

**A
Report
of
Industrial Training
On
FULL-STACK WEB DEVELOPMENT WITH
PYTHON (DJANGO)**

Submitted in partial fulfillment for the award of degree of

Bachelor of Technology

in

Computer Science & Engineering



Submitted By

NEERAJ SONI

21EJCCS154

Submitted to

MR. PRADEEPSHARMA

ASSISTANT PROFESSOR

Department of Computer Science & Engineering

Jaipur Engineering College & Research Centre

Jaipur, Rajasthan

CERTIFICATE


This is to certify that the industrial training entitled **Full Stack Web Development with Python** is the bonafide work carried out by **Neeraj Soni**, student of B.Tech. in Computer Science & Engineering at Jaipur Engineering College and Research Centre, during the year 2023-24 in partial fulfillment of the requirements for the award of the Degree of Bachelor of Technology in Computer Science & Engineering under my guidance.

Name of Guide: Mr. Pradeep Sharma

Designation: Assistant Professor

Place: Jaipur

Date: 09 December 2023


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VISION OF CSE DEPARTMENT

To become renowned Centre of excellence in computer science and engineering and make competent engineers & professionals with high ethical values prepared for lifelong learning.


MISSION OF CSE DEPARTMENT

1. To impart outcome-based education for emerging technologies in the field of computer science and engineering.
2. To provide opportunities for interaction between academia and industry.
3. To provide platform for lifelong learning by accepting the change in technologies
4. To develop aptitude of fulfilling social responsibilities.

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PROGRAM OUTCOMES (POs)

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and Computer Science & Engineering specialization to the solution of complex Computer Science & Engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex Computer Science and Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex Computer Science and Engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of Computer Science and Engineering experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex Computer Science Engineering activities with an understanding of the limitations.
- 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional Computer Science and Engineering practice.
- 7. Environment and sustainability:** Understand the impact of the professional Computer Science and Engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the Computer Science and Engineering practice.


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9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings in Computer Science and Engineering.

10. Communication: Communicate effectively on complex Computer Science and Engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the Computer Science and Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change in Computer Science and Engineering.

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PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

The PEOs of the B. Tech (CSE) program are:

1. To produce graduates who are able to apply computer engineering knowledge to provide turn-key IT solutions to national and international organizations.
2. To produce graduates with the necessary background and technical skills to work professionally in one or more of the areas like – IT solution design development and implementation consisting of system design, network design, software design and development, system implementation and management etc. Graduates would be able to provide solutions through logical and analytical thinking.
3. To able graduates to design embedded systems for industrial applications.
4. To inculcate in graduates’ effective communication skills and team work skills to enable them to work in multidisciplinary environment.
5. To prepare graduates for personal and professional success with commitment to their ethical and social responsibilities.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1	Ability to interpret and analyze network specific, cyber security issues, automation in real world environment.
PSO2	Ability to design and develop mobile and web-based applications under realistic constraints.

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COURSE OUTCOMES (COs)

On completion of Industrial Training Graduates will be able to-

- CO1: Generate the report based on the Projects carried out for demonstrating the ability to apply the knowledge of engineering field during training
- CO2: Demonstrate Competency in relevant engineering fields through problem identification, formulation and solution.

MAPPING: CO's & PO's

Subject Code	Cos	Program Outcomes (POs)											
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
3CS7-30 Industrial Training	CO-1	3	3	2	2	2	1	1	2	2	3	3	3
	CO-2	3	3	3	3	3	1	1	2	2	3	3	3

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It has been a great honour and privilege to undergo training at **UpFlairs Pvt. Ltd., Jaipur**. I am very grateful to **Mr. Fatah Gabrial** giving his valuable time and constructive guidance in preparing the report for training. It would not have been possible to complete this report in short period of time without their kind encouragement and valuable guidance.

I wish to express our deep sense of gratitude to our Industrial Training Guide **MR. PRADEEP SHARMA** Jaipur Engineering College and Research Centre, Jaipur for guiding us from the inception till the completion of the industrial training. We sincerely acknowledge him for giving his valuable guidance, support for literature survey, critical reviews and comments for our industrial training.

I would like to first of all express our thanks to **Mr. Arpit Agrawal** Director of JECRC, for providing us such a great infrastructure and environment for our overall development.


I express sincere thanks to **Dr. V. K. Chandna**, Principal of JECRC, for his kind cooperation and extendible support towards the completion of our industrial training.

Words are inadequate in offering our thanks to **Dr. Sanjay Gaur**, HOD of CSE department, for consistent encouragement and support for shaping our industrial training in the presentable form.

Also, our warm thanks to **Jaipur Engineering College and Research Centre**, who provided us this opportunity to carryout, this prestigious industrial training and enhance our learning in various technical fields.

NEERAJ SONI

21EJCCS154

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ABSTRACT

The “front-end languages” live in the browser. After you type an address into the address bar at the top and hit the enter/return key, my browser will receive at least an HTML file from the webserver. That file will likely tell the browser to request a CSS file and a JavaScript file as well (probably many more than one, but we’ll keep it simple). Each of these languages performs a separate but very important function and they work harmoniously together to determine how the web page is STRUCTURED (HTML), how it LOOKS (CSS), and how it FUNCTIONS (JavaScript). And keep in mind that my browser handles figuring out how to make these files into a functioning web page (not the server). Front-end web development is NOT design (you won’t be playing around in Photoshop or anything), but a front-end developer does apply the work of designers to the web page by translating their well- designed layouts into real code. The front-end developer stands between the designer on one end and the back-end developer on the other, translating the design into code and plugging the data from the back-end developer into the right spots. He or she must also handle all the possible interactions that the user may need to make with the page.

DESCRIPTION

Front-end web improvement is the act of changing over information to a graphical interface for the client to see and connect with information through computerized cooperation utilizing HTML, CSS. Front-end web improvement, otherwise called customer side advancement is the act of creating HTML, CSS, and JavaScript for a site or Web Application so a client can see and communicate with them straightforwardly. The test related to front end improvement is that the apparatuses and methods used to make the front finish of a site change always thus the engineer needs to continually know about how the field is creating.



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CHAPTER-1 INTRODUCTION

What is a full stack developer and what do they do?

Full stack developers must have knowledge of an entire [technology stack](#), i.e., the set of technologies that are used to build an end-to-end application quickly and efficiently. For example, if they want to build an application using the [MEAN stack](#), they should know how to work with [MongoDB](#), Express, Angular and Node.

Full stack developers should be able to judge whether the selected technologies are the right choice for their project during the early phases. Some responsibilities of a full stack developer are to:

- Help in choosing the right technologies for the project development and testing both on the front end and the back end.
- Write clean code across the stack by following the best practices of the tools used.
- Be up to date with the latest technologies and tools to make the best technology usage decisions.

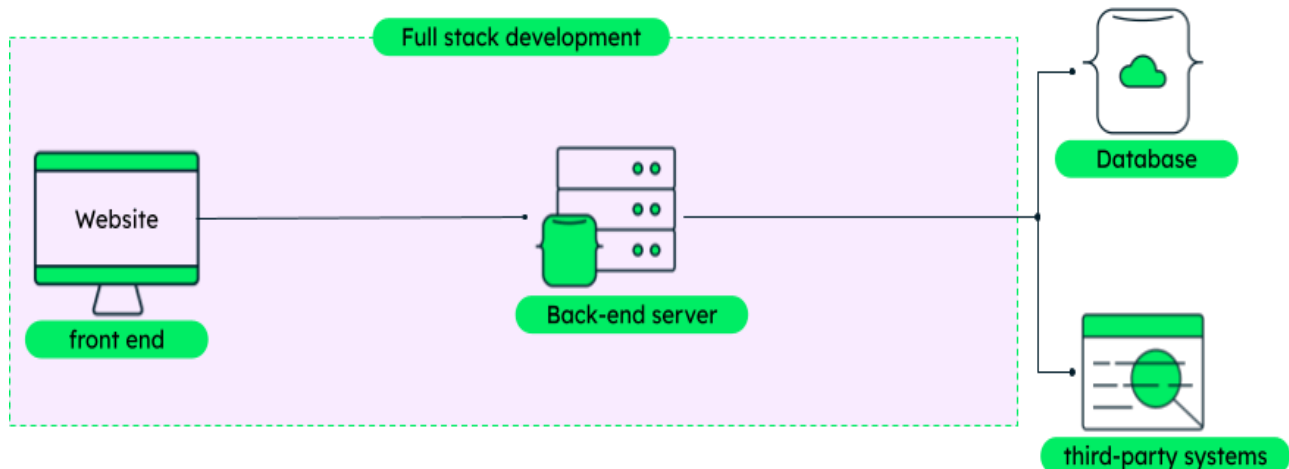
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What languages do full stack developers use?

Full stack developers are free to use any set of languages that are compatible with each other and the overall application framework. JavaScript is a popular language often used by full-stack developers as it's one of the very few languages that can be used both on the front end and back end. Companies will most likely hire a full stack developer for smaller or medium-size projects. Some popular languages are:

- Front end: HTML, CSS, JavaScript.
- Back end: Python, Java, R, Ruby, Node.js, PHP.

It's also a popular and convenient practice to use full technology stacks like [MEAN stack](#), [MERN stack](#), Ruby on Rails, and LAMP for faster and more efficient development, and an easier learning curve.



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WHAT IS A WEB PAGE?


A **web page** is a simple document displayable by a [browser](#). Such documents are written in the [HTML](#) language (which we look into in more detail in [other articles](#)). A web page can embed a variety of different types of resources such as:

- *style information* — controlling a page's look-and-feel
- *scripts* — which add interactivity to the page
- *media* — images, sounds, and videos.

Note: Browsers can also display other documents such as [PDF](#) files or images, but the term **web page** specifically refers to HTML documents. Otherwise, we only use the term **document**.

All web pages available on the web are reachable through a unique address. To access a page, just type its address in your browser address bar:

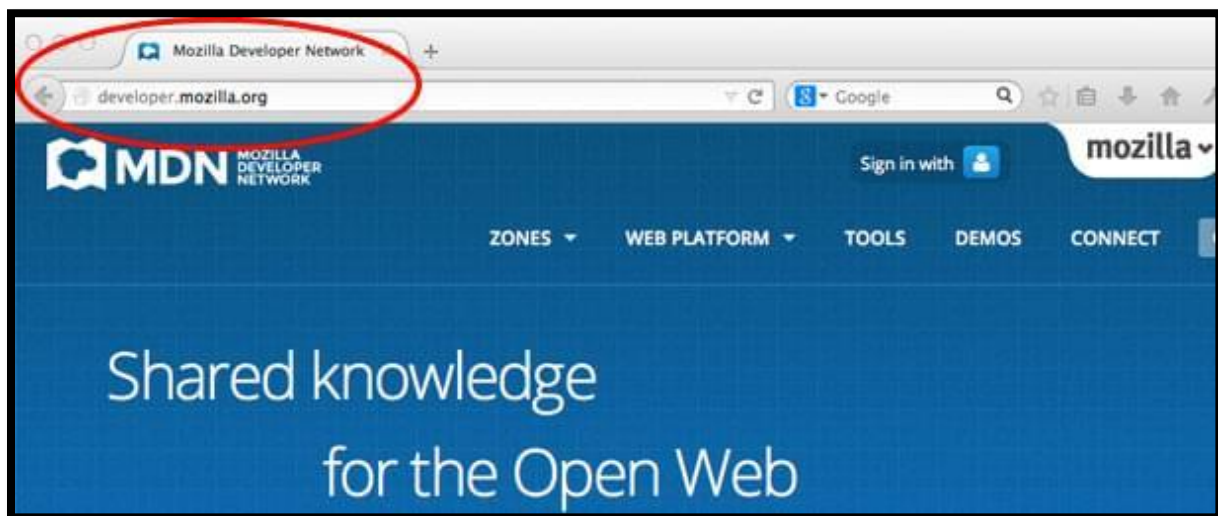


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WHAT IS A WEBSITE?

