, and social web. It refers to changes in the ways web pages are designed and used by the users, without any change in any technical specifications.



**Fig 2.5: Web 1.0 vs Web 2.0**

**Darcy DiNucci- an information architecture consultant, coined the term Web 2.0 in her article “Fragmented Future”. The term was popularized by Tim O’Reilly and Media Live International in 2004.** “Acronis is directly responsible for saving our company 1200 hours per year for IT operations staff in backup and recovery workflows.”

## What are the examples of Web 2.0 applications?

Web 2.0 examples include hosted services (Google Maps), Web applications (Google Docs, Flickr), Video sharing sites (YouTube), wikis (MediaWiki), blogs (WordPress), social networking (Facebook), folksonomies (Delicious), Microblogging (Twitter), podcasting (Podcast Alley) & content hosting services and many more.

Web 2.0 (also known as Participative (or Participatory) and Social Web) refers to [websites](https://en.wikipedia.org/wiki/Website) that emphasize [user-generated content](https://en.wikipedia.org/wiki/User-generated_content), [ease of use](https://en.wikipedia.org/wiki/Usability), [participatory culture](https://en.wikipedia.org/wiki/Participatory_culture) and [interoperability](https://en.wikipedia.org/wiki/Interoperability) (i.e., compatible with other products, systems, and devices) for [end users](https://en.wikipedia.org/wiki/End_user).

The term was coined by [Darcy DeNucci](https://en.wikipedia.org/wiki/Darcy_DiNucci) in 1999 and later popularized by [Tim O'Reilly](https://en.wikipedia.org/wiki/Tim_O%27Reilly) and [Dale Dougherty](https://en.wikipedia.org/wiki/Dale_Dougherty) at the first [O'Reilly Media](https://en.wikipedia.org/wiki/O%27Reilly_Media) [Web 2.0 Conference](https://en.wikipedia.org/wiki/Web_2.0_Summit) in late 2004. Although the term mimics the numbering of software versions, it does not denote a formal change in the nature of the World Wide Web, but merely describes a general change that occurred during this period as interactive websites proliferated and came to overshadow the older, more static websites of the original Web.

A Web 2.0 website allows users to interact and collaborate with each other through [social media](https://en.wikipedia.org/wiki/Social_media) dialogue as creators of [user-generated content](https://en.wikipedia.org/wiki/User-generated_content) in a [virtual community](https://en.wikipedia.org/wiki/Virtual_community). This contrasts the first generation of [Web 1.0](https://en.wikipedia.org/wiki/Web_2.0#Web_1.0)-era websites where people were limited to viewing [content](https://en.wikipedia.org/wiki/Content_(media_and_publishing)) in a passive manner. Examples of Web 2.0 features include [social networking sites](https://en.wikipedia.org/wiki/Social_networking_site) or [social media](https://en.wikipedia.org/wiki/Social_media) sites (e.g., [Facebook](https://en.wikipedia.org/wiki/Facebook)), [blogs](https://en.wikipedia.org/wiki/Blog), [wikis](https://en.wikipedia.org/wiki/Wiki), [folksonomies](https://en.wikipedia.org/wiki/Folksonomy) ("tagging" keywords on websites and links), [video sharing](https://en.wikipedia.org/wiki/Video_sharing) sites (e.g., [YouTube](https://en.wikipedia.org/wiki/YouTube)), [image sharing](https://en.wikipedia.org/wiki/Image_sharing) sites (e.g., [Flickr](https://en.wikipedia.org/wiki/Flickr)), [hosted services](https://en.wikipedia.org/wiki/Web_service), [Web applications](https://en.wikipedia.org/wiki/Web_application) ("apps"), [collaborative consumption](https://en.wikipedia.org/wiki/Collaborative_consumption) platforms, and [mashup applications](https://en.wikipedia.org/wiki/Mashup_(web_application_hybrid)).

Whether Web 2.0 is substantially different from prior Web technologies has been challenged by World Wide Web inventor [Tim Berners-Lee](https://en.wikipedia.org/wiki/Tim_Berners-Lee), who describes the term as [jargon](https://en.wikipedia.org/wiki/Jargon). His original vision of the Web was "a collaborative medium, a place where we [could] all meet and read and write." On the other hand, the term [Semantic Web](https://en.wikipedia.org/wiki/Semantic_Web) (sometimes referred to as Web 3.0) was coined by Berners-Lee to refer to a web of content where the meaning can be processed by machines.

