INTERNATIONAL SCHOOL OF MANAGEMENT AND TECHNOLOGY

KATHMANDU, NEPAL

Qualification		**Unit Number & Title**	
BTEC HND IN COMPUTING		R/615/1633 - Unit 10: Website Design & Development	
Student Name		**Assessor Name**	
Sparsh Shrestha			
Assignment Launch Date	**Due Date**	**Completion Date**	
01 November 2022	30 December 2022	28 December 2022	
Session/Year	**2021/2022**	**Assignment Number**	**1/1**
Assignment Title	Designing and Developing Website		

Assignment submission format
Each student has to submit their assignment as guided in the assignment brief. The students are guided what sort of information is to produce to meet the criteria targeted. You are required to make use of headings, paragraphs and subsections as appropriate, and all work must be supported with research and referenced using the Harvard Referencing System.

Important:

1. **Read the plagiarism notice and requirements at Page 6**
2. **Word-limit- 7500 words** *(excludes cover page, table of content, figures, graphs, reference list, appendix and logbook)*
3. **Accepted Sources: Research Papers** *(Journal Articles, Conference Proceedings, Thesis), Text Books, Governmental Data, Websites (only a registered organization, an educational institution, government agency)*
4. **Information taken from unreliable sources will not be accepted**
5. **Must follow Harvard Reference Style**

Learning outcomes covered

- LO1: Explain server technologies and management services associated with hosting and managing websites.
- LO2: Categorize website technologies, tools and software used to develop websites.
- LO3: Utilize website technologies, tools and techniques with good design principles to create a multipage website.
- LO4: Create and use a Test Plan to review the performance and design of a multipage website.

Scenario – 1

Web Tech Pvt. Ltd. is a leading software company along with web hosting and domain registering company since 2012. The company has extensive experience in terms of software development and in providing other relevant technological services. The company has decided to hire some new employees to the team. You are one of them. Being fresher to the company, they want to assess your understanding and skills to use technology to deliver a high quality and consistent User Experiences (UX) through friendly and functional User Interfaces (UI).

In order to demonstrate that your understanding regarding the industry requirements, you have been asked to prepare a report that meets the standard set.

Assignment Task – Part 1

- Identifies the purpose and types of DNS along with how domain names are organized and managed.
- Explains the purpose and relationships between communication protocols, server hardware, operating systems and web server software with regards to web designing, publishing and accessing a website.
- May evaluate the impact of common web development technologies and frameworks with regards to website design, functionality and management.
- May review the influence of search engines on website performance along with

website crawling, indexing and ranking and provide evidence based support for improving site's index value and rank through search engine optimization.

- Discusses the capabilities and relationships between front-end and back-end website technologies along with their relation to presentation and application layers.
- Discuss the differences between online website creation and custom built sites with regards to design flexibility, performance, functionality, user experience (UX) and user interface(UI).
- Can evaluate a range of tools and techniques available to design and develop a custom built website along with justification to the tools and techniques chosen to realize a custom built website.

Scenario – 2

- Assume you are working as a web developer in a renowned web application development company. A new Real Estate Agent named "Nepal Bhoomi Limited (NBL)" is demanding to develop a very basic website to promote its property business. They start selling and renting the new build and old apartments to individual customers. Initially, NBL is eager to present their 5 new build apartments to sell and 10 old houses to rent with detailed information e.g. price, location, number of bedrooms, nearest stations, and additional key features.
  A website must be supported by different browsers and access to different devices e.g. Mobile, Computer, Tablets. Based on your knowledge and expertise in web development, you have to design and develop a user-interactive website based on their requirements. The client also wants SEO and content analysis for attracting users. You are free to make any assumptions but your assumptions must be related to the property business.

  The recommendation for designing and developing the website:

- Create a design document with appropriate principles and standard guidelines to produce a branded, multi page website before developing the website
- 3-5 pages, each of those pages should use a similar style so that the pages look like they belong to the same website.
- Consistent navigation for all pages and organizing all the pages in a good structure.
- Create a contact us page and place the Google map on the contact page.
- Has a customer inquiry form on your website
- Use some multi-media content e.g. audio, video, flash, etc.

They want an online system to utilize website technologies, tools and techniques with good

design to create a multipage website and use a test plan to review the performance.

Assignment Task – Part 2

Based on the client's requirements, prepare a detailed documents which comprises of following

1. Create a design document for a branded, multipage website supported with medium fidelity wireframes along with a full set of client and user requirements.
2. After the requirements specification phase, develop a website with above all functionalities. The website must contain at least 10 web pages. Should have the CRUD functionality i.e. create, retrieve, update and delete.
3. Compare and contrast the multipage website created to the design document and critically evaluate the design and development process against your design document, and analyse any technical challenges.
4. Create a suitable test plan to test your developed website identifying key performance areas and use it to review the overall functionality and performance of the website.
5. Evaluate the Quality Assurance (QA) process and review how it was implemented during your design and development stages.
6. Finally critically evaluate the result of your test plan and include the review of the overall success of your website and use this to explain any areas of success and provide justified recommendations for areas that require improvement.

Learning Outcomes and Assessment Criteria

Pass	Merit	Distinction
LO1: Explain server technologies and management services associated with hosting and managing websites.		
P1 Identify the purpose and types of DNS, including explanations on how domain names are organized and managed.	**M1** Evaluate the impact of common web development technologies and frameworks with regards to website design, functionality and management.	**LO1** and **LO2**
P2 Explain the purpose and relationships between communication protocols, server	**M2** Review the influence of search engines on website performance and provide	**D1** Justify the tools and techniques chosen to realize a custom-built

hardware, operating systems and web server software with regards to designing, publishing and accessing a website.	evidence-based support for improving a site's index value and rank through search engine optimization.	website.
LO2: Categorize website technologies, tools and software used to develop websites.		
P3 Discuss capabilities and relationships between front end and back-end website technologies and explain how these relate to presentation and application layers. **P4** Discuss the differences between online website creation tools and custom-built sites with regards to design flexibility, performance, functionality, User Experience (UX) and User Interface (UI).	**M3** Evaluate a range of tools and techniques available to design and develop a custom-built website.	
LO3: Utilize website technologies, tools and techniques with good design principles to create a multipage website.		
P5 Create a design document for a branded, multipage website with medium fidelity wireframes and full set of client and user requirements. **P6** Use your design document with appropriate principles, standard and guidelines to produce a branded, multipage website supported with realistic content.	**M4** Compare and contrast the multipage website created to the design document.	**D2** Critically evaluate the design and development process against your design document and analyze any technical challenges.
LO4 Create and use a Test Plan to review the performance and		

design of a multipage website		
P7 Create a suitable Test Plan identifying key performance area and use it to review the functionality and performance of your website.	**M5** Evaluate the Quality Assurance (QA) process and review how it was implemented during your design and development stages.	**D3** Critically evaluate the results of your Test Plan and include a review of the overall success of your multipage website; use this evaluation to explain any areas of success and provide justified recommendations for areas that require improvement.

Grades Achieved

Note: Refer the unit details provided in your handbook when responding all the tasks above. Make sure that you have understood and developed your response that matches the highlighted key words in each task.

Plagiarism Notice

You are reminded that there exist **Academic Misconduct Policy and Regulation** concerning **Cheating and Plagiarism**.

Extracts from the Policy:

Section 3.4.1: Allowing others to do assignments / Copying others assignment is an offence

Section 3.4.2: Plagiarism, using the views, opinion or insights / paraphrasing of another person's original phraseology without acknowledgement

Requirements

- It should be the student's own work – **Plagiarism is unacceptable**.
- Clarity of expression and structure are important features.
- Your work should be submitted as a **well presented**, word-processed document with headers and footers, and headings and subheadings.
- You are expected to undertake research on this subject using books from the Library, and resources available on the Internet.
- Any sources of information should be **listed as references** at the end of your document and these sources should be referenced within the text of your document using **Harvard Referencing** style
- Your report should be illustrated with screen-prints, images, tables, charts and/or graphics.
- All assignments must be typed in **Times New Roman**, **font size** 12, $1^{1/2}$ **spacing**.

The center policy is that you must submit your work within due date to achieve "Merit" and "Distinction". Late submission automatically eliminates your chance of achieving "Merit and Distinction". Also, 80% attendance is required to validate this assignment.

I declare that all the work submitted for this assignment is my own work and I understand that if any part of the work submitted for this assignment is found to be plagiarised, none of the work submitted will be allowed to count towards the assessment of the assignment.

Assignment Prepared By	**Signature**	**Date**
Bikul Raj Koirala		12 Oct 2022
Brief Checked By		**Date**
Dhruba Babu Joshi		30 Oct 2022

Table of Contents

Introduction

According to the scenario, I am an intern at Web Tech Pvt. Ltd. and I am required to create a report outlining the function, types, and management of DNS along with domain name organization. As it relates to web designing, publishing, and website access, I should also describe the function and connections between communication protocols, server hardware, operating systems, and web server software. Along with website crawling, indexing, and ranking, my paper also discusses the impact of search engines on website performance. It also offers evidence-based advice for enhancing a site's index value and ranking through search engine optimization.

I've also produced an article analyzing the effects of popular web development frameworks and technologies on the management, functionality, and design of websites. The capabilities and connections between front-end and back-end website technologies, as well as their linkages to display and application layers, have also been explained. In terms of design flexibility, performance, functionality, user experience (UX), and user interface, I have highlighted the contrasts between creating websites online and having them developed from scratch (UI).

Below, I've evaluated a variety of tools and processes that can be used to design and construct a custom website and provided explanation for the tools and approaches that were ultimately selected to realize a custom website.

DNS

The Domain Name System (DNS) is the phonebook of the Internet. Humans access information online through domain names, like nytimes.com or espn.com. Web browsers interact through Internet Protocol (IP) addresses. DNS translates domain names to IP addresses so browsers can load Internet resources (Cloudflare, 2022).

Purpose of DNS

- Browser the internet
- No IP remembering issues
- Security improvement
- Faster communication

Types of DNS

As a result of their placement on each of the 13 servers in the world database, the number of servers that are partially dispersed around the internet but only total 13 servers are referred to as root DNS servers. The primary DNS server and the secondary DNS server can only be used in two different ways. However, it should be noted that based on the desire of the admin server, either of the two DNS servers can be utilized as the primary or secondary server. A single primary server can also function as a backup for any other region. These DNS server forms ask for the following details:

Primary DNS Server

For a browser, application, or other device that needs to convert a human-readable hostname into an IP address, a primary DNS server is the first point of contact. A DNS record with the proper IP address for the hostname is present on the main DNS server. The device contacts a secondary DNS server that has a recent copy of the same DNS records if the first DNS server is down.

Secondary DNS Server

Changes to DNS records for example, changing the IP for a domain name can only be done on a primary server, which can then update secondary DNS servers. DNS servers can be primary for one DNS zone and secondary for another DNS zone (NS1, 2022).