A *website* is a collection of linked web pages (plus their associated resources) that share a unique domain name. Each web page of a given website provides explicit links—most of the time in the form of clickable portions of text—that allow the user to move from one page of the website to another.

To access a website, type its domain name in your browser address bar, and the browser will display the website's main web page, or *homepage* (casually referred as "the home"):



The ideas of a *web page* and a *website* are especially easy to confuse for a *website* that contains only one *web page*. Such a website is sometimes called a *single-page website*.

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CHAPTER – 2 HTML (HYPERTEXT MARKUP LANGUAGE)

HTML (HyperText Markup Language) is the most basic building block of the Web. It defines the meaning and structure of web content. Other technologies besides HTML are generally used to describe a web page's appearance/presentation (CSS) or functionality/behavior (JavaScript).


HTML uses "markup" to annotate text, images, and other content for display in a Web browser. HTML markup includes special "elements" such as [`<head>`](#), [`<title>`](#), [`<body>`](#), [`<header>`](#), [`<footer>`](#), [`<article>`](#), [`<section>`](#), [`<p>`](#), [`<div>`](#), [``](#), [``](#), [`<aside>`](#), [`<audio>`](#), [`<canvas>`](#), [`<datalist>`](#), [`<details>`](#), [`<embed>`](#), [`<nav>`](#), [`<output>`](#), [`<progress>`](#), [`<video>`](#), [``](#), [``](#), [``](#) and many others.

HTML BASICS

HTML (**H**yper**T**ext **M**arkup **L**anguage) is the code that is used to structure a web page and its content. For example, content could be structured within a set of paragraphs, a list of bulleted points, or using images and data tables. As the title suggests, this article will give you a basic understanding of HTML and its functions.

SO, WHAT IS HTML?

HTML is a *markup language* that defines the structure of your content. HTML consists of a series of elements, which you use to enclose, or wrap, different parts of

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the content to make it appear a certain way, or act a certain way. The enclosing tags can make a word or image hyperlink to somewhere else, can italicize words, can make the font bigger or smaller, and so on. For example, take the following line of content:

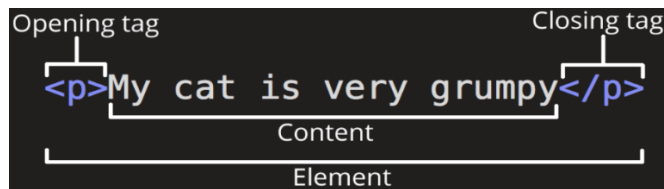
My cat is very grumpy

If we wanted the line to stand by itself, we could specify that it is a paragraph by enclosing it in paragraph tags:

```
<p>My cat is very grumpy</p>
```


ANATOMY OF AN HTML ELEMENT

Let's explore this paragraph element a bit further.



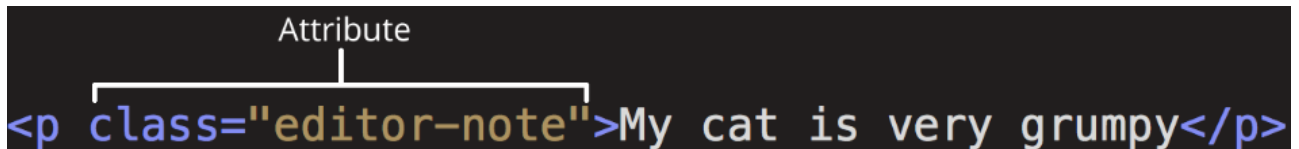
The main parts of our element are as follows:

1. **The opening tag:** This consists of the name of the element (in this case, p), wrapped in opening and closing **angle brackets**. This states where the element begins or starts to take effect — in this case where the paragraph begins.

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2. **The closing tag:** This is the same as the opening tag, except that it includes a *forward slash* before the element name. This states where the element ends — in this case where the paragraph ends. Failing to add a closing tag is one of the standard beginner errors and can lead to strange results.
3. **The content:** This is the content of the element, which in this case, is just text.
4. **The element:** The opening tag, the closing tag, and the content together comprise the element.

Elements can also have attributes that look like the following:




```
<p class="editor-note">My cat is very grumpy</p>
```

Attributes contain extra information about the element that you don't want to appear in the actual content. Here, class is the attribute *name* and editor-note are the attribute *value*.

The class attribute allows you to give the element a non-unique identifier that can be used to target it (and any other elements with the same class value) with style information and other things. Some attributes have no value, such as required.

Attributes that set a value always have:

1. A space between it and the element name (or the previous attribute, if the element already has one or more attributes).
2. The attribute name followed by an equal sign.
3. The attribute value wrapped by opening and closing quotation marks.

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NESTING ELEMENTS

You can put elements inside other elements too — this is called **nesting**. If we wanted to state that our cat is **very** grumpy, we could wrap the word "very" in a `` element, which means that the word is to be strongly emphasized:

```
<p>My cat is <strong>very</strong> grumpy.</p>
```

You do however need to make sure that your elements are properly nested. In the example above, we opened the `<p>` element first, then the `` element; therefore, we have to close the `` element first, then the `<p>` element. The following is incorrect:

```
<p>My cat is <strong>very grumpy.</p></strong>
```



The elements have to open and close correctly so that they are clearly inside or outside one another. If they overlap as shown above, then your web browser will try to make the best guess at what you were trying to say, which can lead to unexpected results. So don't do it!


VOID ELEMENTS

Some elements have no content and are called **void elements**. Take the `` element that we already have in our HTML page:

```

```



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This contains two attributes, but there is no closing `` tag and no inner content. This is because an image element doesn't wrap content to affect it. Its purpose is to embed an image in the HTML page in the place it appears.


ANATOMY OF AN HTML DOCUMENT

That wraps up the basics of individual HTML elements, but they aren't handy on their own. Now we'll look at how individual elements are combined to form an entire HTML page. Let's revisit the code we put into our index.html example (which we first met in the Dealing with files article):

```
<!DOCTYPE html>
<html lang="en-US">
  <head>
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width" />
    <title>My test page</title>
  </head>
  <body>
    
  </body>
</html>
```

Here, we have the following:

- `<!DOCTYPE html>` — [doctype](#). It is a required preamble. In the mists of time, when HTML was young (around 1991/92), doctypes were meant to act as links to a set of rules that the HTML page had to follow to be considered good HTML, which could mean automatic error checking and other useful things. However, these days, they don't do much and are basically just needed to make sure your document behaves correctly. That's all you need to know for now.

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- `<html></html>` — the [<html>](#) element. This element wraps all the content on the entire page and is sometimes known as the root element. It also includes the lang attribute, setting the primary language of the document.
- `<head></head>` — the [<head>](#) element. This element acts as a container for all the stuff you want to include on the HTML page that *isn't* the content you are showing to your page's viewers. This includes things like [keywords](#) and a page description that you want to appear in search results, CSS to style our content, character set declarations, and more.
- `<meta charset="utf-8">` — This element sets the character set your document should use to UTF-8 which includes most characters from the vast majority of written languages. Essentially, it can now handle any textual content you might put on it. There is no reason not to set this, and it can help avoid some problems later on.
- `<meta name="viewport" content="width=device-width">` — This [viewport element](#) ensures the page renders at the width of viewport, preventing mobile browsers from rendering pages wider than the viewport and then shrinking them down.
- `<title></title>` — the [<title>](#) element. This sets the title of your page, which is the title that appears in the browser tab the page is loaded in. It is also used to describe the page when you bookmark/favorite it.
- `<body></body>` — the [<body>](#) element. This contains *all* the content that you want to show to web users when they visit your page, whether that's text, images, videos, games, playable audio tracks, or whatever else.


IMAGES

Let's turn our attention to the [](#) element again:

```

```

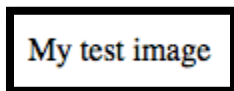


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As we said before, it embeds an image into our page in the position it appears. It does this via the src (source) attribute, which contains the path to our image file.

We have also included an alt (alternative) attribute. In the alt attribute, you specify descriptive text for users who cannot see the image, possibly because of the following reasons:

1. They are visually impaired. Users with significant visual impairments often use tools called screen readers to read out the alt text to them.
2. Something has gone wrong causing the image not to display. For example, try deliberately changing the path inside your src attribute to make it incorrect. If you save and reload the page, you should see something like this in place of the image:




The keywords for alt text are "descriptive text". The alt text you write should provide the reader with enough information to have a good idea of what the image conveys. In this example, our current text of "My test image" is no good at all. A much better alternative for our Firefox logo would be "The Firefox logo: a flaming fox surrounding the Earth."

MARKING UP TEXT

This section will cover some essential HTML elements you'll use for marking up the text.

HEADINGS

Heading elements allow you to specify that certain parts of your content are headings — or subheadings. In the same way that a book has the main title, chapter titles, and subtitles, an HTML document can too. HTML contains 6 heading levels, [<h1>](#) - [<h6>](#), although you'll commonly only use 3 to 4 at most:

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<!-- 4 heading levels: -->

<h1>My main title</h1>

<h2>My top-level heading</h2>

<h3>My subheading</h3>

<h4>My sub-subheading</h4>

Note: Anything in HTML between <!-- and --> is an **HTML comment**. The browser ignores comments as it renders the code. In other words, they are not visible on the page - just in the code. HTML comments are a way for you to write helpful notes about your code or logic.

Now try adding a suitable title to your HTML page just above your [](#) element.


Note: You'll see that your heading level 1 has an implicit style. Don't use heading elements to make text bigger or bold, because they are used for accessibility and other reasons such as SEO. Try to create a meaningful sequence of headings on your pages, without skipping levels.

PARAGRAPHS

As explained above, [<p>](#) elements are for containing paragraphs of text; you'll use these frequently when marking up regular text content:

<p>This is a single paragraph</p>

Add your sample text (you should have it from *What will your website look like?*) into one or a few paragraphs, placed directly below your [](#) element.

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LISTS

A lot of the web's content is lists and HTML has special elements for these. Marking up lists always consists of at least 2 elements. The most common list types are ordered and unordered lists:

1. **Unordered lists** are for lists where the order of the items doesn't matter, such as a shopping list. These are wrapped in a `` element.
2. **Ordered lists** are for lists where the order of the items does matter, such as a recipe. These are wrapped in an `` element.

Each item inside the lists is put inside an `` (list item) element.

LINKS

Links are very important — they are what makes the web a web! To add a link, we need to use a simple element — `<a>` — "a" being the short form for "anchor". To make text within your paragraph into a link, follow these steps:

1. Choose some text. We chose the text "Mozilla Manifesto".
2. Wrap the text in an `<a>` element, as shown below:


```
<a>Mozilla Manifesto</a>
```

3. Give the `<a>` element an href attribute, as shown below:

```
<a href="">Mozilla Manifesto</a>
```

4. Fill in the value of this attribute with the web address that you want the link to:

```
<a href="https://www.mozilla.org/en-US/about/manifesto/">Mozilla Manifesto</a>
```

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HTML5


FEATURES

- New Elements
- New Attributes
- Full CSS3 Support
- Video and Audio
- 2D/3D Graphics
- Local Storage
- Local SQL Database
- Web Applications



INTRODUCTION

HTML5 is a markup language for structuring and presenting content for the World Wide Web (Web Pages) and is a core technology of the Internet. It is the fifth version of the HTML (Hyper Text Markup Language) standard. Its core aims have been to improve the language with support for the latest multimedia while keeping it easily readable by human. and consistently understood by computers and devices (web browsers. parsers, etc.). HTML is intended to subsume not only HTML 4, but also XHTML and DOM Level 2 HTML. Following its immediate predecessors HTML 4.01 and XHTML 1.1, HTML5 is a response the observation that the HTML and XHTML in common use on the World Wide Web are mixture of features introduced by various specifications, along with those introduced by software products such as web browsers, those established by common practice, and the many syntax errors in existing web documents. It is also an attempt to define a single markup language that can be written in either HTML or XHTML syntax. It includes detailed processing models to encourage more interoperable implementations; it extends, improve and rationalizes the markup available for documents, and introduces markup and application programming interfaces (APIs) for complex web applications. For the same reasons,

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HTML5 is also a potential candidate for cross-platform mobile applications. Many features HTML5 have been built with the consideration of being able to run on low-powered device such as smartphones and tablets. In December 2011, research firm Strategy Analytic: forecast sales of HTML5 compatible phones will top 1 billion in 2013.