**2.6 HTML**

* HTML stands for Hyper Text Markup Language
* HTML is the standard markup language for creating Web pages
* HTML describes the structure of a Web page
* HTML consists of a series of elements
* HTML elements tell the browser how to display the content
* HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

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

**Let's see a simple example of HTML.**

1. <! DOCTYPE>
2. <html>
3. <head>
4. <title>Web page title</title>
5. </head>
6. <body>
7. <h1>Write Your First Heading</h1>
8. <p>Write Your First Paragraph. </p>
9. </body>
10. </html>

The Hypertext Markup Language, or HTML is the standard [markup language](https://en.wikipedia.org/wiki/Markup_language) for documents designed to be displayed in a [web browser](https://en.wikipedia.org/wiki/Web_browser). It can be assisted by technologies such as [Cascading Style Sheets](https://en.wikipedia.org/wiki/Cascading_Style_Sheets) (CSS) and [scripting languages](https://en.wikipedia.org/wiki/Scripting_language) such as [JavaScript](https://en.wikipedia.org/wiki/JavaScript). [Web browsers](https://en.wikipedia.org/wiki/Web_browser) receive HTML documents from a [web server](https://en.wikipedia.org/wiki/Web_server) or from local storage and [render](https://en.wikipedia.org/wiki/Browser_engine) the documents into multimedia web pages. HTML describes the structure of a [web page](https://en.wikipedia.org/wiki/Web_page) [semantically](https://en.wikipedia.org/wiki/Semantic_Web) and originally included cues for the appearance of the document. [HTML elements](https://en.wikipedia.org/wiki/HTML_element) are the building blocks of HTML pages. With HTML constructs, [images](https://en.wikipedia.org/wiki/HTML_element#Images_and_objects) and other objects such as [interactive forms](https://en.wikipedia.org/wiki/Fieldset) may be embedded into the rendered page. HTML provides a means to create [structured documents](https://en.wikipedia.org/wiki/Structured_document) by denoting structural [semantics](https://en.wikipedia.org/wiki/Semantics) for text such as headings, paragraphs, lists, [links](https://en.wikipedia.org/wiki/Hyperlink), quotes and other items. HTML elements are delineated by tags, written using [angle brackets](https://en.wikipedia.org/wiki/Bracket#Angle_brackets). Tags such as <img/> and <input /> directly introduce content into the page. Other tags such as <p> 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 programs written in a [scripting language](https://en.wikipedia.org/wiki/Scripting_language) such as [JavaScript](https://en.wikipedia.org/wiki/JavaScript), which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The [World Wide Web Consortium](https://en.wikipedia.org/wiki/World_Wide_Web_Consortium) (W3C), former maintainer of the HTML and current maintainer of the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.

**2.7 HTML TAGS**

Description of HTML Example:

**<! DOCTYPE>:** It defines the document type or it instruct the browser about the version of HTML.

**<html >**: This tag informs the browser that it is an HTML document. Text between html tag describes the web document. It is a container for all other elements of HTML except <! DOCTYPE>

**<head>:** It should be the first element inside the <html> element, which contains the metadata (information about the document). It must be closed before the body tag opens.

**<title>:** As its name suggested, it is used to add title of that HTML page which appears at the top of the browser window. It must be placed inside the head tag and should close immediately. (Optional)

**<body>:** Text between body tag describes the body content of the page that is visible to the end user. This tag contains the main content of the HTML document.

**<h1>**: Text between <h1> tag describes the first level heading of the webpage.

**<p>:** Text between <p> tag describes the paragraph of the webpage.

An HTML code that defines every structure on an HTML page, including the placement of text and images and hypertext links. HTML tags begin with the less-than (<) character and end with greater-than (>). These symbols are also called "angle brackets." The HTML (bottom) is the coding for the text paragraphs on this early Web page. All HTML tags are wrapped in less-than and greater-than symbols. HTML Assistant Pro is an HTML editor from Exit 0 Digital Systems. The <html> tag represents the root of an HTML document. The <html> tag is the container for all other HTML elements (except for the [<!DOCTYPE>](https://www.w3schools.com/tags/tag_doctype.asp) tag).