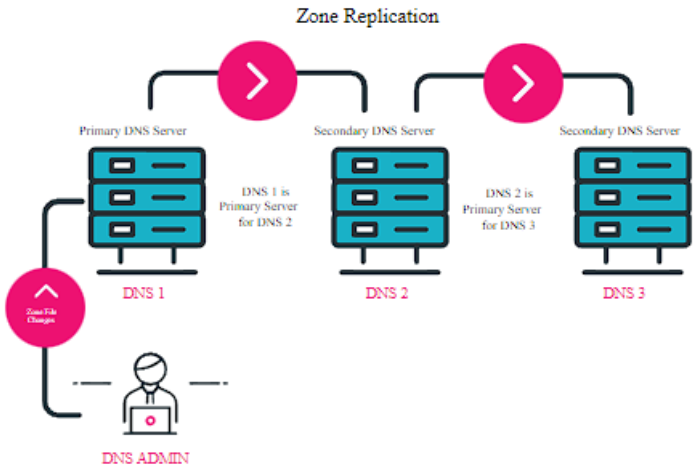

Figure 1

A read-only copy of the zone file containing the DNS entries is kept on a secondary server as a secondary DNS zone. In a process known as zone transfer, it obtains an updated copy of the copy. If secondary servers want to modify their local copy of the DNS records, they can pass a change request.

Caching-Only Server

A caching-only DNS server is one that is not authoritative for any DNS domains. It's configured to perform recursion or use a forwarder. When the caching-only DNS server receives a response, it caches the result and returns the answer to the system issuing the DNS query to the caching-only DNS server (User, 2019).

Forwarding Server

Through the process of DNS forwarding, specific sets of DNS requests are routed to a specific server rather than the first one the client contacts. Typically, requests for addresses that are outside of the network are forwarded to a specific forwarder by all DNS servers that perform address resolution within the network.

Communication Protocol

Communication protocols are formal descriptions of digital message formats and rules. They are required to exchange messages in or between computing systems. Communication protocols are important in telecommunications systems and other systems because they create consistency and universality for the sending and receiving of messages (Techopedia, 2020).

Server Hardware

The physical parts of a computer used as a server are referred to as server hardware. The processor, memory, storage, network interfaces, as well as numerous peripherals like keyboards, displays, and power supply, are examples of these components.

Depending on the type of server and the workload it is intended to manage, a server's precise hardware needs will vary. For instance, a database server that processes high amounts of transactions from many users may have different hardware needs than a web server that offers static information to a limited number of users.

Purpose of Server Hardware

- To remain within the client in order to share data and perform tasks in order to maintain a smooth and productive flow of the work
- To provides higher computation power than a normal hardware or computer
- To provides one or more than one specific services

OS (Operating Software)

An operating system (OS) is the program that controls all other application programs in a computer after being installed into the system first by a boot program. Through a specified application program interface, the application programs seek services from the operating system (API). Additionally, users can communicate directly with the operating system by using a user interface, such as a graphical user interface (UI) or a command-line interface (CLI) (GUI).

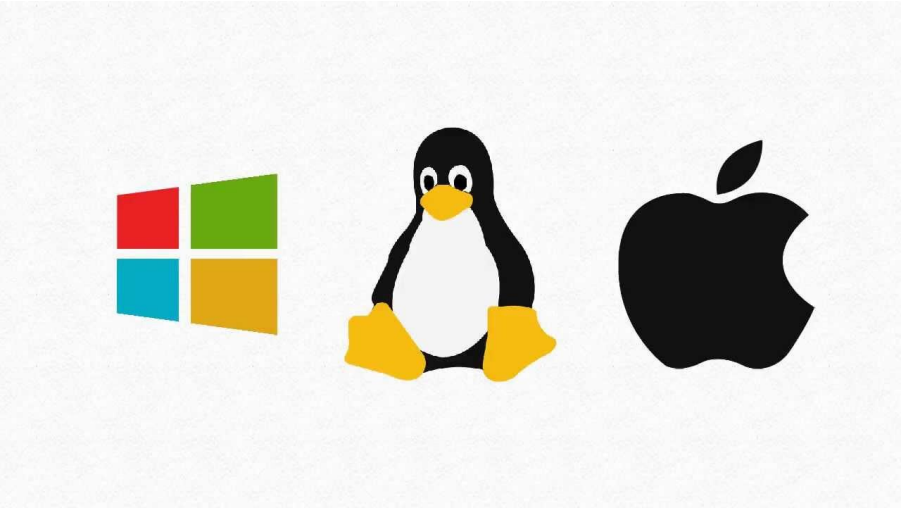

Figure 2

Purpose of OS

- To work as an interface between the user and the computer hardware
- To coordinate the distribution of computer hardware
- To provide a platform on which a client can efficient and conveniently execute or run programs

- To control and manage resources like a traffic controller, scheduler, memory management module, input/output programs, and even a file system

Web server Software

A web server is software and hardware that uses HTTP (Hypertext Transfer Protocol) and other protocols to respond to client requests made over the World Wide Web. The main job of a web server is to display website content through storing, processing and delivering webpages to users (Gillis, 2022).

Figure 3

Purpose of Web Server Software

- It helps to store, process, and deliver web pages to customer
- It helps to transfer and storage of files using the FTP protocol
- It allows for emailing using the simple mail transfer protocol
- To work with in a variety of operating system.
- It uses integrated search engine to create dynamic pages

Relation between Communication Protocols, Server hardware, OS and Web Server software

As they are both hardware and software, we can essentially say that they are tied to one another and that communication occurs between them, aiding in our ability to communicate. As the two components of a computer that are most essential are hardware and software. As the program is merely a series of 101 01 and the hardware is only a dumb machine. So, if we use them both

appropriately and mix them, we can have a good outcome. Web server software can only present the user with the web page interface because it runs on server hardware. Without the software that enables interaction between us, the users, and the hardware, none of this would be possible. The operating system, one of the software components that aids in the general running of the machine, is the most crucial part of a computer after the hardware and software. Communication protocols are implemented in the hardware device and software system for accessing data via the internet. The internet is a vast network made up of many hardware and software-based servers. Google, another significant server and sizable organization, is also part of this network. Due to this interconnection, if one gadget malfunctions, the others become unusable.

SEO

SEO stands for "search engine optimization." In simple terms, it means the process of improving your site to increase its visibility when people search for products or services related to your business in Google, Bing, and other search engines. The better visibility your pages have in search results, the more likely you are to garner attention and attract prospective and existing customers to your business (SearchengineLand, 2020).

There are two main segments

They are:

On page SEO

- Relevance like (Content, Keywords)
- Architecture like (Page Design, UX, Performance)

Off page SEO

- Social media presence like (Engagement, Brand Trust)
- Linking like (Quality, Credibility)

Ways to improve site

The ways for improving a site's index value and rank through search engine optimization are given below:

Earn relevant link

To improve our results and receive a favorable response from top search engines like Google, we must make the links from the websites really trustworthy. We can direct our links to online bloggers as well as regional and international journalists.

Add keywords in tactical places

In the word or keyword game, we must use strategy. We need to make appropriate page titles and company URLs for optimization and flash. By adding keywords to these places, we can tell search engines that these places are relevant, which makes our site appear when users type in those names.

Increasing the Quality of the content published

On the internet, people only access high-quality content. We'll offer top-notch content that will advance our development and improve our standing in search results. When a piece of content is appropriate and well-structured, it circulates among individuals and sells quickly. They aid in the improvement of both the site page's development and the type of visitors it attracts. Details on the website are so crucial.

Evidence of Search Engine Optimization

Using the Meta Tag

A tool for writing and debugging meta tag code for webpages is called Meta Tags. Using Meta Tags, you may play around with the text and make changes before seeing how your website performs in a search engine.

Google Webmaster Tool

The performance of your website in search results can be monitored and maintained using Google Webmaster Tools, a free service. Google offers this feature without charge. It serves as a

Figure 4

channel for information to reach people from the biggest search engine on the planet. Additionally, it provides viewpoints on the website and aids in identifying problems that need to be fixed. It reveals the most common search terms that brought up your website in search results. It reveals the most popular search terms. It lists the search terms that link to the webpage.

Conclusion

With regard to accessing, publishing, and constructing a website, I have identified the function and type of DNS, discussed the link and purpose between the server hardware, communication protocols, web server software, and operating system. I've also looked at how search engines affect how well websites perform, and I offer proof-based arguments in favor of enhancing a site's index.

Common web technology and frameworks

We must evaluate the effects of popular web development tools and frameworks on website design, functionality, and management. Many tools are accessible in the web development area.

The tools that are utilized for both the front end and the back end must be identified. We used the bootstrap framework, HTML5, CSS3, and other front-end technologies. The backend's resources included MySQL and PHP.

Website

A website is a collection of publicly accessible, interlinked Web pages that share a single domain name. Websites can be created and maintained by an individual, group, business or organization to serve a variety of purposes (Techopedia, 2020).

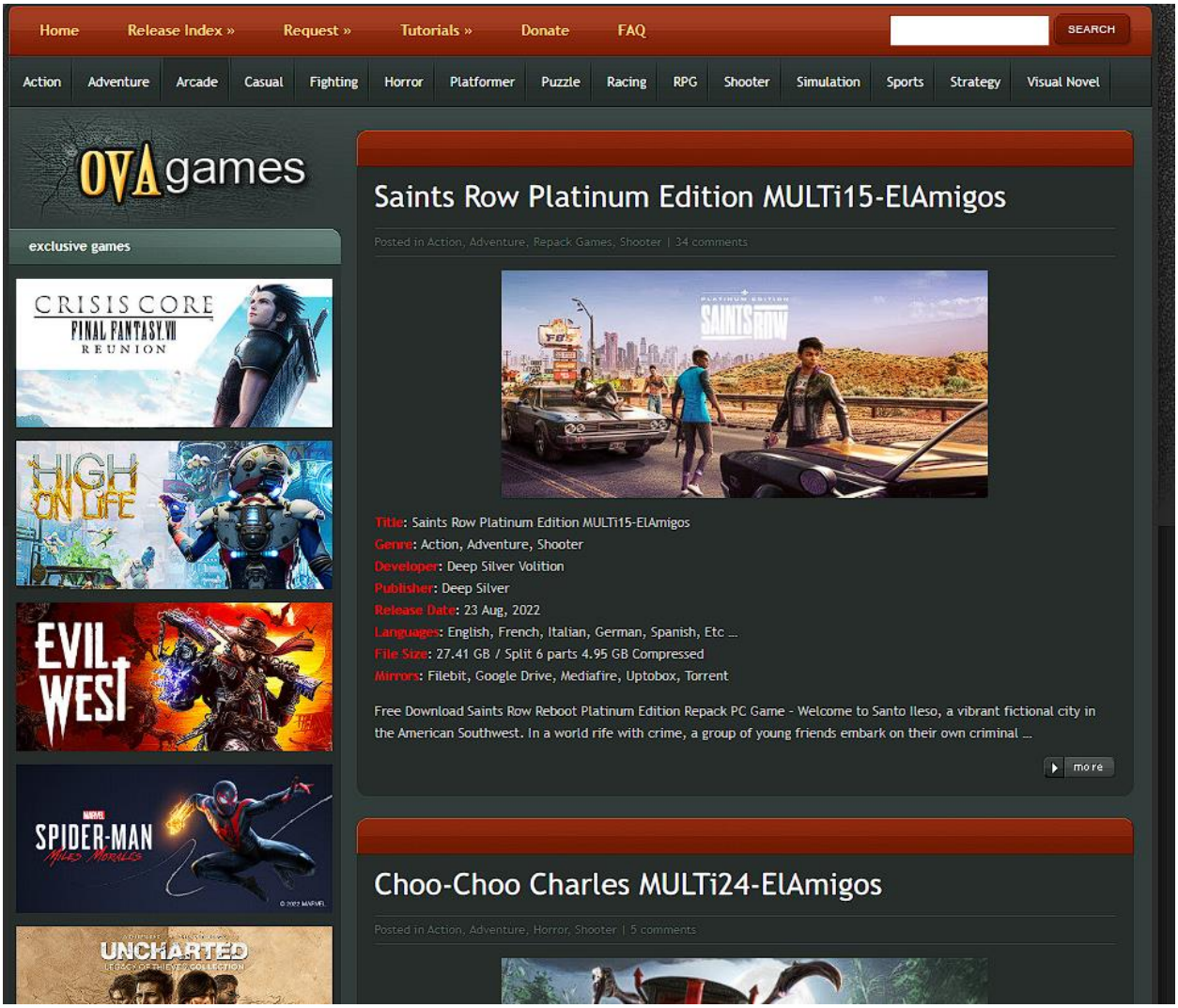

Figure 5

Webserver

A web server is software and hardware that uses HTTP (Hypertext Transfer Protocol) and other protocols to respond to client requests made over the World Wide Web. The main job of a web