In particular, HTML5 adds many new syntactic features. These include the new <video>, <audio> and <canvas> elements, as well as the integration of scalable vector graphics (SVG) content (that replaces the uses of generic tags) and MathML for mathematical formulas. These features are designed to make it easy to include and handle multimedia and graphical content on the web without having to resort to proprietary plugins and APIs. Other new elements, such as <header> and are designed to enrich the semantic content of documents. New attributes have been introduced for the same purpose, while some elements and attributes have been removed. Some elements, such as have been changed, redefined or standardized. The APIs and <menu> Document Object Model (DOM) are no longer afterthoughts, but are fundamental parts of the HTML5 specification. HTML5 also defines in some detail the required processing for invalid documents so that syntax errors will be treated uniformly by all conforming browsers and other user agents. Why HTML? • In previous version HTML have some limitations. To cover them a new version of HTML was introduced that was known as HTML5. There are many features in HTML5 which will attract us in coming future. Now HTML5 have some benefits, some of them are: -

- 1. ACCESSIBILITY**
- 2. VIDEO AND AUDIO SUPPORT**
- 3. DOCTYPE**
- 4. CLEANER CODE**
- 5. SMARTER STORAGE**
- 6. BETTER INTERACTION**
- 7. GAME DEVELOPMENT**
- 8. CROSS BROWSER SUPPORT**



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Cheat Sheet [TAGS]

New [tags added in HTML5]

<article>	self-contained composition that is independently distributable	<details>	details of an element	<output>	represents results of calculation
<aside>	section of page that consists of content tangentially related to content around it	<embed>	embedded content	<progress>	progress of any kind of task
<audio>	sound content	<figcaption>	caption of figure element	<rp>	parenthesized ruby text
<bdi>	span of text to be isolated from surroundings for bidirectional formatting purposes	<figure>	group of media content	<rt>	ruby text
<canvas>	area that can be used to draw graphics via JavaScript	<footer>	footer for section or page	<ruby>	ruby annotations
<command>	user invokable command	<header>	header for section or page	<section>	section in a document
<datalist>	dropdown list	<hgroup>	group of headings for section	<source>	media resources
<datatemplate>	data template	<keygen>	generated key in a form	<summary>	header of a detail element
		<mark>	marked text	<time>	datetime
		<meter>	measurement in defined range	<video>	video
		<nav>	navigation links	<wbr>	possible line break

Old [unsupported tags]

<acronym>	acronym	<isindex>	provides searchable index related to current document
<applet>	applet	<dir>	directory list
<basefont>	base font	<noembed>	no embed section
<bgsound>	background sound	<noframes>	no frame section
<big>	big text	<s>	strikethrough text
<center>	centered text	<strike>	strikethrough text
<fn>	footnotes	<tt>	teletype text
	text font, size, and color	<u>	underlined text
<frame>	sub window	<xmp>	preformatted text
<frameset>	set of frames		


Existing [tags in HTML4 & 5]

<!--...-->	comment	<code>	code text	<html>	html document	<object>	embedded object	<sub>	subscripted text
<!doctype>	document type	<col>	attributes for columns	<i>	italic text		ordered list	<sup>	superscripted text
<a>	hyperlink	<colgroup>	groups of columns	<iframe>	inline sub window	<optgroup>	option group	<table>	table
<abbr>	abbreviation	<dd>	definition description		image	<option>	option in a drop-down list	<tbody>	table body
<address>	address element		deleted text	<input>	input field	<p>	paragraph	<td>	table cell
<area>	image map area	<div>	generic block-level element	<ins>	inserted text	<param>	parameter for an object	<textarea>	text area
	bold text	<dfn>	defining instance of a term	<kbd>	keyboard text	<pre>	preformatted object	<tfoot>	table footer
<base>	base URL for all links in page relative to document root	<dl>	definition list	<label>	label for a form control	<q>	short quotation	<th>	table header
<bdo>	text direction	<dt>	definition term	<legend>	title in a fieldset	<samp>	sample computer code	<thead>	wraps row containing table headers
<blockquote>	long quotation		emphasized text		list item	<script>	script	<title>	document title
<body>	body element	<fieldset>	logically group items in a form	<link>	resource reference	<select>	selectable list	<tr>	table row

	single line break	<form>	defines a form	<map>	image map	<small>	small text		unordered list
<button>	push button	<h1> to <h6>	header 1 to header 6	<menu>	menu list		inline generic container	<var>	variable
<caption>	table caption	<head>	document information	<meta>	meta information		strong text		
<cite>	citation	<hr>	horizontal rule	<noscript>	no script section	<style>	style definition		

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CHAPTER – 2 CSS: CASCADING STYLE SHEETS

Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS describes how elements should be rendered on screen, on paper, in speech, or on other media.

CSS is among the core languages of the **open web** and is standardized across Web browsers according to W3C specifications. Previously, the development of various parts of CSS specification was done synchronously, which allowed the versioning of the latest recommendations. You might have heard about CSS1, CSS2.1, or even CSS3. There will never be a CSS3 or a CSS4; rather, everything is now CSS without a version number.

After CSS 2.1, the scope of the specification increased significantly and the progress on different CSS modules started to differ so much, that it became more effective to develop and release recommendations separately per module. Instead of versioning the CSS specification, W3C now periodically takes a snapshot of the latest stable state of the CSS specification and individual modules progress. CSS modules now have version numbers, or levels, such as CSS Color Module Level 5.

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CSS BASICS

CSS (Cascading Style Sheets) is the code that styles web content. *CSS basics* walks through what you need to get started. We'll answer questions like: How do I make text red? How do I make content display at a certain location in the (webpage) layout? How do I decorate my webpage with background images and colors?

WHAT IS CSS?

Like HTML, CSS is not a programming language. It's not a markup language either. **CSS is a style sheet language.** CSS is what you use to selectively style HTML elements. For example, this CSS selects paragraph text, setting the color to red:

```
p {
  color: red;
}
```


Let's try it out! Using a text editor, paste the three lines of CSS (above) into a new file. Save the file as style.css in a directory named styles.

To make the code work, we still need to apply this CSS (above) to your HTML document. Otherwise, the styling won't change the appearance of the HTML. (If you haven't been following our project, pause here to read Dealing with files and HTML basics.)

1. Open your index.html file. Paste the following line in the head (between the <head> and </head> tags):

```
<link href="styles/style.css" rel="stylesheet" />
```

2. Save index.html and load it in your browser. You should see something like this:

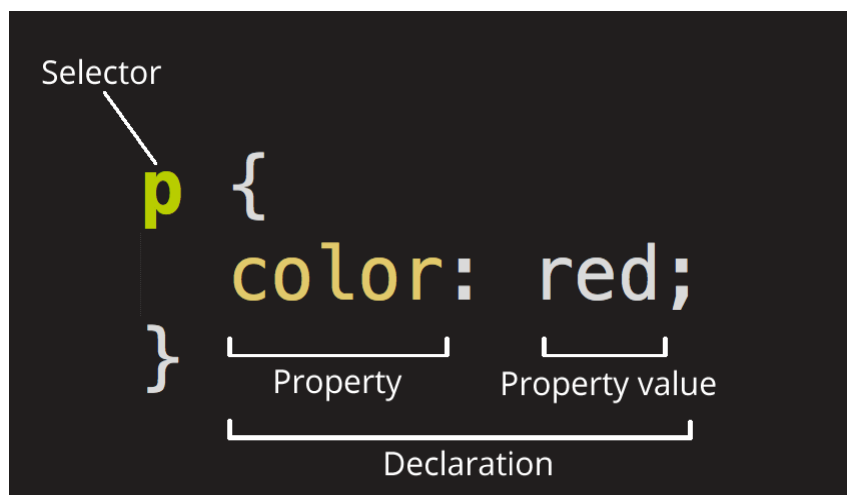
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If your paragraph text is red, congratulations! Your CSS is working.

ANATOMY OF A CSS RULESET: -

Let's dissect the CSS code for red paragraph text to understand how it works:



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The whole structure is called a **ruleset**. (The term *ruleset* is often referred to as just *rule*.) Note the names of the individual parts:

SELECTOR: -

This is the HTML element name at the start of the ruleset. It defines the element(s) to be styled (in this example, [<p>](#) elements). To style a different element, change the selector.

DECLARATION: -

This is a single rule like color: red; It specifies which of the element's **properties** you want to style.

PROPERTIES: -


These are ways in which you can style an HTML element. (In this example, color is a property of the [<p>](#) elements.) In CSS, you choose which properties you want to affect in the rule.

PROPERTY VALUE: -

To the right of the property—after the colon—there is the **property value**. This chooses one out of many possible appearances for a given property. (For example, there are many color values in addition to red.)

Note the other important parts of the syntax:

- Apart from the selector, each ruleset must be wrapped in curly braces. ({})
- Within each declaration, you must use a colon (:) to separate the property from its value or values.
- Within each ruleset, you must use a semicolon (;) to separate each declaration from the next one.

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To modify multiple property values in one ruleset, write them separated by semicolons, like this:

```
p {
  color: red;
  width: 500px;
  border: 1px solid black; }
```

SELECTING MULTIPLE ELEMENTS


You can also select multiple elements and apply a single ruleset to all of them. Separate multiple selectors by commas. For example:

```
p,
li,
h1 {
  color: red;
}
```

DIFFERENT TYPES OF SELECTORS

There are many different types of selectors. The examples above use **element selectors**, which select all elements of a given type. But we can make more specific selections as well. Here are some of the more common types of selectors:

Selector name	What does it select	Example
---------------	---------------------	---------


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Element selector (sometimes called a tag or type selector)	All HTML elements of the specified type.	p selects <p>
ID selector	The element on the page with the specified ID. On a given HTML page, each id value should be unique.	#my-id selects <p id="my-id"> or
Class selector	The element(s) on the page with the specified class. Multiple instances of the same class can appear on a page.	.my-class selects <p class="my-class"> and
Attribute selector	The element(s) on the page with the specified attribute.	img[src] selects but not
Pseudo-class selector	The specified element(s), but only when in the specified state. (For example, when a cursor hovers over a link.)	a:hover selects <a>, but only when the mouse pointer is hovering over the link.

FONTS AND TEXT

Now that we've explored some CSS fundamentals, let's improve the appearance of the example by adding more rules and information to the style.css file.

1. First, find the output from Google Fonts that you previously saved from What will your website look like?. Add the <link> element somewhere inside your index.html's head (anywhere between the <head> and </head> tags). It looks something like this:

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<link

href="https://fonts.googleapis.com/css?family=Open+Sans"

rel="stylesheet" />

This code links your page to a style sheet that loads the Open Sans font family with your webpage.

2. Next, delete the existing rule you have in your style.css file. It was a good test, but let's not continue with lots of red text.
3. Add the following lines (shown below), replacing the font-family assignment with your font-family selection from What will your website look like?. The property font-family refers to the font(s) you want to use for text. This rule defines a global base font and font size for the whole page. Since <html> is the parent element of the whole page, all elements inside it inherit the same font-size and font-family.


html {

font-size: 10px; /* px means "pixels": the base font size is now 10 pixels high */

font-family: "Open Sans", sans-serif; /* this should be the rest of the output you got from Google Fonts */

}

i **Note:** Anything in CSS between `/*` and `*/` is a **CSS comment**. The browser ignores comments as it renders the code. CSS comments are a way for you to write helpful notes about your code or logic.