Note: You should always include the [lang](https://www.w3schools.com/tags/att_global_lang.asp)uage attribute inside the <html> tag, to declare the language of the Web page. This is meant to assist search engines and browsers.

HTML Elements are what make up HTML in general.

This is a list of the main Html element tags.

(There are more not included in this list.)

This is the edited version of upper post I have tried to add more tags

<! DOCTYPE> Defines the document type

<html> Defines the root of an HTML document </html>

<title> Defines a title for the document </title>

<header> Defines a header for a document or section </header>

<main> Specifies the main content of a document </main>

<footer> Defines a footer for a document or section </footer>

<p> Defines a paragraph </p>

<a> Defines a hyperlink </a>

<b> Defines bold text </b>

<br> Defines a single line break </br>

<button> Defines a clickable button </button>

<div> Defines a section in a document </div>

<footer> Defines a footer for a document or section </footer>

<h1> to <h6> Defines HTML headings </h1> to </h6>

<img> Defines an image </img>

<ol> Defines an ordered list </ol>

<ul> Defines an unordered list </ul>

<li> Defines a list item </li>

<script> Defines a client-side script </script>

<span> Defines a section in a document</span>

<table> Defines a table </table>

<td> Defines a cell in a table</td>

<th> Defines a header cell in a table </th>

<tr> Defines a row in a table </tr>

(<meta>//Meta tags are used for adding seo.

e.g.

<meta name="keywords" content="your, keywords, here">

<meta name="description" content="you page/website description here">

when u add google seo and then if someone searches something

which matches with the content he contents of keywords which you write

and the description which shows there will be the description which is written there.

<meta>)

<link>//link tag is basically used to attach CSS files to the html

e.g.

<link rel="stylesheet" type="text/css" href="yourplace/your.css">

<script>script tag is used for adding JavaScript to your website

it can be by writing the whole java script into it or attach other ones

</script>

e.g.

<script href="yourlocation/javascript.js"></script>

or

<script type="text/js">

alert ("I am a good boy");

</script>

**2.8 XHTML**

XHTML was developed to make HTML more extensible and flexible to work with other data formats (such as XML). In addition, browsers ignore errors in HTML pages,

and try to display the website even if it has some errors in the markup.

So, XHTML comes with a much stricter error handling

* XHTML stands for EXtensible HyperText Markup Language
* XHTML is a stricter, more XML-based version of HTML
* XHTML is HTML defined as an XML application
* XHTML is supported by all major browsers

XML is a markup language where all documents must be marked up correctly (be "well-formed"). XHTML was developed to make HTML more extensible and flexible to work with other data formats (such as XML). In addition, browsers ignore errors in HTML pages, and try to display the website even if it has some errors in the markup. So XHTML comes with a much stricter error handling.

## The Most Important Differences from HTML

* <! DOCTYPE> is **mandatory**
* The xmlns attribute in <html> is **mandatory**
* <html>, <head>, <title>, and <body> are **mandatory**
* Elements must always be properly nested
* Elements must always be closed
* Elements must always be in lowercase
* Attribute names must always be in lowercase
* Attribute values must always be quoted
* Attribute minimization is forbidden

Extensible Hypertext Markup Language (XHTML) is part of the family of [XML](https://en.wikipedia.org/wiki/XML) [markup languages](https://en.wikipedia.org/wiki/Markup_language). It mirrors or extends versions of the widely used [Hypertext Markup Language](https://en.wikipedia.org/wiki/HyperText_Markup_Language) (HTML), the language in which [Web pages](https://en.wikipedia.org/wiki/Web_page) are formulated. While HTML, prior to [HTML5](https://en.wikipedia.org/wiki/HTML5), was defined as an application of [Standard Generalized Markup Language](https://en.wikipedia.org/wiki/Standard_Generalized_Markup_Language) (SGML), a flexible markup language framework, XHTML is an application of [XML](https://en.wikipedia.org/wiki/XML), a more restrictive subset of SGML. XHTML documents are [well-formed](https://en.wikipedia.org/wiki/Well-formed_document) and may therefore be parsed using standard XML parsers, unlike HTML, which requires a lenient HTML-specific parser.[[1]](https://en.wikipedia.org/wiki/XHTML#cite_note-1)