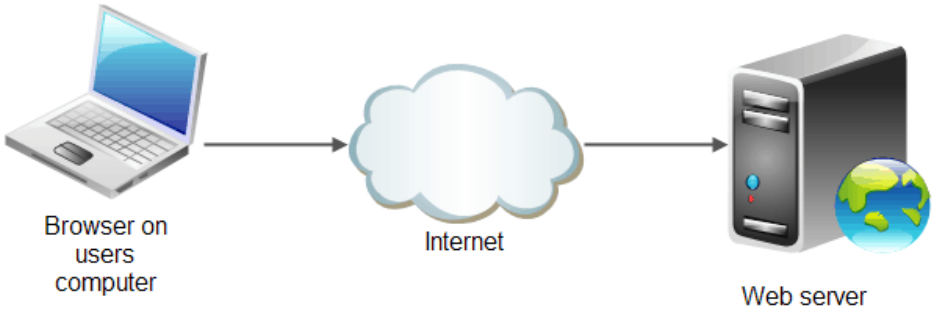

Figure 6

server is to display website content through storing, processing and delivering webpages to users. Besides HTTP, web servers also support SMTP (Simple Mail Transfer Protocol) and FTP (File Transfer Protocol), used for email, file transfer and storage (Gillis, 2019).

Web browser

A web browser is a piece of software that enables access to and viewing of web pages on the Internet. The user can engage with the content by clicking links, completing forms, and other actions through the browser in addition to retrieving and displaying the web pages. Google Chrome, Mozilla Firefox, Microsoft Edge, and Apple Safari are a few prominent online browsers.

Web browsers are a necessary tool for utilizing the Internet because they make it simple and convenient for users to access and navigate to various web pages and websites. To comprehend and display web information, web browsers make use of a variety of protocols and technologies, including HTML (Hypertext Markup Language), CSS (Cascading Style Sheets), and JavaScript.

Web browsers contain a variety of functions and capabilities in addition to just being able to view web pages, including the ability to bookmark websites, store cookies and history, and support for extensions and plugins. In order to safeguard user privacy while visiting the web, certain web browsers also provide privacy features like disabling tracking cookies and enabling private browsing mode.

Figure 7

Front end

The process of creating HTML, CSS, and JavaScript for a website or Web application so that a user can see and interact with them directly is known as front-end web development, sometimes known as client-side development. The difficulty with front end development is that the methods and technologies used to build a website's front end are continually changing, necessitating constant monitoring of the industry's advancements.

The goal of website design is to present the content in an understandable and pertinent manner to users as soon as they access the site. This is made much more difficult by the fact that customers today utilize a wide range of devices with different screen sizes and resolutions, prompting the site's designer to take these factors into account. They must make sure that their website functions properly across a variety of browsers (cross-browser), operating systems (cross-platform), and devices (cross-device), which necessitates considerable preparation on the part of the developer.

HTML

A common markup language for creating web pages is HTML (Hypertext Markup Language). It serves as the basis for the majority of websites and is utilized to organize and format the text, graphics, and other content present on web pages. A web page's structure and content are defined by a set of HTML components, often known as tags. Each element is represented by a tag, which is enclosed in angle brackets and typically combined with a closing tag that fits the element in question. Example of HTML:

```
<!DOCTYPE html>

<html>

<head>

<title>Page Title</title>

</head>

<body>

<h1>This is a Heading</h1>

<p>This is a paragraph</p>

</body>

</html>
```

The html> element initiates and terminates the process, as seen in the example above, and the same is true for the body. The first tag, <!DOCTYPE html>, specifies HTML5. We also recognize that it acts as a base for web development.

CSS

A stylesheet language called Cascading Style Sheets (CSS) is used to describe the appearance and formatting of an HTML document. By defining how elements on the page should be

presented, such as their layout, color, font, and size, CSS is used to manage the appearance of web pages.

A web page's presentation and content can be distinguished using CSS, a potent tool. Web designers can alter the look and feel of a website because to this separation without affecting the underlying HTML code. As the same styles may be used on numerous pages and site parts, it also makes website design maintenance and updating simpler.

A selector and a declaration are the two components of each CSS rule. The declaration describes the stylistic properties and values that should be applied to certain components, while the selector is used to indicate which page elements the rule applies to.

Example

```
p {

color: red;

font-size: 18px;

}
```

JavaScript

A computer language that is frequently used in web development is JavaScript. It is a client-side scripting language, which implies that rather of being run by the server but rather by the user's web browser.

JavaScript is used to incorporate dynamic and interactive elements into web pages. It is frequently used to handle user events like clicks and mouseovers, create animations, and validate forms. Web pages can retrieve and update data without having to reload by using JavaScript to send HTTP requests to the server.

Functions, which are blocks of code that may be called repeatedly with various arguments, are how JavaScript code is created. Events like a button click or a page load are frequently what cause functions to be called.

Example

```
function showAlert() {

alert("Button clicked!");

}
```

In addition to being used by millions of websites globally, JavaScript is a crucial component of web development. It is a strong and adaptable language that is necessary for developing engaging and interactive websites.

Backend

Back-end Development refers to the server-side development. It focuses on databases, scripting, website architecture. It contains behind-the-scene activities that occur when performing any action on a website. It can be an account login or making a purchase from an online store. Code written by back-end developers helps browsers to communicate with database information (Martin, 2022).

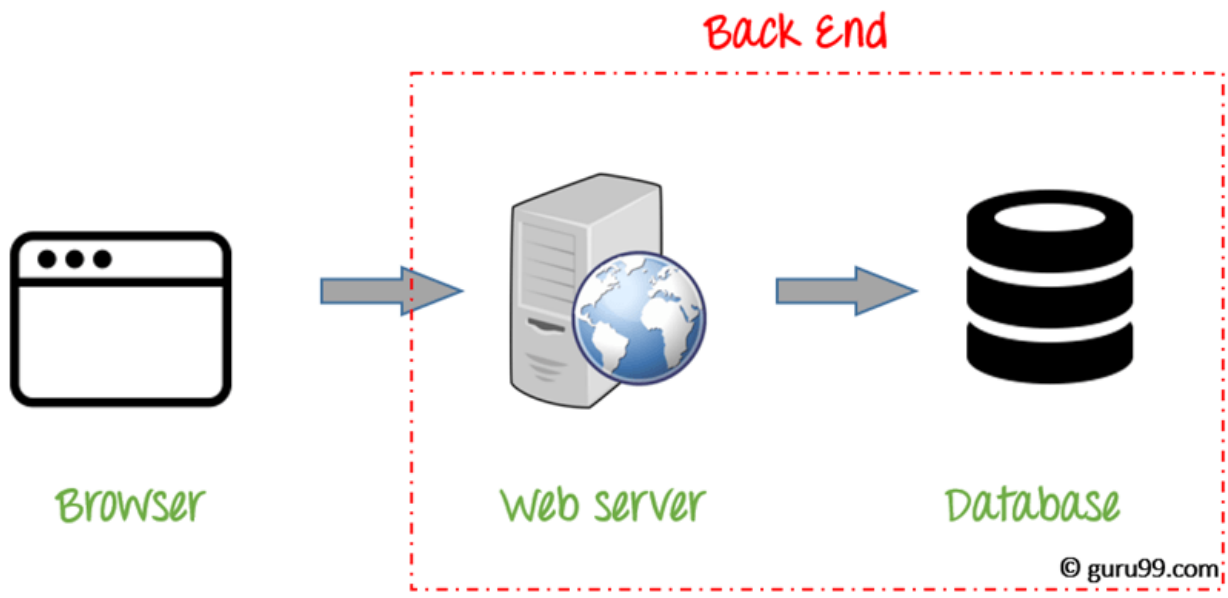

Figure 8

MySQL

A popular open-source relational database management system is MySQL (RDBMS). It is based on SQL, a language that is widely used to manage and manipulate data that is stored in relational databases.

Data is stored, managed, and retrieved for a variety of applications using MySQL. It is well-liked for web-based applications due to its quickness, dependability, and simplicity. PHP, a server-side programming language, and MySQL are frequently combined to provide dynamic and interactive websites.

In MySQL, information is arranged into databases that are composed of tables. Similar to a spreadsheet, tables are used to hold data in rows and columns. In a table, each row corresponds to a record, and each column to a field or attribute of the record. A table might, for instance, include a list of customer records, including fields for each record's name, address, and phone number.

MySQL may be utilized in many different situations, such as web servers, desktop programs, and embedded systems. It is also very adaptable. A lot of developers favor it because of its adaptability and scalability.

PHP

Web development frequently uses the server-side programming language PHP (Hypertext Preprocessor). By producing HTML, CSS, and JavaScript on the server and transmitting them to the client's web browser, it is used to create dynamic and interactive webpages.

Since PHP is run on the server, no additional software needs to be installed in the client's web browser in order to see a PHP-based website. Because of this, PHP is frequently used to build online apps that can be accessed from any device that has a web browser.

Normally, PHP code is incorporated into HTML pages, and the server runs it when the page is requested. The client's browser is subsequently provided the HTML, CSS, and JavaScript output of the PHP code.

Example

```
<html>

<head>

<title>Greeting Page</title>
```

```
</head>

<body>

<?php

echo "Hello, World!";

?>

</body>

</html>
```

PHP is a strong, popular language that is necessary for building dynamic, interactive websites. It has a sizable global community of developers and users and is simple to learn.

Framework

In general, a framework is a real or conceptual structure intended to serve as a support or guide for the building of something that expands the structure into something useful (Lutkevich, 2020).