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--	--	--

4. Now let's set font sizes for elements that will have text inside the HTML body (<h1>, , and <p>). We'll also center the heading. Finally, let's expand the second ruleset (below) with settings for line height and letter spacing to make body content more readable.

```
h1 {
  font-size: 60px;
  text-align: center;
}

p, li {
  font-size: 16px;
  line-height: 2;
  letter-spacing: 1px;
}
```

Adjust the px values as you like.


Your work-in-progress should look similar to this:

CSS: ALL ABOUT BOXES:

=

Something you'll notice about writing CSS: a lot of it is about boxes. This includes setting size, color, and position. Most HTML




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elements on your page can be thought of as boxes sitting on top of other boxes.



CSS layout is mostly based on the **box model**. Each box taking up space on your page has properties like:

- **padding**, the space around the content. In the example below, it is the space around the paragraph text.
- **border**, the solid line that is just outside the padding.
- **margin**, the space around the outside of the border.

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In this section we also use:

- **width** (of an element).
- **background-color**, the color behind an element's content and padding.
- **color**, the color of an element's content (usually text).
- **text-shadow** sets a drop shadow on the text inside an element.
- **display** sets the display mode of an element. (Keep reading to learn more)

To continue, let's add more CSS. Keep adding these new rules at the bottom of style.css.

Experiment with changing values to see what happens.

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CHANGING THE PAGE COLOR: -

```
html {
  background-color: #00539f;
}
```


This rule sets a background color for the entire page.

STYLING THE BODY: -

```
body {
  width: 600px;
  margin: 0 auto;
  background-color: #ff9500;
  padding: 0 20px 20px 20px;
  border: 5px solid black;
}
```

There are several declarations for the `<body>` element. Let's go through these line-by-line:

- **width: 600px;** This forces the body to always be 600 pixels wide.
- **margin: 0 auto;** When you set two values on a property like margin or padding, the first value affects the element's top *and* bottom side (setting it to 0 in this case); the second value affects the left *and* right side. (Here, auto is a special value that divides the available horizontal space evenly between left and right). You can also use one, two, three, or four values, as documented in [Margin Syntax](#).
- **background-color: #FF9500;** This sets the element's background color. This project uses a reddish orange for the body background color, as opposed to dark blue for the `<html>` element. (Feel free to experiment.)
- **padding: 0 20px 20px 20px;** This sets four values for padding. The goal is to put some space around the content. In this example, there is no padding on the top of the body, and 20

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pixels on the right, bottom and left. The values set top, right, bottom, left, in that order. As with margin, you can use one, two, three, or four values, as documented in [Padding Syntax](#).

- **border: 5px solid black;** This sets values for the width, style and color of the border. In this case, it's a five-pixel-wide, solid black border, on all sides of the body.

POSITIONING AND STYLING THE MAIN PAGE TITLE: -

```
h1 {
  margin: 0;
  padding: 20px 0;
  color: #00539f;
  text-shadow: 3px 3px 1px black;
}
```


You may have noticed there's a horrible gap at the top of the body. That happens because browsers apply default styling to the `<h1>` element (among others). That might seem like a bad idea, but the intent is to provide basic readability for unstyled pages. To eliminate the gap, we overwrite the browser's default styling with the setting **margin: 0;**

Next, we set the heading's top and bottom padding to 20 pixels.

Following that, we set the heading text to be the same color as the HTML background color.

Finally, **text-shadow** applies a shadow to the text content of the element. Its four values are:

- The first pixel value sets the **horizontal offset** of the shadow from the text: how far it moves across.

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- The second pixel value sets the **vertical offset** of the shadow from the text: how far it moves down.
- The third pixel value sets the **blur radius** of the shadow. A larger value produces a more fuzzy-looking shadow.
- The fourth value sets the base color of the shadow.

CENTERING THE IMAGE: -


```
img {
  display: block;
  margin: 0 auto; }
```

Next, we center the image to make it look better. We could use the **margin: 0 auto** trick again as we did for the body. But there are differences that require an additional setting to make the CSS work.

The **<body>** is a **block** element, meaning it takes up space on the page. The margin applied to a block element will be respected by other elements on the page. In contrast, images are **inline** elements, for the auto margin trick to work on this image, we must give it block-level behavior using **display: block;**

If you followed all the instructions in this article, you should have a page that looks similar to this :



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CHAPTER – 4 JAVASCRIPT

JavaScript, often abbreviated as **JS**, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS. As of 2022, 98% of websites use JavaScript on the client side for webpage behavior, often incorporating third-party libraries. All major web browsers have a dedicated JavaScript engine to execute the code on users' devices.


JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard.^[10] It has dynamic typing, prototype-based object-orientation, and first-class functions. It is multi-paradigm, supporting event-driven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM).



The ECMAScript standard does not include any input/output (I/O), such as networking, storage, or graphics facilities. In practice, the web browser or other runtime system provides JavaScript APIs for I/O.

JavaScript engines were originally used only in web browsers, but are now core components of some servers and a variety of applications. The most popular runtime system for this usage is Node.js.

Although Java and JavaScript are similar in name, syntax, and respective standard libraries, the two languages are distinct and differ greatly in design.

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JAVASCRIPT BASICS

JavaScript is a programming language that adds interactivity to your website. This happens in games, in the behavior of responses when buttons are pressed or with data entry on forms; with dynamic styling; with animation, etc. This article helps you get started with JavaScript and furthers your understanding of what is possible.

What is JavaScript?


JavaScript is a powerful programming language that can add interactivity to a website. It was invented by Brendan Eich.

JavaScript is versatile and beginner-friendly. With more experience, you'll be able to create games, animated 2D and 3D graphics, comprehensive database-driven apps, and much more!

JavaScript itself is relatively compact, yet very flexible. Developers have written a variety of tools on top of the core JavaScript language, unlocking a vast amount of functionality with minimum effort. These include:

- Browser Application Programming Interfaces (APIs) built into web browsers, providing functionality such as dynamically creating HTML and setting CSS styles; collecting and manipulating a video stream from a user's webcam, or generating 3D graphics and audio samples.
- Third-party APIs that allow developers to incorporate functionality in sites from other content providers, such as Twitter or Facebook.
- Third-party frameworks and libraries that you can apply to HTML to accelerate the work of building sites and applications.

It's outside the scope of this article—as a light introduction to JavaScript—to present the details of how the core JavaScript language is different from the tools listed above. You can learn more in MDN's JavaScript learning area, as well as in other parts of MDN. The section below

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introduces some aspects of the core language and offers an opportunity to play with a few browsers API features too. Have fun!

A "HELLO WORLD!" EXAMPLE:-

JavaScript is one of the most popular modern web technologies! As your JavaScript skills grow, your websites will enter a new dimension of power and creativity.

However, getting comfortable with JavaScript is more challenging than getting comfortable with HTML and CSS. You may have to start small, and progress gradually. To begin, let's examine how to add JavaScript to your page for creating a *Hello world!* example. (*Hello world!* is the standard for introductory programming examples.)

1. Go to your test site and create a new folder named **scripts**. Within the scripts folder, create a new text document called **main.js**, and save it.
2. In your **index.html** file, enter this code on a new line, just before the closing **</body>** tag:

```
<script src="scripts/main.js"></script>
```


3. This is doing the same job as the **<link>** element for CSS. It applies the JavaScript to the page, so it can have an effect on the HTML (along with the CSS, and anything else on the page).

4. Add this code to the **main.js** file:

```
const myHeading = document.querySelector("h1");
```

```
myHeading.textContent = "Hello world!";
```

5. Make sure the HTML and JavaScript files are saved. Then load index.html in your browser. You should see something like this:

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VARIABLES: -

Variables are containers that store values. You start by declaring a variable with the let keyword, followed by the name you give to the variable:

let myVariable;

A semicolon at the end of a line indicates where a statement ends. It is only required when you need to separate statements on a single line. However, some people believe it's good practice to have semicolons at the end of each statement

JavaScript is case sensitive. This means **myVariable** is not the same as **myvariable**. If you have problems in your code, check the case!


After declaring a variable, you can give it a value:

myVariable = "Bob";


Also, you can do both these operations on the same line:

let myVariable = "Bob";

Note that variables may hold values that have different data types:

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Variable	Explanation	Example
<u>String</u>	This is a sequence of text known as a string. To signify that the value is a string, enclose it in single quote marks.	<i>let myVariable = 'Bob';</i>
<u>Number</u>	This is a number. Numbers don't have quotes around them.	<i>let myVariable = 10;</i>
<u>Boolean</u>	This is a True/False value. The words true and false are special keywords that don't need quote marks.	<i>let myVariable = true;</i>
<u>Array</u>	This is a structure that allows you to store multiple values in a single reference.	<i>let myVariable =</i> <i>[1, 'Bob', 'Steve', 10];</i> <i>Refer to each member of the array</i> <i>like this:</i> <i>myVariable[0], myVariable[1], etc.</i>

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<u>Object</u>	This can be anything. Everything in JavaScript is an object and can be stored in a variable. Keep this in mind as you learn.	<pre>let myVariable = document.querySelector('h1'); All of the above examples too.</pre>
----------------------	--	--

So why do we need variables? Variables are necessary to do anything interesting in programming.

If values couldn't change, then you couldn't do anything dynamic, like personalize a greeting message or change an image displayed in an image gallery.

COMMENTS: -

Comments are snippets of text that can be added along with code. The browser ignores text marked as comments. You can write comments in JavaScript just as you can in CSS:

```
/*
```

Everything in between is a comment.


```
*/
```

If your comment contains no line breaks, it's an option to put it behind two slashes like this:


```
// This is a comment
```

OPERATORS: -

An **operator** is a mathematical symbol that produces a result based on two values (or variables). In the following table, you can see some of the simplest operators, along with some examples to try in the JavaScript console.

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Operator	Explanations	Symbols(s)	Example
Addition	Add two numbers together or combine two strings.	+	$6 + 9;$ <code>'Hello ' + 'world!';</code>
Subtraction, Division, Multiplication	These do what you'd expect them to do in basic math.	-, *, /	$9 - 3;$ $8 * 2;$ // multiply in JS is an asterisk $9 / 3;$
Assignment	As you've seen already: this assigns a value to a variable.	=	<code>let myVariable = 'Bob';</code>
Strict equality	This performs a test to see if two values are equal. It returns a true/false (Boolean) result.	===	<code>let myVariable = 3;</code> <code>myVariable === 4;</code>
Not, Does-not-equal	<p>This returns the logically opposite value of what it precedes. It turns a true into a false, etc..</p> <p>When it is used alongside the Equality operator, the negation operator tests whether two values are <i>not</i> equal.</p>	!, !==	<p>For "Not", the basic expression is true, but the comparison returns false because we negate it:</p> <code>let myVariable = 3;</code> <code>!(myVariable === 3);</code> <p>"Does-not-equal" gives basically the same result with different syntax. Here we are testing "is myVariable NOT equal to 3". This returns false because myVariable IS equal to 3:</p> <code>let myVariable = 3;</code>


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BOOTSTRAP

Bootstrap is a free and open-source collection of CSS and JavaScript/jQuery code used for creating dynamic websites layout and web applications. Bootstrap is one of the most popular front-end frameworks which has a nice set of predefined CSS codes. Bootstrap uses different types of classes to make responsive websites. Bootstrap 5 is the newest version of Bootstrap, which is the most popular HTML, CSS, and JavaScript framework for creating responsive, mobile-first websites. It was officially released on 16 June 2020 after several months of redefining its features.