XHTML 1.0 became a [World Wide Web Consortium (W3C)](https://en.wikipedia.org/wiki/World_Wide_Web_Consortium) [recommendation](https://en.wikipedia.org/wiki/W3C_recommendation) on January 26, 2000. XHTML 1.1 became a W3C recommendation on May 31, 2001. The standard known as XHTML5 is being developed as an XML adaptation of the HTML5 specification. Extensible Hypertext Markup Language (XHTML) is part of the family of [XML](https://en.wikipedia.org/wiki/XML) [markup languages](https://en.wikipedia.org/wiki/Markup_language). It mirrors or extends versions of the widely used [Hypertext Markup Language](https://en.wikipedia.org/wiki/HyperText_Markup_Language) (HTML), the language in which [Web pages](https://en.wikipedia.org/wiki/Web_page) are formulated. While HTML, prior to [HTML5](https://en.wikipedia.org/wiki/HTML5), was defined as an application of [Standard Generalized Markup Language](https://en.wikipedia.org/wiki/Standard_Generalized_Markup_Language) (SGML), a flexible markup language framework, XHTML is an application of [XML](https://en.wikipedia.org/wiki/XML), a more restrictive subset of SGML. XHTML documents are [well-formed](https://en.wikipedia.org/wiki/Well-formed_document) and may therefore be parsed using standard XML parsers, unlike HTML, which requires a lenient HTML-specific parser. XHTML 1.0 became a [World Wide Web Consortium (W3C)](https://en.wikipedia.org/wiki/World_Wide_Web_Consortium) [recommendation](https://en.wikipedia.org/wiki/W3C_recommendation) on January 26, 2000. XHTML 1.1 became a W3C recommendation on May 31, 2001. The standard known as XHTML5 is being developed as an XML adaptation of the HTML5 specification.

* 1. **Why use XHTML?**
* XHTML documents are validated with standard XML tools.
* It is easily to maintain, convert, edit document in the long run.
* It is used to define the quality standard of web pages.
* XHTML is an official standard of the W3C, your website becomes more compatible and accurate with many browsers.
  1. **Benefits of XHTML:**
* All XHTML tags must have closing tags and are nested correctly. This generates cleaner code.
* XHTML documents are lean which means they use less bandwidth. This reduces cost particularly if your web site has 1000s of pages.
* XHTML documents are well formatted well–formed and can easily be transported to wireless devices, Braille readers and other specialized web environments.
* All new developments will be in XML (of which XHTML is an application).
* XHTML works in association with CSS to create web pages that can easily be updated.

**2.9 CSS**

* CSS stands for Cascading Style Sheets
* CSS describes how HTML elements are to be displayed on screen, paper, or in other media
* CSS saves a lot of work. It can control the layout of multiple web pages all at once
* External stylesheets are stored in CSS files

CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.

## CSS Solved a Big Problem

HTML was created to describe the content of a web page, like:

<h1>This is a heading</h1> <p>This is a paragraph. </p>

When tags like <font>, and color attributes were added to the HTML 3.2 specification, it started a nightmare for web developers. Development of large websites, where fonts and color information were added to every single page, became a long and expensive process. To solve this problem, the World Wide Web Consortium (W3C) created CSS. CSS removed the style formatting from the HTML page. If you don't know what HTML is, we suggest that you read our [HTML Tutorial](https://www.w3schools.com/html/default.asp). CSS Saves a Lot of Work. The style definitions are normally saved in external .css files. With an external stylesheet file, you can change the look of an entire website by changing just one file.

Cascading Style Sheets (CSS) is a [style sheet language](https://en.wikipedia.org/wiki/Style_sheet_language) used for describing the [presentation](https://en.wikipedia.org/wiki/Presentation_semantics) of a document written in a [markup language](https://en.wikipedia.org/wiki/Markup_language) such as [HTML](https://en.wikipedia.org/wiki/HTML). CSS is a cornerstone technology of the [World Wide Web](https://en.wikipedia.org/wiki/World_Wide_Web), alongside HTML and [JavaScript](https://en.wikipedia.org/wiki/JavaScript).

CSS is designed to enable the separation of presentation and content, including [layout](https://en.wikipedia.org/wiki/Page_layout), [colors](https://en.wikipedia.org/wiki/Color), and [fonts](https://en.wikipedia.org/wiki/Typeface). This separation can improve content [accessibility](https://en.wikipedia.org/wiki/Accessibility), provide more flexibility and control in the specification of presentation characteristics, enable multiple [web pages](https://en.wikipedia.org/wiki/Web_page) to share formatting by specifying the relevant CSS in a separate .css file which reduces complexity and repetition in the structural content as well as enabling the .css file to be [cached](https://en.wikipedia.org/wiki/Cache_(computing)) to improve the page load speed between the pages that share the file and its formatting.

Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or [screen reader](https://en.wikipedia.org/wiki/Screen_reader)), and on [Braille-based](https://en.wikipedia.org/wiki/Braille_display) tactile devices. CSS also has rules for alternate formatting if the content is accessed on a [mobile device](https://en.wikipedia.org/wiki/Mobile_device). The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable. The CSS specifications are maintained by the [World Wide Web Consortium](https://en.wikipedia.org/wiki/World_Wide_Web_Consortium) (W3C). Internet media type ([MIME type](https://en.wikipedia.org/wiki/MIME_media_type)) text/css is registered for use with CSS by RFC 2318 (March 1998). The W3C operates a free [CSS validation service](https://en.wikipedia.org/wiki/W3C_Markup_Validation_Service#CSS_validation) for CSS documents. In addition to HTML, other markup languages support the use of CSS including [XHTML](https://en.wikipedia.org/wiki/XHTML), [plain XML](https://en.wikipedia.org/wiki/Plain_Old_XML), [SVG](https://en.wikipedia.org/wiki/Scalable_Vector_Graphics), and [XUL](https://en.wikipedia.org/wiki/XUL).

**2.10 JAVASCRIPT**

* JavaScript is the Programming Language for the Web.
* JavaScript can update and change both HTML and CSS.
* JavaScript can calculate, manipulate and validate data.

JavaScript is a scripting or programming language that allows you to implement complex features on web pages — every time a web page does more than just sit there and display static information for you to look at — displaying timely content updates, interactive maps, animated 2D/3D graphics, scrolling video jukeboxes, etc. — you can bet that JavaScript is probably involved. It is the third layer of the layer cake of standard web technologies, two of which ([HTML](https://developer.mozilla.org/en-US/docs/Learn/HTML) and [CSS](https://developer.mozilla.org/en-US/docs/Learn/CSS)) we have covered in much more detail in other parts of the Learning Area.

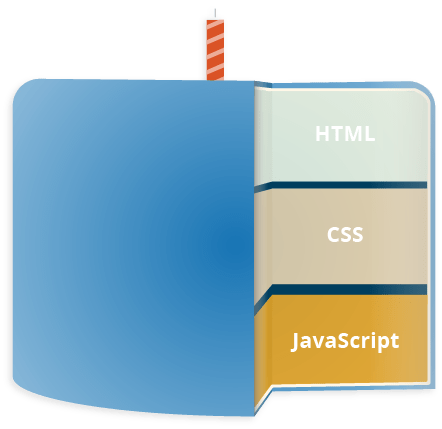


Fig 2.6: Layers of HTML, CSS and JS together form a smooth webpage

* [HTML](https://developer.mozilla.org/en-US/docs/Glossary/HTML) is the markup language that we use to structure and give meaning to our web content, for example defining paragraphs, headings, and data tables, or embedding images and videos in the page.
* [CSS](https://developer.mozilla.org/en-US/docs/Glossary/CSS) is a language of style rules that we use to apply styling to our HTML content, for example setting background colors and fonts, and laying out our content in multiple columns.
* [JavaScript](https://developer.mozilla.org/en-US/docs/Glossary/JavaScript) is a scripting language that enables you to create dynamically updating content, control multimedia, animate images, and pretty much everything else. (Okay, not everything, but it is amazing what you can achieve with a few lines of JavaScript code.)

JavaScript is a dynamic computer programming language. It is lightweight and most commonly used as a part of web pages, whose implementations allow client-side script to interact with the user and make dynamic pages. It is an interpreted programming language with object-oriented capabilities. JavaScript was first known as Live Script, but Netscape changed its name to JavaScript, possibly because of the excitement being generated by Java. JavaScript made its first appearance in Netscape 2.0 in 1995 with the name Live Script. The general-purpose core of the language has been embedded in Netscape, Internet Explorer, and other web browsers.

The [ECMA-262 Specification](http://www.ecma-international.org/publications/index.html) defined a standard version of the core JavaScript language.