A framework in computer systems is frequently a layered structure that specifies the kind of programs that can or should be constructed and how they would interact. In addition to offering programming tools or defining programming interfaces, some computer system frameworks also come with actual programs. An operating system's layers, the layers of an application subsystem, how communication should be standardized at some level of a network, and other system operations and how they connect to one another are examples of frameworks. In general, a framework is more extensive than a protocol and more directive than a structure.

Example

Here are examples of Framework:

Bootstrap

Bootstrap is a free, open source front-end development framework for the creation of websites and web apps. Designed to enable responsive development of mobile-first websites, Bootstrap provides a collection of syntax for template designs (Zola, 202).

Developers only need to place the code into a pre-defined grid system because Bootstrap is a framework that already includes the fundamentals for developing responsive websites. Hypertext Markup Language (HTML), cascading style sheets (CSS), and JavaScript serve as the foundation for the Bootstrap framework. By using Bootstrap, web designers may create websites much more quickly without having to spend time worrying about fundamental commands and functions.

Angular JS

Angular JS is an open source JavaScript framework that is used to build web applications. It can be freely used, changed and shared by anyone (JavaTpoint, 2022).

AngularJS is an open-source front-end web framework based on JavaScript that is primarily maintained by Google and a community of people and businesses to overcome many of the difficulties associated with creating single-page applications. By offering a framework for client-side model-view-controller (MVC) and model-view-viewmodel (MVVM) architectures along with components frequently used in rich Internet applications, it intends to make both the building and testing of such systems simpler.

React JS

The React.js framework is an open-source JavaScript framework and library developed by Facebook. It's used for building interactive user interfaces and web applications quickly and efficiently with significantly less code than you would with vanilla JavaScript (Herbert, 2022).

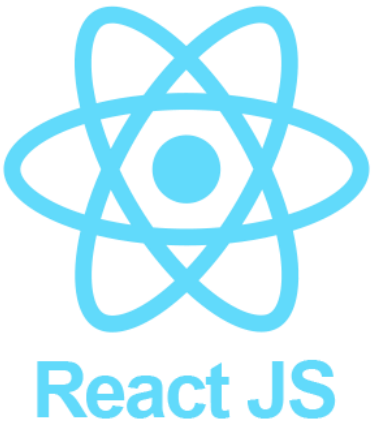

Figure 9

Components are self-contained chunks of functionality that can be readily reused and combined to create sophisticated user interfaces, and they are the foundation of the React framework. A component in React is a section of code that describes an element of the user interface. It is in charge of handling user interactions with some HTML and rendering some HTML.

Laravel

Laravel is a cross-platform PHP framework for building web applications. It's a server-based platform that manages data using the Model-View-Controller (MVC) design pattern, dividing an application's backend architecture into logical pieces (mDevelopers, 2022).

Eloquent ORM (Object-Relational Mapping), one of Laravel's key features, making it simple for developers to work with databases and do typical tasks like entering, updating, and removing entries. Routing, sessions, caching, and other technologies that come with Laravel make it simple to create contemporary, feature-rich web apps.

Django

The Django web framework is a free, open source framework that can speed up development of a web application being built in the Python programming language (IBM, 2021).

Figure 10

The model-template-view architectural pattern is used by Django. In this pattern, the model stands in for the application's data and business logic, the template for the user interface, and the view for the relationship between the model and template.

Capabilities and Relationship between Front-end and Back-end

This work will explain the relationship between the front-end and back-end of website technologies, as well as how they relate to presentation and application layers. Let's first talk about the front-end technologies that are used in website development. They are as follows:

Front-end technology: This project's front-end was created using HTML5, JavaScript, Bootstrap, and CSS3. Hypertext Markup Language, or HTML, is used in this section. For writing documents that can be seen in a web browser, this is the fundamental markup language. It is the responsibility of scripting languages that resemble JavaScript and Cascading Style Sheets (CSS). These are connected and aid in website construction because CSS styles the webpage. Basic scripting can be done with JavaScript and HTML, respectively.

We employ Photoshop, Premier Pro, and After Effects for the creation and editing of pictures, movies, logos, and photo designs. Then, we use the Bootstrap framework to quickly build responsive websites. Bootstrap is built using CSS and JavaScript design templates for components like buttons, navigation bars, and other elements.

Back-end technology is utilized in the back-end process, including PHP, MySQL, Asp.Net, and SQL Server/Oracle/Access. The framework of the website is its backend technology, just as the human backbone is its backend. It assists in the front-operation end's and is indirectly controlled by it. The backend system includes the main application logic, databases, application integration, API, and other backend activities. Here, the .Net framework facilitates communication between the server and the client. Additionally, MySQL supports retrieving, updating, and maintaining the data. Therefore, it is assisting the database industry. A database is referred to as a storage facility that retains data connected to the primary website. After that, the module is implemented in a web server using PHP as the programming language.

Font-end and Back-end relation

Here is how are front-end and back-end related to each other:

What we see is what the user can see and interact with—the website's front-end, also known as the graphical interface. The back-end, also referred to as server-based development, is a significant behind-the-scenes process. As for the relationship, we can say that the front end directly interacts with the presentation layer, whereas the back end interacts with the application layer. They are intertwined because we can't display anything by performing back-end processing; instead, we require good interface design and a front-end processor to display and showcase the work we accomplish while sitting and writing programs. The activities carried out while seated at a desk using a computer and creating scripts that are not visible to users are referred to as back-end and include everything that we perceive as users. They are intimately intertwined since the front-end is in charge of making the website appealing and functioning, whilst the back-end is in charge of coding and the generation of forms. Because of this, we can say that they are fundamentally connected to one another; if one fails, the other cannot run.

Web Technologies related

Here is the discussion of web technology related to presentation and application layer:

A backend website is a server-side development, whereas a front-end website is the graphical or visual interface the user sees. Back-end technology works with the application layer, while the front-end deals with the presentation layer. The website's front end has the most gorgeous design. Back-end technology was used to construct features like the comment box, login, online forms, and like count. Cooperation between the two technologies is crucial for determining the project's data format and type of permission.

Online website creation tools

Since the models are already available on their website, the resources are what actually generate the website. By simply entering some information and selecting the style of design we want, we can easily build our own website. The entire coding has been fixed and put into templates. They independently alter the code in accordance with user needs. The format of online site design software also varies depending on the criteria. Only a few examples are Wix.com, Jimdo.com, Yola, and other internet development resources. These are mainly employed to produce a quick and organized website format. They are quick and easy to use despite having a restricted selection of design and tool options.

Advantage

- There are no coding skills required here, all we have to do is pick one of the themes. Customize the layout by dragging and dropping items
- Although online website creation tools do not guarantee the best-looking site, their designs are attractive enough to entice the visitor
- It is east to export
- These tools are less expensive than hiring a web designer

Disadvantage

- These are not suitable like in professional business
- These tools take long to load when compared to more solidly build websites on paid platforms
- They have a limit number of pages where we allowed to create
- These websites won't be searchable if they will not appear on google, which will slow and limit their growth

Custom-built sites

They are made using genuine codes by programmers like us who build their own websites according to the specifications of the client using HTML, CSS, JavaScript, Photoshop, After Effects, and other tools and methods. Developers can construct and alter a wide range of options and designs using them whenever they like. However, only those who are certified and qualified may develop such websites because they are incredibly expensive, time-consuming, and tough to maintain. In comparison to websites that are built online, user interaction can be much faster and more fluid.

Advantage

- We can create almost any feature or design because its possibilities are endless
- Custom website is the only website like it. With custom design of web, we have a one kind of creation
- We can create a completely unique, branded experience with a custom website design for the better performance
- They also have higher levels of security

- For SEO they are more flexible

Disadvantage

- It is time consuming
- The cost is very high
- Need to maintain and update time to time
- Need lots of designer and developer

Difference between the custom-built website and online website

Here, some difference between the custom-built website and online website based on certain factor:

Basis of	Online website creation tools	Custom-built sites
Flexibility	Online website creation has fewer modification options available than a custom-based website. If there are significant modifications, we might have to start afresh in order to use a template site.	A custom website may have additional features added much more easily.
Performance	Although the websites' performance is good, their visuals and functionalities are restricted.	Custom websites offer countless options.
Functionality	The functionality of websites created online is constrained.	Websites with a custom design give users the flexibility to add and alter as needed.
User experience	Open source and simple to learn, online website construction. Online creative tools cannot guarantee that	Learning a custom website is challenging. Custom-built websites are completely responsive. The

	they will work on every device. It lacks a trustworthy support system.	business has always provided support.
User interface	The user interfaces are enclosed in a box when a website is developed online since the user's ability to change the website is limited, and we can only utilize pre-defined template formats that allow us to include all of the user interaction processes inside.	Unlimited functionality on a custom-built website is a significant benefit for the user experience.

Conclusion

In terms of website design, functionality, and management, this article provides a brief summary of popular web development tools and frameworks. Here, you can learn about the differences between the front-end and the back-end, as well as their functions and connections to the display and application layers. differences between custom websites and websites created online in terms of design flexibility, functionality, user experience (UX), and user interface.

Tools and techniques for custom-build website

To create custom-based website there are many tools and technique in the internet, here some of the tools that are used in out website that are mention below

HTML

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 (JavaPoint, 2022). The markup language HTML (Hypertext Markup Language) is used to organize content on the internet. The structure and content of an online document are described using this industry-standard markup language, which is also used to create web pages and web applications. The elements of HTML, which are represented by tags, specify how content is organized and shown on a web page.

Text, photos, and other material can all be added to a web page using HTML, which also creates the website's basic structure and layout. Additionally, it is used to design interactive features like

forms and buttons and to specify how online pages should look on various web browsers and mobile devices. Web developers and designers employ HTML, a foundational technology of the World Wide Web, to build and maintain websites and applications.

CSS

Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable (TutortialPoint, 2022). A stylesheet language called Cascading Style Sheets (CSS) is used to describe the appearance and formatting of an HTML document. It can be used to manage the appearance of several web pages at once and is used to provide style and layout to web pages.

A web page's display and content can be separated using CSS, a potent tool for web developers and designers (defined by CSS). The layout, fonts, colors, and other design aspects of a web page may all be altered using CSS, and the same styles can be applied consistently throughout a website's entire website or even several pages. Because you can edit the CSS files and have those changes applied to all the pages that utilize the stylesheet, it is simpler to maintain and update the appearance of a website. Modern web development requires the usage of CSS, which is used with HTML and other technologies to produce dynamic, interactive web pages.

JavaScript

JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive. Where HTML and CSS are languages that give structure and style to web pages, JavaScript gives web pages interactive elements that engage a user (HackerRector, 2021). The computer language JavaScript is frequently used to develop interactive features for web browsers. It is a client-side scripting language, which implies that the client's web browser, as opposed to the server, executes it. As a result, users can engage with and conduct actions on web sites without having to wait for the page to refresh from the server, making them more interactive.