What's new in Bootstrap 5?

1. **jQuery Support:** In Bootstrap 5, there is no need for jQuery library anymore that makes it easier to use. You can simply use Bootstrap without it.
2. **CSS custom properties:** Bootstrap 5's generated CSS has about two dozen CSS custom properties, with dozens more on the pipeline for greater component customisation.
3. **Improved Grid System:** The grid system in Bootstrap 5 layouts and aligns information using a sequence of containers, rows, and columns. It is entirely responsive and developed with flexbox.
4. **Improved Documentation:** More information has been added to the documentation, particularly when it comes to customisation. Bootstrap 5 has a fresh look, as well as improved customization options.
5. **Improved form Controls:** In Bootstrap 5, all custom form controls are now customised. All radio buttons, checkboxes, files, ranges, and other controls have the same appearance and behaviour across browsers.
6. **Bootstrap 5 Adds Utilities API:** In Bootstrap 5, they've gone with an API approach with a new Sass language and syntax. This gives you the ability to build new utilities while also allowing you to remove or change the defaults.


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7. **New Bootstrap Icon Library:** With almost 1,300 icons, Bootstrap now has its own open source SVG icon collection. Although it was created specifically for the framework's components, you can use it on any project.

What has been dropped?

1. **Color utility classes**(For example, `.bg-primary`) are used instead of Badge color classes(for example, `badge primary`).
2. The **.rounded-pill** class is introduced to give a pill style to a badge instead of using the **.badge-pill** badge class.
3. Display Utility Classes like **.d-block** has replaced **.btn-block button class**.
4. The jumbotron component has been dropped as the same results can be achieved using utility classes.
5. Popper's configuration is used instead of the flip option for dropdown components.
6. Media Components have been dropped as the same results can be achieved using utility classes.
7. **.pre-scrollable** has been dropped owing to less usage.
8. **.text-justify** has been dropped owing to responsiveness issues.
9. Support for IE has been completely dropped.

Bootstrap 5 CDN: You can import Bootstrap 5 from a CDN (Content Delivery Network), in case you don't want to install yourself. You can get CDN support for Bootstrap's CSS and JavaScript.

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DATABASES IN WEB DEVELOPMENT

Databases are foundational components in web development, serving as repositories for storing, managing, and retrieving data. They play a critical role in building dynamic and datadriven web applications. In this comprehensive overview, we will delve into the usage, types, advantages, and disadvantages of databases in web development, accompanied by relevant images and diagrams.

Introduction to Databases:

In the realm of web development, a database is a structured collection of data organized for efficient retrieval and manipulation. It acts as a central storage system for web applications, enabling the persistence of information such as user data, content, and application configurations.

Types of Databases:

a. **Relational Databases:** Relational databases, like MySQL, PostgreSQL, and SQLite, organize data into tables with predefined relationships. These databases use SQL (Structured Query Language) for querying and managing data.

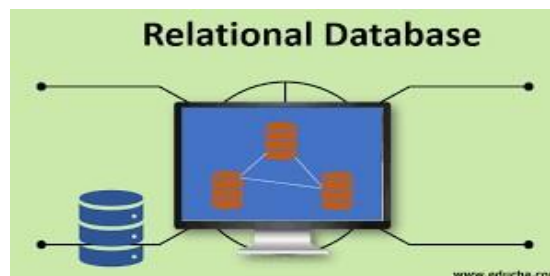



Figure 7.1: Relational Database Structure

Advantages:

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- Ensures data integrity through relationships.
- Facilitates complex queries using SQL.
- ACID properties (Atomicity, Consistency, Isolation, Durability) ensure transaction reliability.

Disadvantages:

- Scaling can be challenging.
- Schema modifications can be cumbersome.

b. **NoSQL Databases:** NoSQL databases, such as MongoDB, Cassandra, and Redis, adopt a schema-less approach and store data in various formats like JSON or XML. They are suitable for handling large amounts of unstructured or semi-structured data.

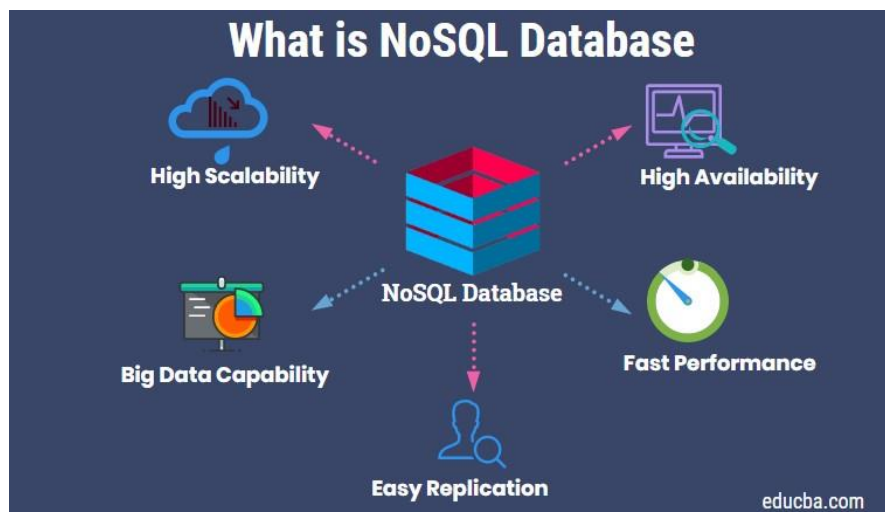



Figure 7.2: NoSQL Database Structure

Advantages:

- Flexible schema for dynamic data.
- Scalability, especially for large datasets.
- Better performance for certain use cases.

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Disadvantages:

- Lack of standardized query language.
- May sacrifice ACID properties for performance gains.

c. Graph Databases: Graph databases, like Neo4j, are designed for managing interconnected data with nodes and edges. They excel in scenarios where relationships between data points are crucial.

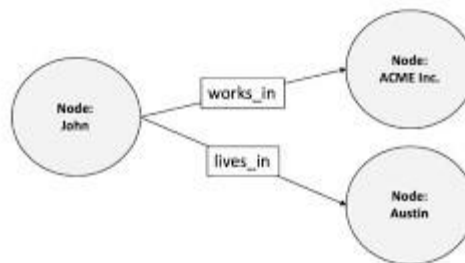


Figure 7.3: Graph Database Structure

Advantages:

- Efficient for relationship-centric data.
- Easily represents complex networks.
- Supports traversing relationships for querying.

Disadvantages:

- Not optimal for certain types of queries.
- May not be the best fit for non-relational data.

Usage of Databases in Web Development:

- a. **User Authentication and Authorization:** Databases store user information, such as usernames and encrypted passwords, enabling secure authentication. Authorization checks are often performed against user roles and permissions stored in the database.

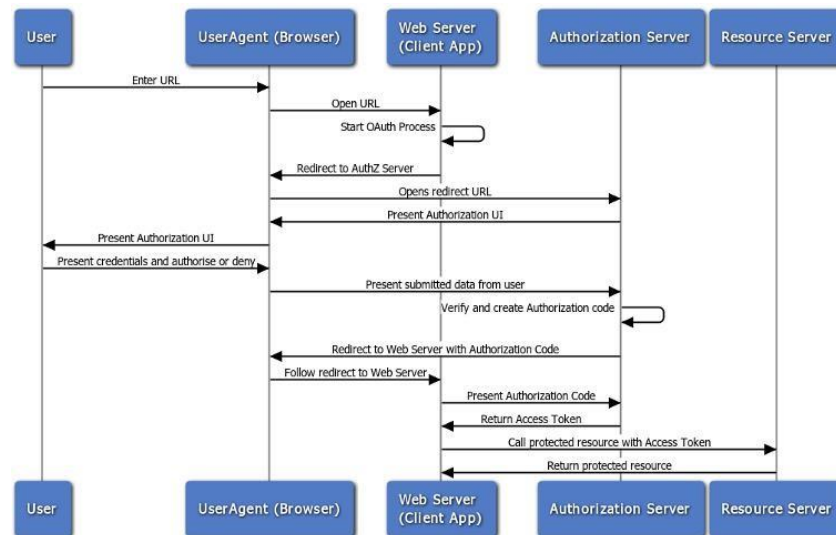


Figure 7.4: User Authentication Flow

- b. **Content Management:** Web applications often rely on databases to manage content, including articles, images, and multimedia. Content is stored, retrieved, and updated from the database dynamically.

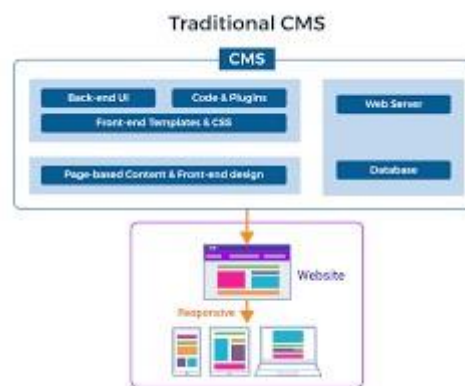



Figure 7.5: Content Management System Architecture

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- c. E-commerce Transactions: In e-commerce applications, databases handle product information, user orders, and transaction details. ACID properties ensure the reliability of financial transactions.

Advantages of Using Databases in Web Development:

- a. Data Persistence: Databases provide a reliable and structured way to persistently store data, ensuring it survives server restarts or application updates.
- b. Efficient Data Retrieval: With indexing and optimization, databases enable quick and efficient retrieval of specific data, reducing response times for web applications.
- c. Data Integrity: Relational databases enforce relationships and constraints, ensuring data integrity and preventing inconsistencies.
- d. Scalability: Databases can scale vertically (adding more resources to a single server) or horizontally (adding more servers) to handle increased loads and data volumes.

Disadvantages and Challenges:

- a. Scaling Challenges: Scaling relational databases can be complex, especially when dealing with large datasets or high transaction volumes.
- b. Schema Changes: Modifying the schema of a relational database can be challenging and may require downtime or careful planning.
- c. Complexity of Queries: Writing and optimizing complex SQL queries can be intricate, and mismanagement may lead to performance issues.


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REQUIREMENT ANALYSIS

HARDWARE REQUIREMENT

SYSTEM REQUIREMENTS: -

	Windows requirements	Mac requirements	Linux requirements
Operating system	Windows 8 or later	macOS High Sierra 10.13 or later	64-bit Ubuntu 14.04+, Debian 8+, openSUSE 13.3+, or Fedora Linux 24+
Processor	Intel Pentium 4 or later	Intel	Intel Pentium 4 or later
Memory	2 GB minimum, 4 GB recommended		
Screen resolution	1280x1024 or larger		
Application window size	1024x680 or larger		
Internet connection	Required		

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SOFTWARE REQUIREMENTS

1. CHROME DEVTOOLS: -

Chrome DevTools is a widely used web development tool that allows you to edit web pages directly from the Google Chrome browser and diagnose problems rapidly to build better websites. With the help of Chrome DevTools, you can easily edit your HTML & CSS code or debug JavaScript code in a real-time environment. It offers you numerous additional prominent advantages such as using ‘Timeline’ you can conveniently recognize run-time performance problems, the ‘Device Mode’ can help you test the responsiveness of the website, ‘Sources Panel’ can be used to debug the JavaScript using breakpoints, the ‘Network Panel’ allows you to view and debug network activity, and many more.