* JavaScript is a lightweight, interpreted programming language.
* Designed for creating network-centric applications.
* Complementary to and integrated with Java.
* Complementary to and integrated with HTML.
* Open and cross-platform

## **Client-Side JavaScript**

Client-side JavaScript is the most common form of the language. The script should be included in or referenced by an HTML document for the code to be interpreted by the browser. It means that a web page need not be a static HTML, but can include programs that interact with the user, control the browser, and dynamically create HTML content.

The JavaScript client-side mechanism provides many advantages over traditional CGI server-side scripts. For example, you might use JavaScript to check if the user has entered a valid e-mail address in a form field. The JavaScript code is executed when the user submits the form, and only if all the entries are valid, they would be submitted to the Web Server. JavaScript can be used to trap user-initiated events such as button clicks, link navigation, and other actions that the user initiates explicitly or implicitly.

## **Advantages of JavaScript**

The merits of using JavaScript are −

* Less server interaction − You can validate user input before sending the page off to the server. This saves server traffic, which means less load on your server.
* Immediate feedback to the visitors − They don't have to wait for a page reload to see if they have forgotten to enter something.
* Increased interactivity − You can create interfaces that react when the user hovers over them with a mouse or activates them via the keyboard.
* Richer interfaces − You can use JavaScript to include such items as drag-and-drop components and sliders to give a Rich Interface to your site visitors.

## **Limitations of JavaScript**

We cannot treat JavaScript as a full-fledged programming language. It lacks the following important features −

* Client-side JavaScript does not allow the reading or writing of files. This has been kept for security reason.
* JavaScript cannot be used for networking applications because there is no such support available.
* JavaScript doesn't have any multi-threading or multiprocessor capabilities.

Once again, JavaScript is a lightweight, interpreted programming language that allows you to build interactivity into otherwise static HTML pages.

## **JavaScript Development Tools**

One of major strengths of JavaScript is that it does not require expensive development tools. You can start with a simple text editor such as Notepad. Since it is an interpreted language inside the context of a web browser, you don't even need to buy a compiler. To make our life simpler, various vendors have come up with very nice JavaScript editing tools. Some of them are listed here −

* Microsoft FrontPage − Microsoft has developed a popular HTML editor called FrontPage. FrontPage also provides web developers with a number of JavaScript tools to assist in the creation of interactive websites.
* Macromedia Dreamweaver MX − Macromedia Dreamweaver MX is a very popular HTML and JavaScript editor in the professional web development crowd. It provides several handy prebuilt JavaScript components, integrates well with databases, and conforms to new standards such as XHTML and XML.
* Macromedia HomeSite 5 − HomeSite 5 is a well-liked HTML and JavaScript editor from Macromedia that can be used to manage personal websites effectively.

## **Where is JavaScript Today?**

The ECMAScript Edition 5 standard will be the first update to be released in over four years. JavaScript 2.0 conforms to Edition 5 of the ECMAScript standard, and the difference between the two is extremely minor. Today, Netscape's JavaScript and Microsoft's JScript conform to the ECMAScript standard, although both the languages still support the features that are not a part of the standard. JavaScript often abbreviated as JS, is a [programming language](https://en.wikipedia.org/wiki/Programming_language) that conforms to the [ECMAScript](https://en.wikipedia.org/wiki/ECMAScript) specification. JavaScript is [high-level](https://en.wikipedia.org/wiki/High-level_programming_language), often [just-in-time compiled](https://en.wikipedia.org/wiki/Just-in-time_compilation), and [multi-paradigm](https://en.wikipedia.org/wiki/Programming_paradigm). It has [curly-bracket syntax](https://en.wikipedia.org/wiki/List_of_programming_languages_by_type#Curly-bracket_languages), [dynamic typing](https://en.wikipedia.org/wiki/Dynamic_typing), [prototype-based](https://en.wikipedia.org/wiki/Prototype-based_programming) [object-orientation](https://en.wikipedia.org/wiki/Object-oriented_programming), and [first-class functions](https://en.wikipedia.org/wiki/First-class_function).