For more dynamic and interactive web applications and websites, JavaScript is frequently used with HTML and CSS. It can be used to enhance the functionality of web pages by adding animations, form validation, and interactive maps. JavaScript can be used on the server-side in

conjunction with tools like Node.js and is also used to build desktop and mobile applications. It is a flexible and frequently used language that is crucial to contemporary web development.

PHP

PHP (short for Hypertext Preprocessor) is the most widely used open source and general-purpose server-side scripting language used mainly in web development to create dynamic websites and applications (GeeksforGeeks, 2022). The server-side programming language PHP (Hypertext Preprocessor) is frequently used to create dynamic web applications. Due to its ease of integration with HTML, CSS, and JavaScript, it is a widely used open-source language that is especially well suited for web development. This allows for the building of interactive and user-friendly websites and web apps.

Instead of running in the client's web browser, PHP is processed on the server, which enables it to carry out operations like accessing databases and producing dynamic content. It can be used to build a wide variety of web-based applications, including forums, content management systems, and e-commerce platforms. Because it is simple to learn and use and provides a wealth of libraries and frameworks that can be used to accelerate development, PHP is well-liked among web developers.

Bootstrap

Bootstrap is the most popular HTML, CSS and JavaScript framework for developing a responsive and mobile friendly website (Javapoint, 2020). A free front-end framework called Bootstrap makes web development quicker and simpler. It is a set of design templates for responsive and mobile-first websites and online applications that are built on HTML, CSS, and JavaScript.

A sizable developer community now maintains Bootstrap, which was created by Twitter. It is intended to make it simple to develop responsive websites and web applications, which look and function effectively on a variety of devices, including smartphones, tablets, and desktop PCs. Button, form, navbar, and grid systems are just a few of the pre-designed Bootstrap components that may be quickly altered and integrated into a web project. Additionally, it comes with a set of JavaScript plugins that add extra functionality like modal windows and carousels as well as a set of CSS styles that are used to style and layout these components.

Because it is simple to use and provides a consistent, high-quality design that is extensively utilized across the web, Bootstrap is well-liked among web developers. Additionally, because of how easily it can be customized, designers may create original designs while still utilizing the framework's pre-built elements and styles.

Photoshop

Photoshop is a photo editing and raster graphic design software which allows users to create, edit, and manipulate various graphics as well as digital art (Walker, 2022). A graphics editing program called Adobe Photoshop was created and released by Adobe Inc. Raster graphics, such pictures and digital art, are what it is primarily used for when editing and producing them. Users can create and alter photos using a variety of Photoshop features and tools, such as resizing, cropping, retouching, color correction, and compositing.

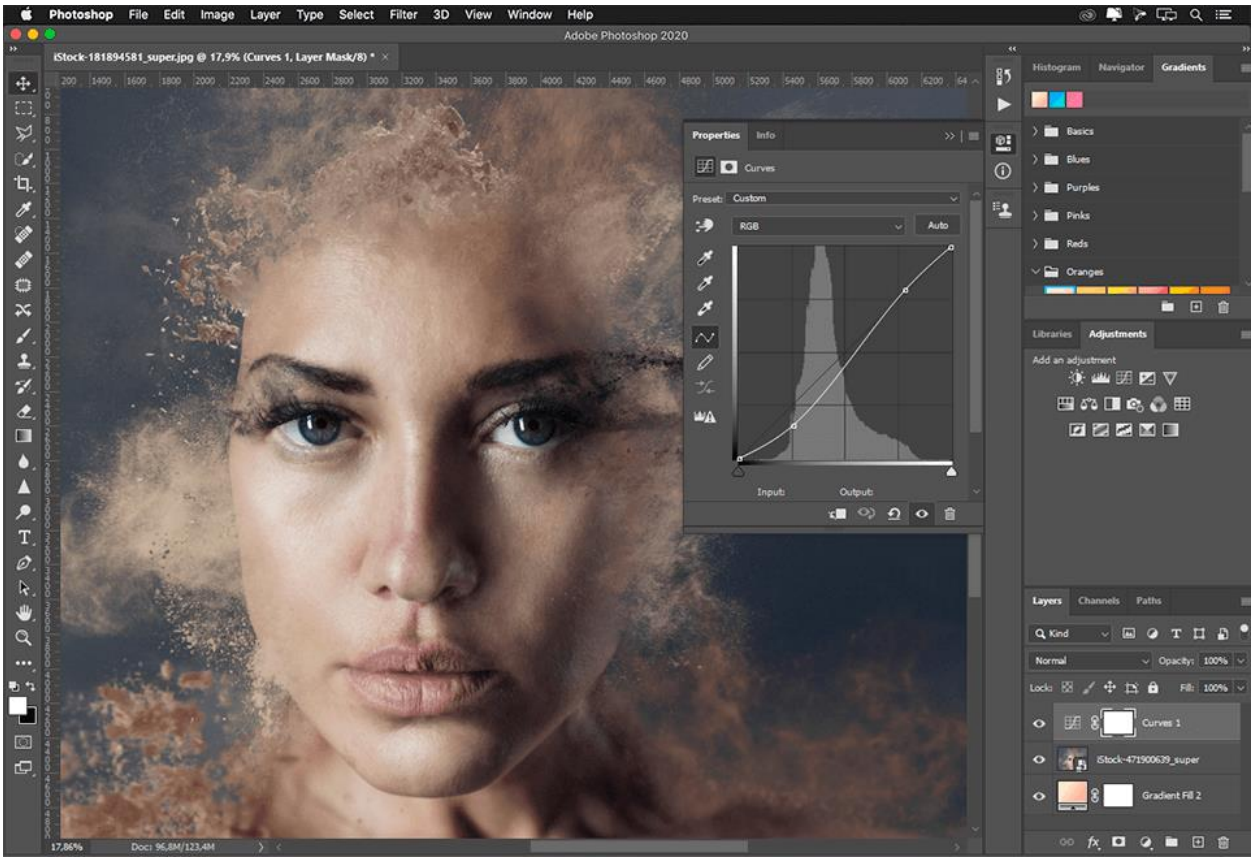

Figure 11

Numerous professionals, including graphic designers, photographers, web designers, and video editors, use Photoshop. It is a potent tool that is frequently combined with other programs from the Adobe Creative Cloud suite, such Illustrator, InDesign, and After Effects, in the creative sector. Both Windows and Mac operating systems support Photoshop.

Sublime text editor

Sublime Text editor is a sophisticated text editor which is widely used among developers. It includes wide features such as Syntax Highlight, Auto Indentation, File Type Recognition, Sidebar, Macros, Plug-in and Packages that make it easy for working with code base (TutorialsPoint, 2020).

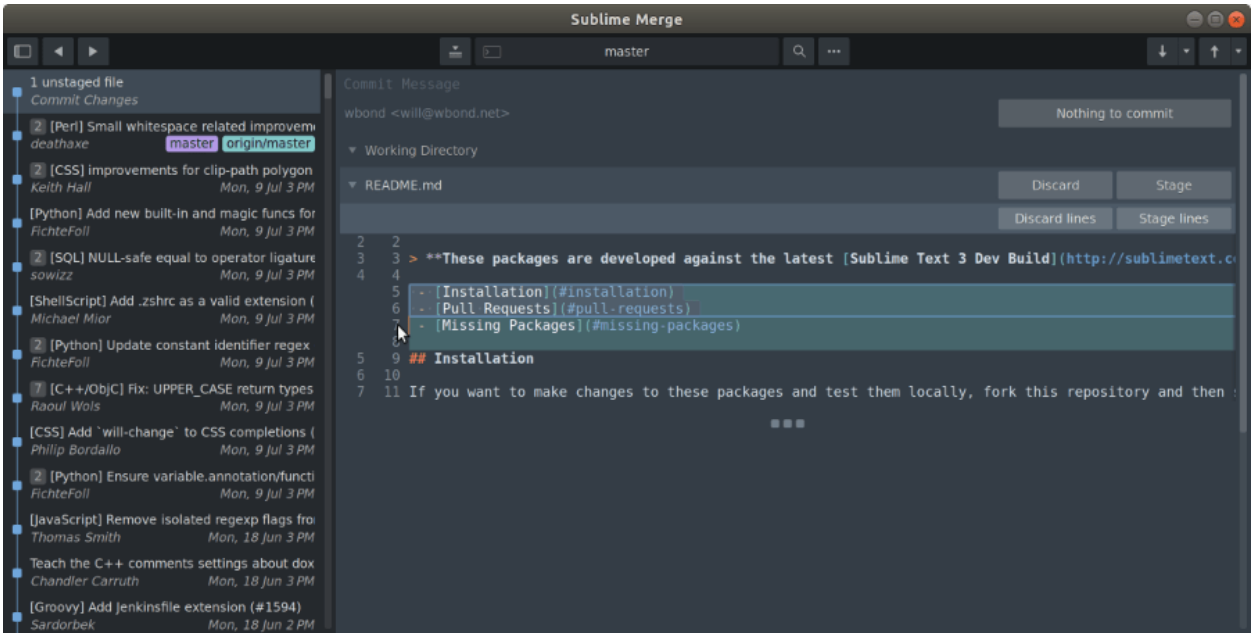

Figure 12

Programmers and developers frequently use the text editor software Sublime Text to create and edit code. It is renowned for its potent features, quickness, and usability. With the help of plugins, it supports a large number of programming languages and is simple to configure. Syntax highlighting, code completion, numerous cursors, and a customizable interface are a few of Sublime Text's standout features. The operating systems Windows, macOS, and Linux all support it.

Adobe after effect

Developed by Adobe Systems, Adobe After Effects is a digital visual effect, motion graphics, and compositing tool used in the post-production of movies, video games, and television shows. Using compositing and manipulating tools in After Effects, you can make intricate animations and special effects using still photos, moving images, and audio components. Additionally, you can use After Effects to create and deploy motion graphics for a variety of media, including film, television, the web, and mobile devices, as well as to add motion graphics and visual effects to live-action video. To produce professional-level visual effects and motion graphics, After Effects is frequently used in concert with other programs in the Adobe Creative Cloud suite, including Adobe Photoshop, Illustrator, and Premiere Pro.

Figure 13

Adobe premiere pro

In the post-production phase of making movies, video games, and television, Adobe Premiere Pro is a video editing program created by Adobe Systems. It is a software designed for professionals that is used by graphic designers, video editors, and other experts to produce high-quality video content for a variety of media, including movies, television programs, websites, and more.