OPEN DEVTOOLS: -

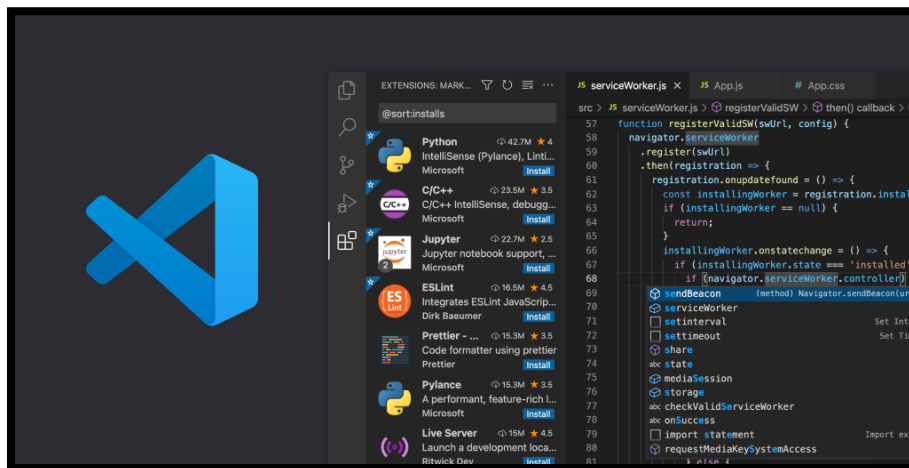
There are many ways to open DevTools, because different users want quick access to different parts of the DevTools UI.

- When you want to work with the DOM or CSS, right-click an element on the page and select **Inspect** to jump into the **Elements** panel. Or press Command+Option+C (Mac) or Control+Shift+C (Windows, Linux, ChromeOS).
- When you want to see logged messages or run JavaScript, press Command+Option+J (Mac) or Control+Shift+J (Windows, Linux, ChromeOS) to jump straight into the **Console** panel.




3. VISUAL STUDIO CODE: -

A better code editor is a fundamental requirement of front-end developers – and with a similar concern, here we’re mentioning one of the most recommended code editors for you i.e., Visual Studio Code. This open-source code editor by Microsoft leverages you with numerous remarkable features such as syntax highlighting, smart code completion, built-in debugger, built-in Git commands, easier deployment capabilities, and many others. In addition, it is available for Windows, macOS, and Linux as well – also, Visual Code Studio provides you with built-in support for JavaScript, TypeScript & Node.js and other languages such as C++, Java, Python, PHP, etc. can also be supported using extensions. You’re strongly recommended to give it a try to Visual Studio Code, especially if you’re a beginner front-end developer.



INSTALLATION: -

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1. Download the Visual Studio Code installer for Windows.
2. Once it is downloaded, run the installer (VSCodeUserSetup-{version}.exe). This will only take a minute.
3. By default, VS Code is installed
under `C:\Users\{Username}\AppData\Local\Programs\Microsoft VS Code`.

Alternatively, you can also download a Zip archive, extract it and run Code from there.

3. GIT: -

Another tool that comes in this list is a popular version control system – Git. It allows you to manage the source codes, track the changes that you’ve made in your code or even roll back to the previous state in a much convenient way. It saves every change and allows all the developers in the team to work on the same code at the same time without any hassle. It makes the collaboration among developers smoother by reducing the risk of situations like code conflict, etc. Meanwhile, Git is free to use, open-source, and very much secure – what else you need to get started with the enriching tool for front-end web development.



```
AshwinPC@Ashwin MINGW64 ~/Desktop/try (master)
$ git checkout -b ashwin
Switched to a new branch 'ashwin'

AshwinPC@Ashwin MINGW64 ~/Desktop/try (ashwin)
$ git branch -a

AshwinPC@Ashwin MINGW64 ~/Desktop/try (ashwin)
$ git checkout -b anil
Switched to a new branch 'anil'

AshwinPC@Ashwin MINGW64 ~/Desktop/try (anil)
$ git checkout ashwin
error: pathspec 'ashwin' did not match any file(s) known to git.


AshwinPC@Ashwin MINGW64 ~/Desktop/try (anil)
$ git checkout -b ashwin
Switched to a new branch 'ashwin'

AshwinPC@Ashwin MINGW64 ~/Desktop/try (ashwin)
$ git branch -a

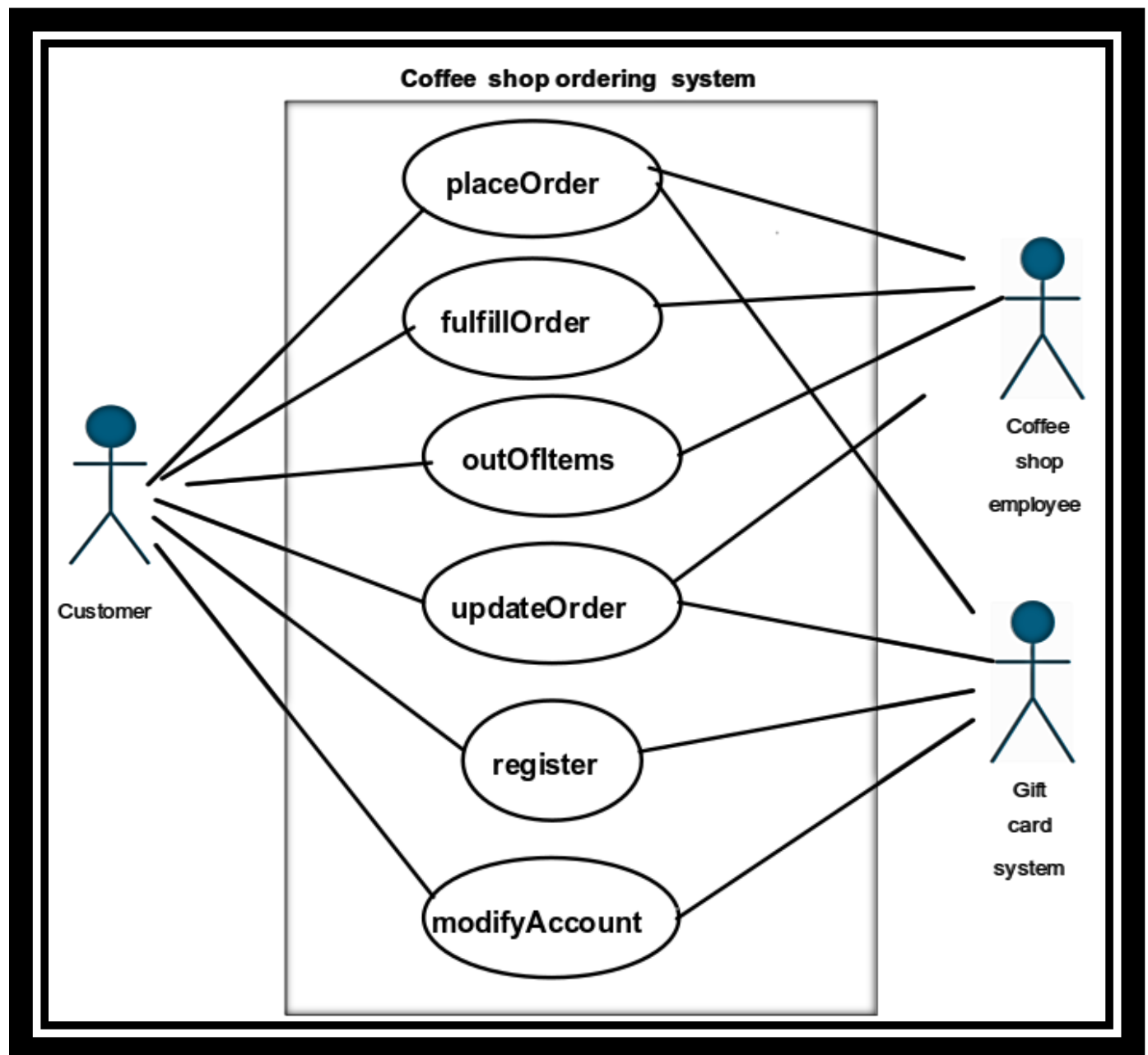
AshwinPC@Ashwin MINGW64 ~/Desktop/try (ashwin)
$ git branch -r

AshwinPC@Ashwin MINGW64 ~/Desktop/try (ashwin)
$ git branch -l

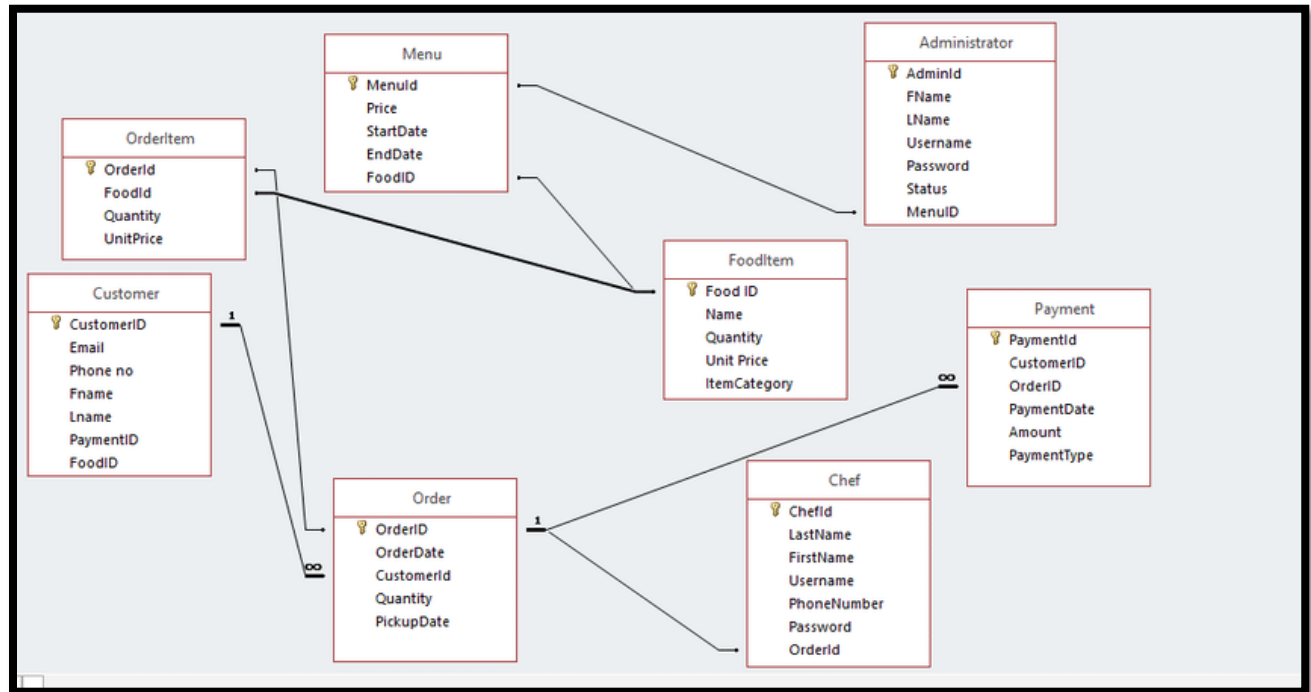
AshwinPC@Ashwin MINGW64 ~/Desktop/try (ashwin)
$ git branch
```

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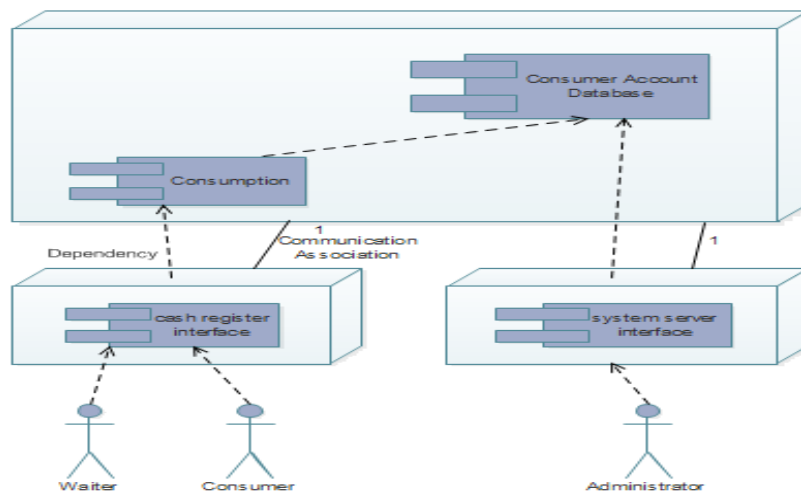
USE CASE DIAGRAM: -