Alongside [HTML](https://en.wikipedia.org/wiki/HTML) and [CSS](https://en.wikipedia.org/wiki/CSS), JavaScript is one of the core technologies of the [World Wide Web](https://en.wikipedia.org/wiki/World_Wide_Web). Over 97% of [websites](https://en.wikipedia.org/wiki/Website) use it [client-side](https://en.wikipedia.org/wiki/Client-side) for [web page](https://en.wikipedia.org/wiki/Web_page) behavior, often incorporating third-party [libraries](https://en.wikipedia.org/wiki/Library_(computing)). All major [web browsers](https://en.wikipedia.org/wiki/Web_browser) have a dedicated [JavaScript engine](https://en.wikipedia.org/wiki/JavaScript_engine) to execute the code on the [user](https://en.wikipedia.org/wiki/User_(computing))'s device. As a multi-paradigm language, JavaScript supports [event-driven](https://en.wikipedia.org/wiki/Event-driven_programming), [functional](https://en.wikipedia.org/wiki/Functional_programming), and [imperative](https://en.wikipedia.org/wiki/Imperative_programming) [programming styles](https://en.wikipedia.org/wiki/Programming_paradigm). It has [application programming interfaces](https://en.wikipedia.org/wiki/Application_programming_interface) (APIs) for working with text, dates, [regular expressions](https://en.wikipedia.org/wiki/Regular_expression), standard [data structures](https://en.wikipedia.org/wiki/Data_structure), and the [Document Object Model](https://en.wikipedia.org/wiki/Document_Object_Model) (DOM).

The ECMAScript standard does not include any [input/output](https://en.wikipedia.org/wiki/Input/output) (I/O), such as [networking](https://en.wikipedia.org/wiki/Computer_network), [storage](https://en.wikipedia.org/wiki/Data_storage), or [graphics](https://en.wikipedia.org/wiki/Computer_graphics) facilities. In practice, the web browser or other [runtime system](https://en.wikipedia.org/wiki/Runtime_system) provides JavaScript APIs for I/O. JavaScript engines were originally used only in web browsers, but they are now core components of [other](https://en.wikipedia.org/wiki/JavaScript#Other_usage) software systems, most notably [servers](https://en.wikipedia.org/wiki/Server_(computing)) and a variety of [applications](https://en.wikipedia.org/wiki/Application_software). Although there are similarities between JavaScript and [Java](https://en.wikipedia.org/wiki/Java_(programming_language)), including language name, [syntax](https://en.wikipedia.org/wiki/Syntax_(programming_languages)), and respective [standard libraries](https://en.wikipedia.org/wiki/Standard_library), the two languages are distinct and differ greatly in design.

**CHAPTER 3**

**REQUIREMENT SPECIFICATION**

**3.1 HARDWARE REQUIREMENTS**

* Processor : Any processor above 500MHz
* RAM : 512Mb
* Hard Disk : 10GB
* Input Device : Standard Keyboard and Mouse
* Output Device : High Resolution Monitor

**3.2 SOFTWARE REQUIREMENTS**

* Operating System : Windows 7/10 or Linux
* Programming Language : HTML, CSS, JS and MySQL
* Developing Environment : VS Code or any code text editor

**3.3 WEBSITE STRUCTURE DIAGRAM**

**CHAPTER 4**

**DESIGN**

**4.1 DESIGN GOALS**

To design an application, with an effectively efficient mechanism which takes in the start and end point on a two-dimensional grid where the black blocks represents the obstacles. Then finds the shortest path from start point to the end point and deploys it on the grid.

**Fig 4.1 Representation**

**4.2 ALGORITHM**

**CHAPTER 5**

**IMPLEMENTATION**

**5.1 IMPORT AND INSTANTIATION FUNCTIONALITY**

**5.2 CLASS FUNCTIONALITY**

**5.3 ALGORITHM FUNCTIONALITY**

**5.4 MAIN FUNCTIONALITY**

**CHAPTER 6**

**RESULTS**

**6.1 CODE DEMO SNAPSHOTS**

**1. Execution of the code**

**2. Feed Input**

**3. Output**

**CHAPTER 7**

**CONCLUSION**

**REFERENCES**

[1] https://www.programiz.com/

[2] https://www.geeksforgeeks.org/

[3] https://www.javatpoint.com/

[4] https://anzeljg.github.io/

[5] <https://www.tutorialspoint.com/>

[6] https://docs.python.org/

[7] https://realpython.com/

[8] https://www.edureka.co/

[9] <https://pythonprogramming.net/>

[10] https://www.tutorialsteacher.com/