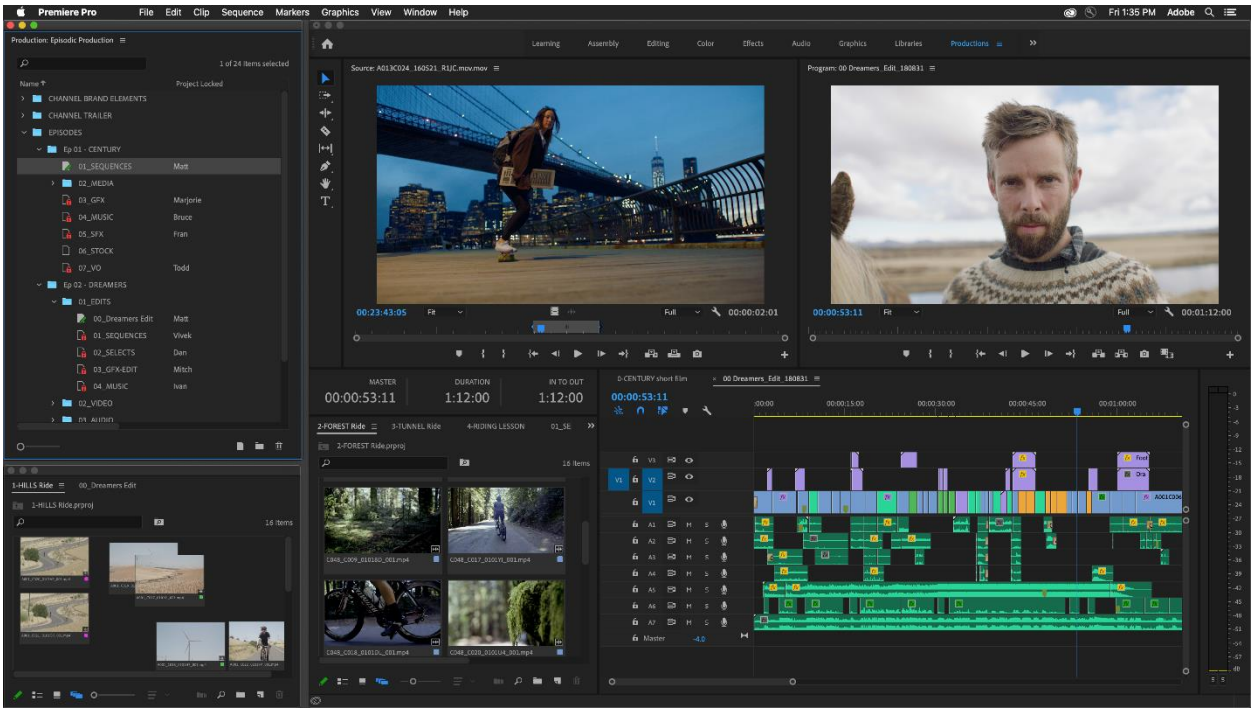

Figure 14

You can import and edit video and audio clips with Premiere Pro, add titles, transitions, and special effects, and then export your altered video in a variety of formats, including HD, 4K, and beyond. The Adobe Creative Cloud software suite, which also includes programs like Photoshop, Illustrator, and After Effects, allows users to access and share their work across platforms and devices. Premiere Pro is a component of this suite. It is a strong and adaptable tool that is frequently employed in the video editing sector.

jQuery

jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript (jQuery, 2020).

The JavaScript library jQuery makes it simple to control the HTML DOM (Document Object Model) and manage events since it is quick, compact, and feature-rich. Common activities like selecting components, animating elements, and handling events are made simpler, which makes it simpler to build JavaScript code that is compatible with a variety of browsers. One of the most extensively used JavaScript libraries is jQuery, which is frequently used in web development.

Figure 15

Example

```
$(document).ready(function() {
  $('#element').html('This is the new content');
});
```

Figure 16

Asp.net

ASP.NET is a web development platform, which provides a programming model, a comprehensive software infrastructure and various services required to build up robust web applications for PC, as well as mobile devices (Turtorialspoint, 2021).

Figure 17

Microsoft created the web application framework known as ASP.NET to help programmers create dynamic websites, web services, and web apps. Because it is based on the Common Language Runtime (CLR), programmers can write ASP.NET code in any of the.NET languages, including C# and VB.NET.

With ASP.NET, programmers may create online apps using a variety of methods, including server-side scripting, client-side scripting, and a hybrid of the two. Additionally, it offers a comprehensive collection of libraries and tools for creating online applications, including assistance with database access, security, and interactivity with other programs.

The HTML, CSS, and JavaScript generated by ASP.NET applications are compiled and run on the server before being transmitted to the client's web browser for rendering. As a result, dynamic, interactive information may be delivered to users by ASP.NET apps without the need for additional plugins or browser extensions to be installed on the client's computer.

Due to its simplicity of use and extensive set of features and tools, ASP.NET is a well-liked option for developing online apps. Many businesses and people use it to create a range of web-based applications, such as websites, web services, and e-commerce platforms.

Conclusion

As a result, I've concluded that the Domain Name System (DNS) is a hierarchical distributed naming system for resources connected to the Internet or a private network, including computers, services, and other resources. There are two types of DNS, which I adequately described in the task above. In addition, I explained how building, releasing, and using a website relate to communication protocols, server hardware, operating systems, and web server software. Following that, I think front-end and back-end technology are crucial to any website. In essence, front end refers to the user interface we see when accessing a website, and back end refers to the database on that website. They are crucial to the creation of websites. They are quite important in the creation of websites. SQL server technologies such as HTML, HTML5, CSS, and CSS3 are included in front end technology. return, etc. Ruby, Java, Link, etc. In the aforementioned goal, I outlined in detail how custom websites and online website development tools differ in terms of design variety, performance, accessibility, user experience, and user interface.

Introduction

I might create a proposal paper for a multipage website in this area, complete with realistic wireframes and a comprehensive list of customer and user requirements. I'll need to provide some of the website's webpage wireframes and the project materials for this. The next step was to build a website with at least 10 web pages and the capability to carry out CRUD operations. In order to show that the website has been appropriately developed, I'll give several screenshots in accordance with the circumstances.

Wireframe

A wireframe is a graphic depiction of the user interface for a website or application that shows the hierarchy and relationships between the different pieces as well as how the content is organized and laid out. Instead of intricate design components like colors, text, and graphics, plain forms and lines are often used to convey the structure and arrangement.

Early in the design process, wireframes are used to build a user interface's fundamental structure and to aid stakeholders in understanding how the interface will work and how content will be structured. Before beginning more in-depth design work, they are frequently used to establish a clear understanding of the project scope and to spot any potential problems or restrictions. Pencil and paper, specialized wireframing software, or even simple drawing software can all be used to generate wireframes.

Benefit

The benefits are:

Make Changes More Efficiently

During the website construction phase, it might be challenging to spot design faults. These errors frequently necessitate a complete redo of the task, which can waste a lot of time. Time is money, too!

It is simple to make modifications while using wireframes. It is far simpler to abandon a concept and try a different strategy. That is a fantastic reason to test a variety of solutions before settling on one that works rather than persisting with one that doesn't so you don't waste your progress and time invested.

Display the architecture of site

It is usually preferable to put everything out in a wireframe, even if you think you have a pretty good notion of how your site will look in your head. As a result, you can verify everything as many times as necessary and alter as necessary.

Wireframing can assist you ensure that everyone involved in the process is clear on the site's architecture and prevent any misunderstandings during the makeover.

Clarify website features before you build them

The most crucial factor is a website's functioning, which is even more critical than its aesthetic appeal. Wireframes are great for this reason since they let you talk about every essential website function that you wish to incorporate. It is more beneficial to have this conversation before to beginning development and design.

Focus on the user experience

Your redesign should always be centered on the user experience. Some of the most frequent causes of poor user experience are challenging and unclear navigation and a poorly defined hierarchy of information. Poor user experience can result in a high bounce rate, which can adversely harm your reputation and position in search engines.

With well-crafted wireframes that prioritize user experience over all other factors and enable you to test it before you begin developing your website, all of this can be avoided.

Determine website responsiveness

Although it might seem premature to assess website responsiveness during the wireframing phase, the reverse is actually true. It is a fantastic starting point for considering it and how your website will appear on various devices.

Your website must function well across all devices because mobile device usage, which is increasing, accounts for roughly half of all Internet users. You must consider how the site will seem on a desktop computer even if you design it with a mobile device in mind. This is best accomplished at the wireframing stage.

Make content development better

You are essentially forced to concentrate on the content for your website because wireframes don't focus on the visually appealing elements of web design.

Material writers can estimate the length of their content for each page using wireframes. In this manner, the information might appear to exactly match the layout of the website.

Additionally, wireframing enables you to arrange the content on your website in the most effective way, resulting in great readability, the right font size, and properly spaced headers and lists.

Save time and money

Wireframes, as we have discussed, can help you save a lot of time and money. It can speed up the process of making modifications and improve your understanding of the overall project, reducing the likelihood of more redesigns.

Your designer will comprehend what he is intended to achieve far better than he would if he had to start with only a notion in your brain if you get the practical portion of the makeover properly. He will be able to develop these elements and accelerate the realization of your concept.

User requirement

- Create a design document with appropriate principles and standard guidelines to produce a branded, multi-page website before developing the website
- 3-5 pages, each of those pages should use a similar style so that the pages look like they belong to the same website.
- Consistent navigation for all pages and organizing all the pages in a good structure.
- Create a contact us page and place the Google map on the contact page.
- Has a customer inquiry form on your website?
- Use some multi-media content e.g. audio, video, flash, etc.

Implemented while creating the website

Usability

The website should be simple to use and browse, with content organized logically and in a clear hierarchy.

Accessibility

Users with disabilities, such as those who are blind or have low vision, hard of hearing or deaf, or who have mobility issues, should be able to use the website.

Responsiveness

The website should have a layout that adapts to the size and orientation of the screen and should work well on a number of devices, including desktop computers, laptops, tablets, and smartphones.

Content

The website should have clear, succinct, and helpful content that is organized and presented so that users can easily comprehend it and discover the information they're looking for.

Visual design

The website should have a unified visual theme that runs throughout the entire site and reflects the organization's brand or identity.

Performance

The website should include optimized pictures and code that lowers the likelihood of mistakes or crashes, and it should load quickly and perform well.

Security

The website must be safe and should guard users' data and personal information.

Time schedule

As web developer we have a certain time to create a website. As a web developer of Nepal Bhoomi Limited, it took me to develop the website of the company it took around 30 to 40 days. we should manage the time of the future uses also, and the result should be successful.

Initiation

There is very important meeting between client and the project manager for the website. After meeting finish, we start to do research how website should be like design of the website, how we should host. After researching few days, we are ready to create the website.

Design

What will be the design of the website? We start to think the design of the website, like how will be the homepage, navigation bar, content and others. After that, we started to create the demo of the website and tested it was successful. There should be mobile view also. Overall, the estimated time was 1 week.