DATABASE DESIGN DIAGRAM: -

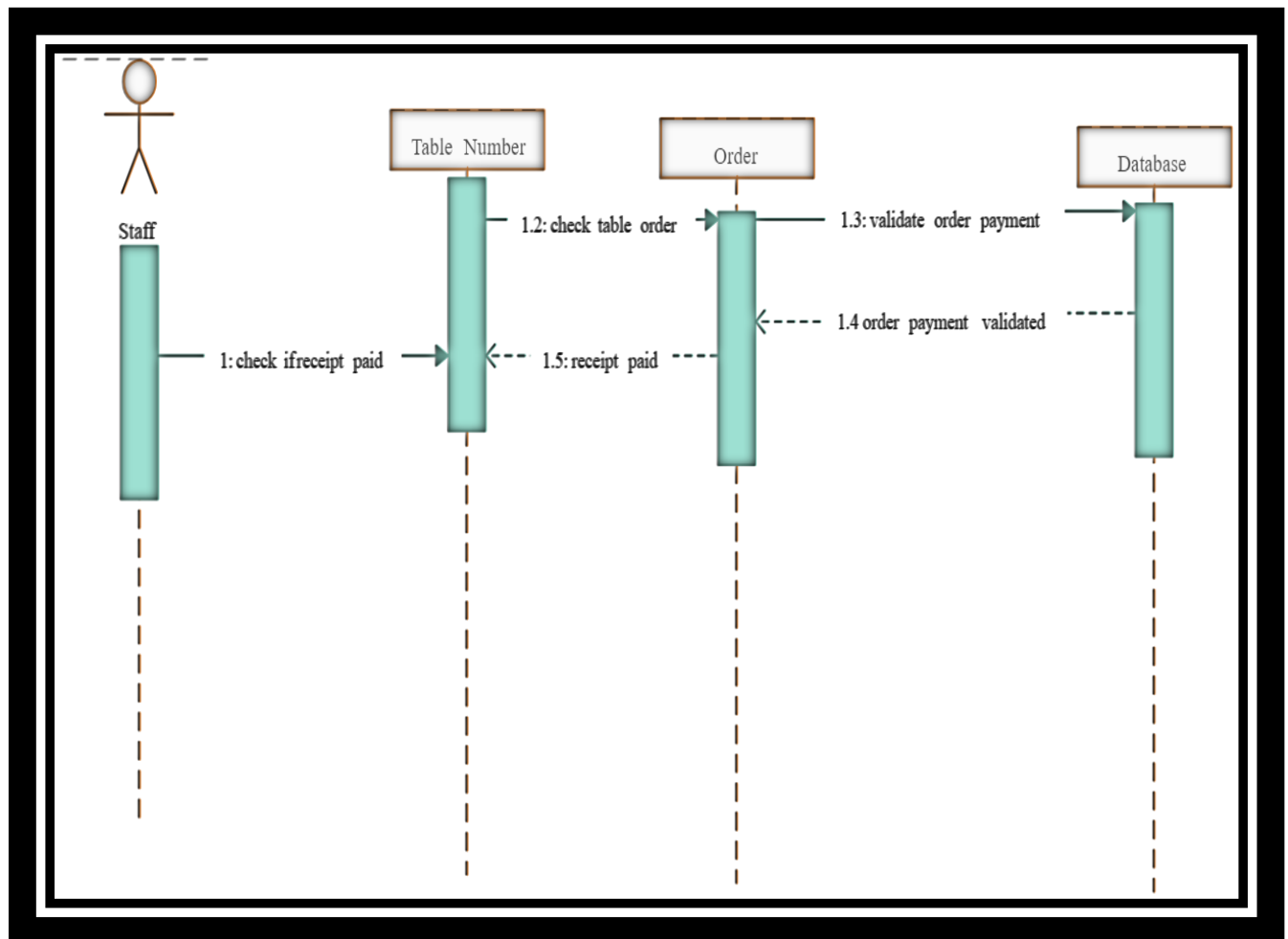



DEPLOYEMENT DIAGRAM: -



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SEQUENCE/ACTIVITY DIAGRAM: -



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PROJECT DESCRIPTION

Welcome to Antique Cafe Online: Where Timeless Elegance Meets Modern Convenience

Step into a world where the past and present coalesce in a delightful blend of vintage charm and contemporary comfort. Antique Cafe Online is not just a place to enjoy exceptional coffee and delectable treats; it's an experience that transports you to a bygone era, surrounded by the warmth of antiques and the convenience of the digital age.

Key Features:

Timeless Decor:

Immerse yourself in the cozy ambiance of our cafe, adorned with carefully curated antique furniture, vintage decor, and a touch of old-world charm. Every piece tells a story, creating an atmosphere that's as inviting as it is unique.

Online Ordering:


Embrace the convenience of the modern era with our user-friendly online ordering system. Browse our menu, place your order with a few clicks, and have your favorite beverages and snacks delivered to your doorstep or prepared for pickup.

Virtual Tour:

Explore the beauty of Antique Cafe Online with our virtual tour feature. Take a stroll through the cafe, admiring the antiques and absorbing the atmosphere, all from the comfort of your home.

Antique Marketplace:

Love the antiques in our cafe? Our Antique Marketplace allows you to bring a piece of the past into your own space. Browse and purchase unique antiques and vintage items showcased in our cafe.

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Events and Celebrations:

Host your special events in our uniquely styled venue. Whether it's a birthday celebration, an intimate gathering, or a corporate event, Antique Cafe Online provides a distinctive backdrop for unforgettable moments.

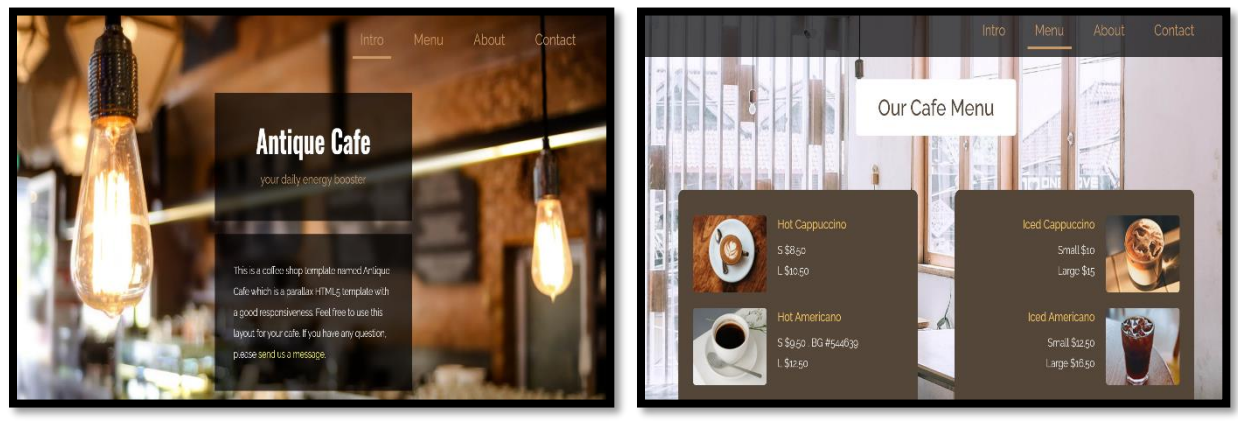
Blog and History Corner:


Dive into the fascinating stories behind our antique pieces and the history of coffee. Our blog and history corner provide a deeper insight into the rich tapestry of the past.

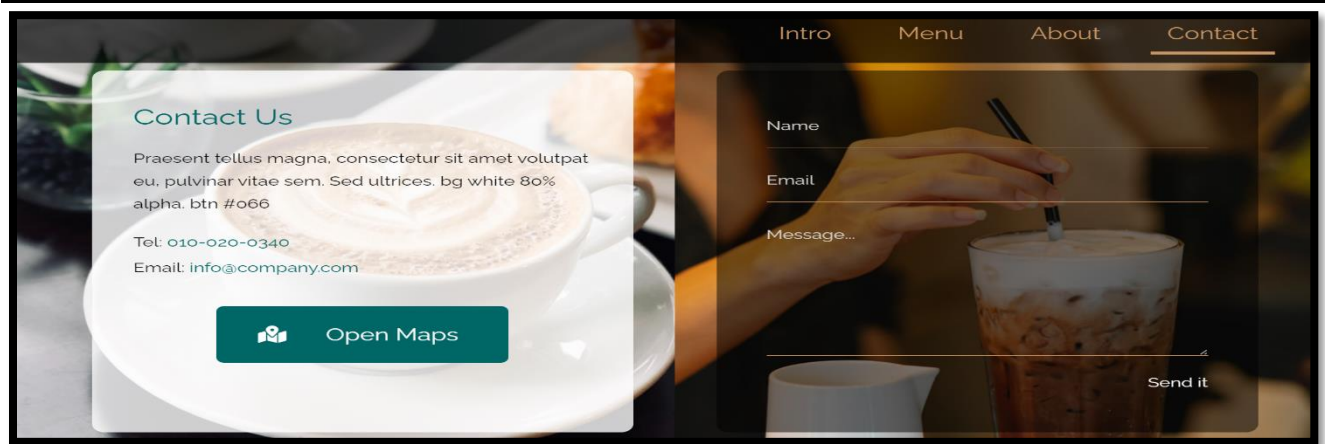
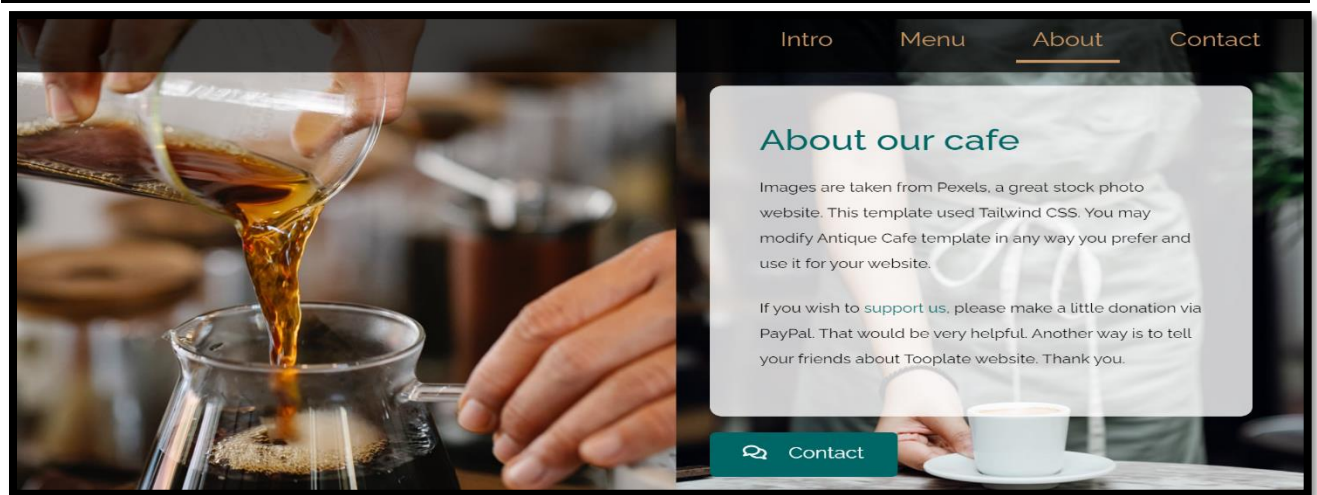
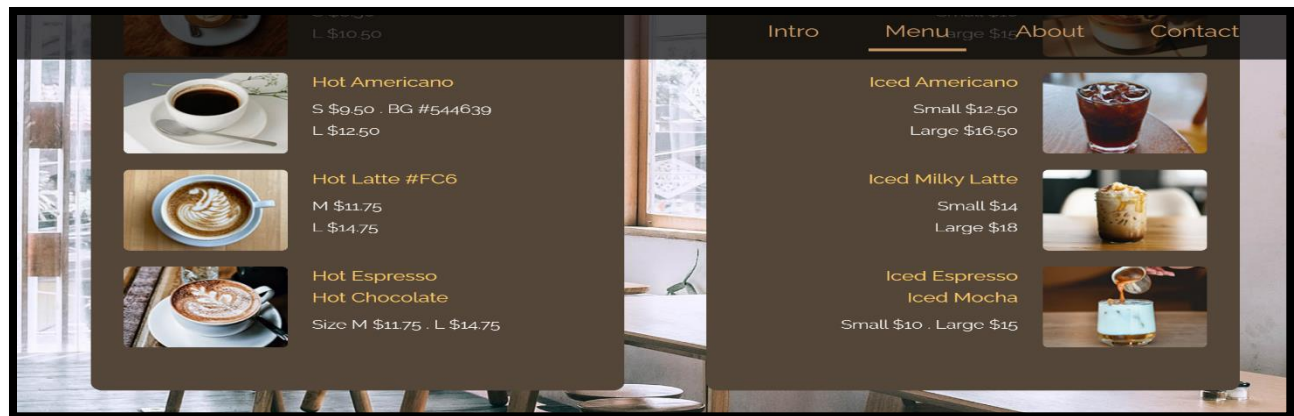
Membership Benefits:


Join our exclusive membership program for special discounts, early access to events, and a closer connection to the Antique Cafe Online community.

At Antique Cafe Online, we invite you to savor the essence of the past while embracing the convenience of the present. Join us for a delightful journey where every sip is a step back in time.



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PROJECT SYNOPSIS

Objective:

Create a captivating online platform for Antique Cafe, seamlessly blending antique aesthetics with modern web technologies to provide users with a delightful browsing, ordering, and virtual experience.

Technologies Used:

HTML

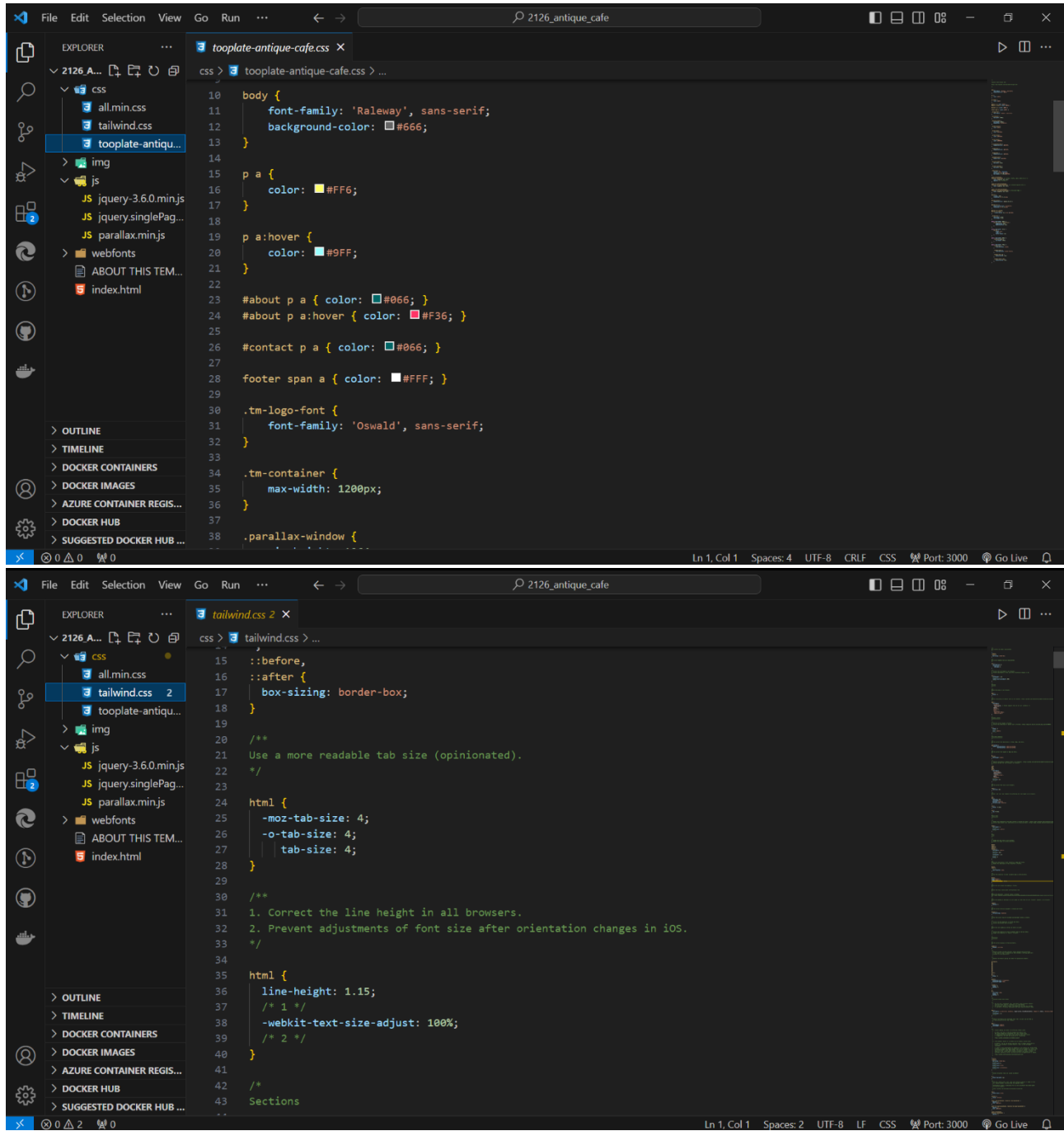
CSS

JavaScript


Bootstrap

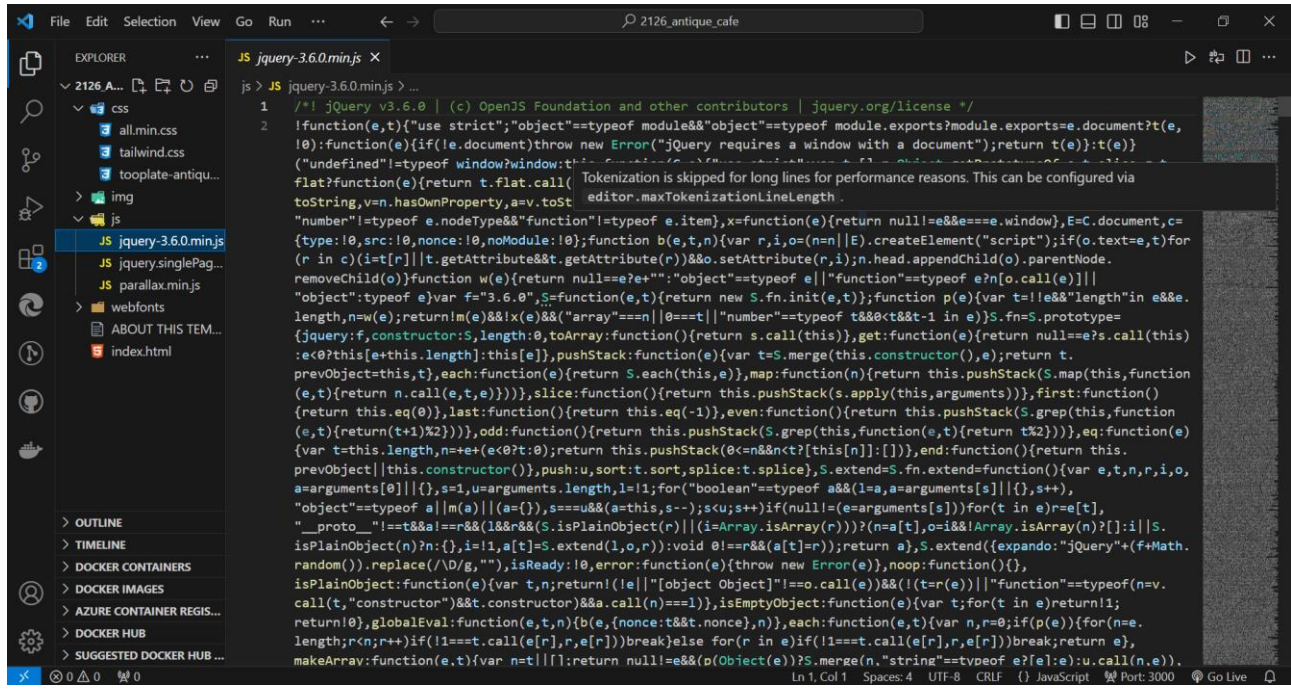
Screenshots: -

54




```
css > tailwind.css > ...
15  ::before,
16  ::after {
17    box-sizing: border-box;
18  }
19
20  /**
21   Use a more readable tab size (opinionated).
22   */
23
24  html {
25    -moz-tab-size: 4;
26    -o-tab-size: 4;
27    tab-size: 4;
28  }
29
30  /**
31   1. Correct the line height in all browsers.
32   2. Prevent adjustments of font size after orientation changes in iOS.
33   */
34
35  html {
36    line-height: 1.15;
37    /* 1 */
38    -webkit-text-size-adjust: 100%;
39    /* 2 */
40  }
41
42  /*
43   Sections
44  */
```

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Conclusion:

The Antique Cafe Online website project aims to create an immersive online experience that seamlessly combines antique charm with modern web technologies, providing users with a visually appealing and user-friendly platform to explore, order, and engage with the cafe's unique offerings.

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FUTURE SCOPE OF WEB DEVELOPMENT: -

ARTIFICIAL INTELLIGENCE: -

Artificial Intelligence occupies a prime position in the space for the future scope of web development. Templates or codes don't exist for this; all developers have to do is provide instructions, and the site will be laid out as they envisioned.

Artificial Design Intelligence or ADI is another emerging component of AI, and it assists developers to customize the software.

VIRTUAL REALITY: -


Till now, we have seen virtual reality only in gaming, but some businesses have already started including them in their websites. Experts predict that very soon, this technology will be used far more widely in websites and web applications, as it is very interactive and exciting for the end-user.

VOICE FUNCTIONALITY: -

With human beings demanding more convenience, and being on the move constantly and multi-tasking, voice functionality including voice search, speech recognition, and eCommerce through voice, are definitely going to be used increasingly.

INTERNET OF THINGS (IOT): -

While developers are not directly connected to IoT, they implement it in web apps. With more and more devices becoming connected and sending vital information to the end-user through cloud-based central computers, IoT is here to stay.

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SCOPE OF WEB DEVELOPMENT AS A CAREER: -

There are numerous web developer jobs available in the market for those with the requisite skills. We discussed the trending technologies earlier – it goes without saying that it is essential for developers to master those technologies: IoT, AI, VR, AR, in addition to the latest programming languages, platforms, tools, and so on. If you aspire to be a web development professional, make sure you learn all these skills.

Which industries are likely to provide you with a career in web development? Almost every industry uses web development for their business:

- Manufacturing
- Retail
- Entertainment
- Education
- Banking and Insurance

Even software development, mobile app development, and digital marketing companies have their own websites obviously.

REFERENCES: -

- <https://www.wikipedia.org/>
- <https://www.geeksforgeeks.org/>
- <https://www.tutorialspoint.com/index.htm>
- <https://www.w3schools.com/>
- <https://developer.mozilla.org/en-US/>