Design of My Website

Home page

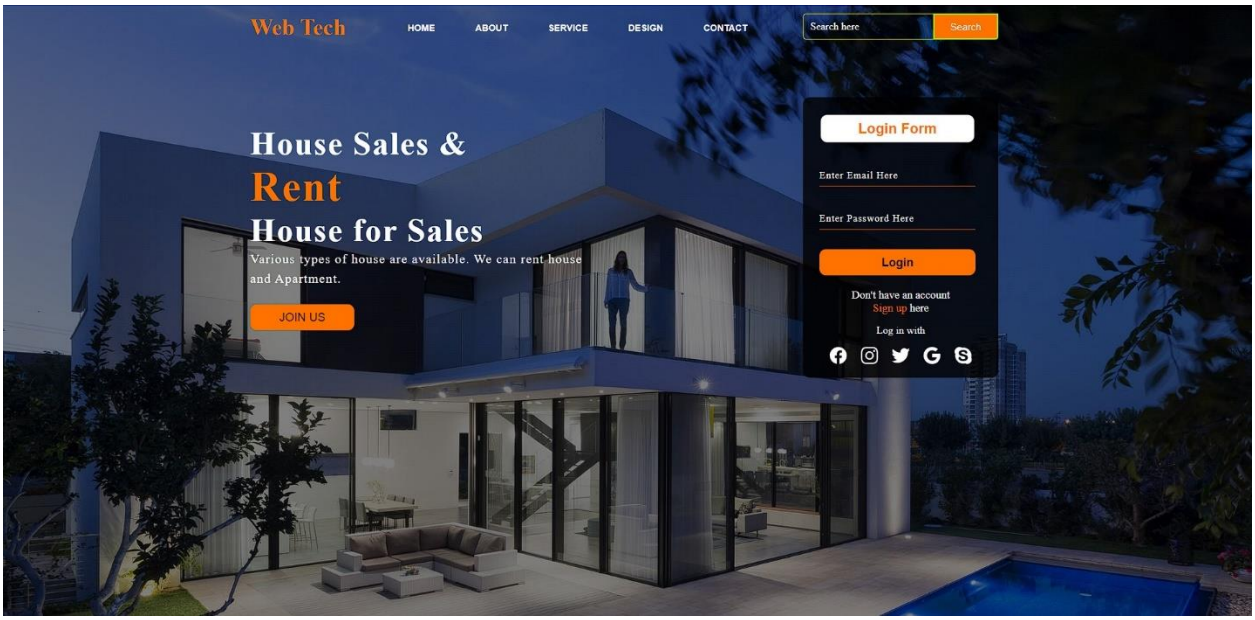

Figure 18

Coding

```
        <div class="menu">
            <ul>
                <li><a href="#">HOME</a></li>
                <li><a href="#">ABOUT</a></li>
                <li><a href="#">SERVICE</a></li>
                <li><a href="#">DESIGN</a></li>
                <li><a href="contact.html">CONTACT</a></li>
            </ul>
        </div>

        <div class="search">
            <input class="srch" type="search" name="" placeholder="Search here">
            <a href="#"> <button class="btn">Search</button></a>
        </div>

    </div>
    <div class="content">
        <h1>House Sales & <br><span>Rent</span> <br>House for Sales</h1>
        <p class="par">Various types of house are available. We can rent house <br> and Apartment.</p>

            <button class="cn"><a href="#">JOIN US</a></button>

            <div class="form">
                <h2>Login Form</h2>
                <input type="email" name="email" placeholder="Enter Email Here">
                <input type="password" name="" placeholder="Enter Password Here">
                <button class="btnn"><a href="#">Login</a></button>

                <p class="link">Don't have an account<br>
                <a href="#">Sign up </a> here</a></p>
                <p class="liw">Log in with</p>
```

Figure 19

About US

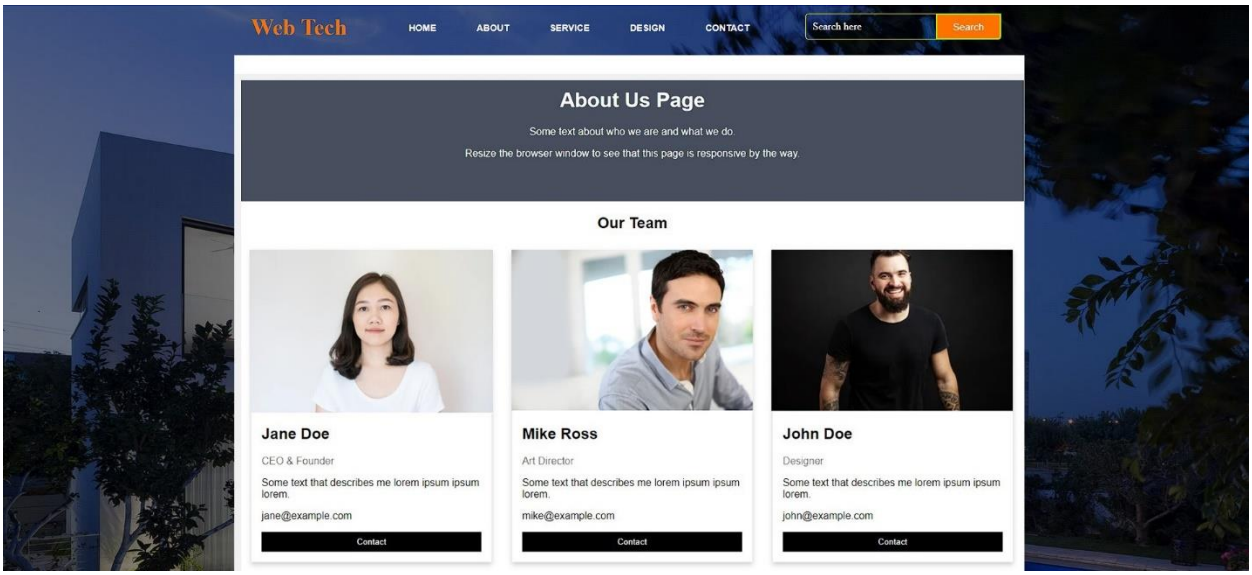

Figure 20

Coding

```
<div class="about-section">
    <h1>About Us Page</h1>
    <p>Some text about who we are and what we do.</p>
    <p>Resize the browser window to see that this page is responsive by the way.</p>
  </div>

  <h2 style="text-align:center">Our Team</h2>
  <div class="row">
    <div class="column">
      <div class="card">
        <img src="/1333.jpg" alt="Jane" style="width:100%">
        <div class="container">
          <h2>Jane Doe</h2>
          <p class="title">CEO & Founder</p>
          <p>Some text that describes me lorem ipsum ipsum lorem.</p>
          <p>jane@example.com</p>
          <p><button class="button">Contact</button></p>
        </div>
      </div>
    </div>

    <div class="column">
      <div class="card">
        <img src="/13444/team2.jpg" alt="Mike" style="width:100%">
        <div class="container">
          <h2>Mike Ross</h2>
          <p class="title">Art Director</p>
          <p>Some text that describes me lorem ipsum ipsum lorem.</p>
          <p>mike@example.com</p>
          <p><button class="button">Contact</button></p>
        </div>
      </div>
    </div>
```

Figure 21

Design

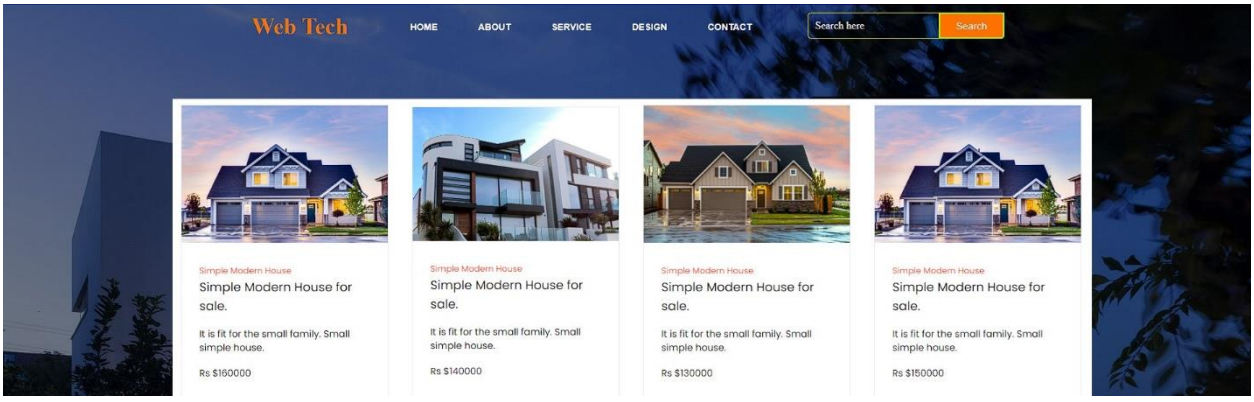

Figure 22

Coding

```
<body>
        <div class="container">
            <div class="box">
                <div class="img">
                    <img src="home1.jpg" alt="Home">
                </div>

                <div class="text">
                    <span>Simple Modern House</span>
                    <a href="#" class="title">Simple Modern House for sale. </a>
                    <p>It is fit for the small family. Small simple house.</p>

                    <a href="#">Rs 160000</a>
                </div>
            </div>

            <div class="container">
                <div class="box">
                    <div class="img">
                        <img src="home2.jpg" alt="Home">
                    </div>

                    <div class="text">
                        <span>Simple Modern House</span>
                        <a href="#" class="title">Simple Modern House for sale. </a>
```

Figure 23

Contact Us

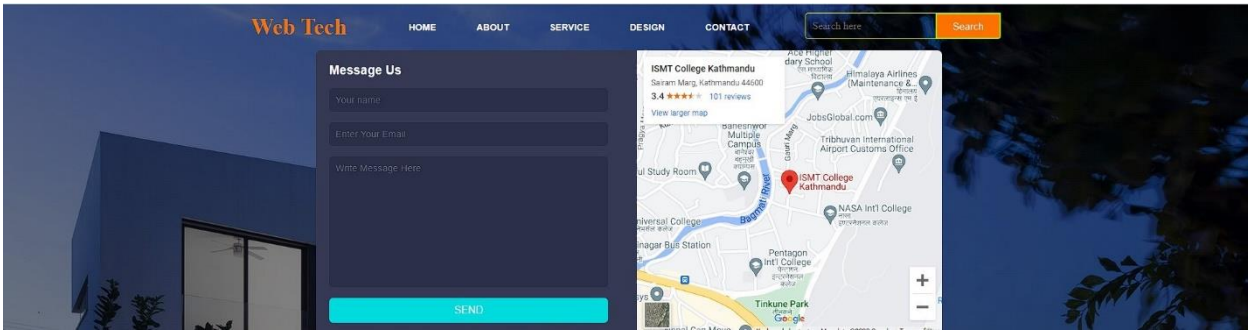

Figure 24

Coding

```
        <div class="menu">
            <ul>
                <li><a href="#">HOME</a></li>
                <li><a href="#">ABOUT</a></li>
                <li><a href="#">SERVICE</a></li>
                <li><a href="#">DESIGN</a></li>
                <li><a href="contact.html">CONTACT</a></li>
            </ul>
        </div>

        <div class="search">
            <input class="srch" type="search" name="" placeholder="Search here">
            <a href="#"> <button class="btn">Search</button></a>
        </div>
    <!--Section-->
    <section>
      <!--contact Container-->
      <div class="contact-container">
        <!--form-->
        <div class="form-container">
          <h3>Message Us</h3>
          <form action="" class="contact-form">
            <input type="text" placeholder="Your name" required>
            <input type="email" name="" id="" placeholder="Enter Your Email" required>
            <textarea name="" id="" cols="30" rows="10" placeholder="Write Message Here" required></textarea>
            <input type="submit" value="Send" class="send-button">
          </form>
        </div>
        <!--Map-->
        <div class="map">
          <iframe src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3532.9281485333445!2d85.34834132177514!3d27.68861552994583!2m3!1f0!2f0!3f
        </div>
      </div>
```

Figure 25

Test-log

Here is the test-log of my website:

S.No.	What was tested	Excepted Output	Actual Output	Evidence of Screenshot
01.	Login	If the customer enters the registered login and password, they should be able to access the website.	By inputting their registered username and password, users can access the website. A homepage is displayed to the user.	
02.	Registration Form	Users should be able to submit their username and password to log into the website.	When the login and password have been supplied, the phrase "*Registration Effective" displays at the conclusion. The folder stores the user's password,	

			email address, and account information. The password is shielded so that administrators cannot see it.
03.	Responsive	No matter the size of the screen on the device, the website's content should be adaptable.	Users using little phones, huge tablets, computers, and other devices can access the websites' content.
04.	User Authentication	Access to the website shouldn't be permitted without first registering and setting up a reliable username and	The user would be unable to access the website because the message "Login Failed!" would appear.

		password.
06.	Read/Retrieve	The user should be able to read the entire product.
07.	Edit/Update/delete	Any content that is booked or where someone wants to sell their residence should be editable, updateable, and deleteable by the admin.

Quality assurance

Quality assurance (QA) is any systematic process of determining whether a product or service meets specified requirements (Gillis, 2019). A method or collection of procedures known as quality assurance (QA) is used to make sure that a product or service satisfies a certain standard of quality.

QA creates and upholds standards for creating or producing dependable products. A quality assurance system enables a company to compete more effectively with rival businesses by enhancing work processes and efficiency as well as client confidence and a company's credibility.

QA entails tasks including going over specifications, testing items, and making sure they adhere to appropriate standards. Prior to a product or service being given to a customer, quality assurance (QA) aims to find and avoid problems in order to make sure it meets the needs and expectations of the user. QA is a crucial step in the software development process since it helps to guarantee that the finished product is of a high caliber and satisfies the expectations of the client. The planning, execution, and management of the QA process are often handled by a group of QA specialists.

QA of My Website

Since its inception, I have been in charge of the website quality for the Web Tech Pvt. Ltd. (Nepal Bhoomi Limited). The overhead task employs a variety of testing techniques to see whether the anticipated outcome corresponds to the actual output. Integrate testing, unit testing, stress testing, and compatibility testing are some of these tests. A professional web developer assisted us in planning and discussing the needs. I generate fresh concepts for the layout and functionality of the website. No mistakes were found throughout the testing phase, and all tests were successfully completed. Given that the website satisfies all requirements, it should be appropriate. After creating the website, I threw it out there for evaluation to see how users responded.

Project Description (in brief)

Based on the needs of the scenario, I developed a web application with appropriate page connections, graphics, validations, and other features. residence, about us, Design, Message us, Login + home page. I experimented with a variety of various approaches to improve the online application for Nepal Bhoomi Limited. To make it more visually appealing, I used a range of photos and slides. The web application's phrases are simple to read because the choices for color, font, and size are all obvious. The recently created "Bhoomi's" project website is well-designed and opens depending on the user's demands. The application was developed with the aid of HTML, CSS, and PHP. The web application has functions including form validation, internal and external page links, and slide images. The newly created application will make it easier for customers or users to learn specific details about Nepal Bhoomi Limited, be simple to use, and surely draw in more people. Users will be able to supply exact and correct data thanks to these freshly installed systems, which will increase web application usage. Whaleship is utilized as a server-side scripting language, while HTML is used as a client-side scripting language in web applications. A style sheet called CSS is used to create appropriate designs for headers, forms, and web pages, among other things. The Bhoomi online application has two different kinds of users. They are the user and the admin. The user can browse the home page, the details of the articles, the cart, etc. after logging in. Additionally, users can contact admin with feedback. He can access the entire system and make modifications if an administrator login is available. For instance, administrators can add a gallery, log in or register as an administrator, modify and delete user, admin, and about information data, and check feedback messages.

Important feature of the project

- ✓ The online application for The Nepal Bhoomi Limited is nicely made with HTML and CSS
- ✓ The web application has sliders that show pictures of Nepal Bhoomi events or products, which enhances its appeal.
- ✓ The web application has functions including form validation, internal and

external page links, and slide images..

Checklist	**YES**	**NO**	**comment**
Have identified objects and data file structures required to design the system?	✓		
Have system requirement ben defined and are they clear?	✓		
Have front End and back End of the system has been designed?	✓		
Has the system been implemented in align with the proper?	✓		
Have been critically tested and reviewed the system or not?	✓		
Does the system solve the problem of the Clint?	✓		
Does the system fulfill the requirement of the clients?	✓		
Have developed the onscreen help form to assist the user of the computer program?	✓		
Note: please add and edit the checklist questionnaire for your system yourself.			

Significance of the project

- ✓ The HTML and CSS used in Nepal Bhoomi Limited's web application are well developed.
- ✓ The web application has a slider that displays images of Nepal Bhoomi Limited's activities, making it appear more appealing.
- ✓ It offers a variety of features, including sliding images, links to internal and external pages, and form validation is preserved in the web application.

Project limitation

- ✓ Although the online application of Nepal Bhoomi Limited is adequately developed with legitimate page links, images, validation, and other features, it still needs a number of improvements, such as good designing, proper user friendliness, and accessibility.

Feedback evaluation

Feedback evaluated by : Sparsh Shrestha	

Evaluation of the system:

Interface Design:

Forms, tables, buttons, text boxes, labels, and other elements are used to create the user interface for the Nepal Bhoomi program, together with the proper colors, fonts, background colors, and logos. The usability of the design has been helped by the use of graphic design. It has contributed to the impact on user performance. There are all the components needed to make it simple to use. Users can easily acquire and provide information by using basic CSS buttons and CSS styling.

Coding Architecture:

In the WebTech coding architecture, I used HTML and CSS. Using CSS, the project's styles were produced. The project makes considerable use of code in order to guarantee that the design is pleasing to users and administrators. The user-friendly links, pages, and buttons as well as the correctly verified forms assist users in obtaining accurate information about Nepal Bhoomi Limited. The security of web applications is much higher and more secure (server-side scripting language) due to the adoption of PHP as a coding language, however I haven't used php.

Database Design:

For the WebTech project's database design, I used the PHP-friendly MySQL server administration system. For the purpose of storing the details of each user and form, I made a separate table with the proper datatypes, primary, and foreign keys. In order to better manage the database's data entry, I've also constructed a relationship diagram.

Security:

The Nepal Bhoomi project was developed with a user authentication system for information access. The system is structured such that only authorized admins can access and edit the system's overall information.

enhancing its security. I agree once more with Mr. Rupesh Yadav regarding the use of

data encryption and decryption. Data is essential, regardless of the size of the company. Technology for encryption and decoding will help with data security. Regular users are limited to viewing data and sending input; the administrator is the only one with access to the full system.

References

Cloudflare, 2022. *Cloudflare.* [Online] Available at: https://www.cloudflare.com/en-gb/learning/dns/what-is-dns/ [Accessed 12 December 2022].

GeeksforGeeks, 2022. *GeeksforGeeks.* [Online] Available at: https://www.geeksforgeeks.org/what-is-php-and-why-we-use-it/ [Accessed 13 December 2022].

Gillis, A. S., 2019. *TechTarget.* [Online] Available at: https://www.techtarget.com/whatis/definition/Web-server [Accessed 12 December 2022].

Gillis, A. S., 2019. *TechTarget.* [Online] Available at: https://www.techtarget.com/searchsoftwarequality/definition/quality-assurance [Accessed 15 December 2022].

Gillis, A. S., 2022. *TechTarget.* [Online] Available at: https://www.techtarget.com/whatis/definition/Web-server#:~:text=A%20web%20server%20is%20software,and%20delivering%20webpages%20to%20users. [Accessed 12 December 2022].

HackerRector, 2021. *HackerRector.* [Online] Available at: https://www.hackreactor.com/blog/what-is-javascript-used-for [Accessed 13 December 2022].

Herbert, D., 2022. *HubSpot.* [Online] Available at: https://blog.hubspot.com/website/react-js [Accessed 12 December 2022].

IBM, 2021. *IBM.* [Online] Available at: https://www.ibm.com/topics/django [Accessed 13 December 2022].

Javapoint, 2020. *Javapoint.* [Online] Available at: https://www.javatpoint.com/what-is-bootstrap [Accessed 13 December 2022].

JavaPoint, 2022. *JavaPoint.* [Online] Available at: https://www.javatpoint.com/what-is-html [Accessed 13 December 2022].

JavaTpoint, 2022. *JavaTpoint.* [Online] Available at: https://www.javatpoint.com/what-is-angularjs [Accessed 12 December 2022].

jQuery, 2020. *jQuery.* [Online] Available at: https://jquery.com/ [Accessed 13 December 2022].

Lutkevich, B., 2020. *TechTarget.* [Online] Available at: https://www.techtarget.com/whatis/definition/framework [Accessed 12 December 2022].

Martin, M., 2022. *Guru99.* [Online] Available at: https://www.guru99.com/what-is-backend-developer.html [Accessed 12 December 2022].

mDevelopers, 2022. *mDevelopers.* [Online] Available at: https://mdevelopers.com/blog/a-brief-guide-through-laravel [Accessed 12 December 2022].

NS1, 2022. *NS1.* [Online] Available at: https://ns1.com/resources/primary-dns-vs-secondary-dns-and-advanced-use-cases#:~:text=What%20is%20Primary%20DNS%3F,IP%20address%20for%20the%20hostname. [Accessed 12 December 2022].

SearchengineLand, 2020. *SearchengineLand.* [Online] Available at: https://searchengineland.com/guide/what-is-seo [Accessed 12 December 2022].

Techopedia, 2020. *Techopedia.* [Online] Available at: https://www.techopedia.com/definition/25705/communication-protocol [Accessed 12 December 2022].

Techopedia, 2020. *Techopedia.* [Online] Available at: https://www.techopedia.com/definition/5411/website [Accessed 12 December 2022].

Turtorialspoint, 2021. *Turtorialspoint.* [Online] Available at: https://www.tutorialspoint.com/asp.net/asp.net_introduction.htm [Accessed 13 December 2022].

TutorialsPoint, 2020. *TutorialsPoint.* [Online] Available at: https://www.tutorialspoint.com/sublime_text/index.htm [Accessed 13 December 2022].

TutortialPoint, 2022. *TutortialPoint.* [Online] Available at: https://www.tutorialspoint.com/css/what_is_css.htm [Accessed 13 December 2022].

User, T., 2019. *Windowstechno.* [Online] Available at: https://windowstechno.com/what-is-caching-only-dns-servers/#:~:text=A%20caching%2Donly%20DNS%20server,the%20caching%2Donly%20DNS%20server. [Accessed 12 December 2022].

Walker, A., 2022. *Guru99.* [Online] Available at: https://www.guru99.com/introduction-to-photoshop-cc.html [Accessed 13 December 2022].

Zola, A., 202. *TechTarget.* [Online] Available at: https://www.techtarget.com/whatis/definition/bootstrap [Accessed 12 December 2022].