Web Application development (Company Portfolio-CODETREE)

Udergraduate Internship Report Submitted By

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Dissertation submitted by partial fulfillment for the degree of

Bachelor of Science in Computer Science

Department of Computer Science & Engineering

Independent University, Bangladesh

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Attestation

This is to certify that report titled "Web Application development Company Portfolio-CODETREE is completed by me, Salma Mojumder (1522406), submitted in fulfillment of the requirement for the Degree of Computer Science and Engineering from Independent University, Bangladesh (IUB).I express my deep gratefulness to my supervisor Mohammad Noor Nabi, Senior Lecturer, Department of Computer Science and Engineering, Independent University, Bangladesh, for his invaluable instructions, continuous guidance, constructive criticisms and thoughtful advice during pursuing this internship and preparation of this report.

Signature Date: 12 May, 2022   Name: Salma Mojumder

Acknowledgement

Above all else, I might want to express gratitude toward Almighty Allah for enabling me the continuance and to buckle down. It is my benefit that I had the chance to do an Internship in CodeTree. I might want to thank all the individuals on whom I do internship. I express my profound thankfulness to my supervisor Mohammad Noor Nabi, Lecturer, Department of Computer Science and Engineering, Independent University, Bangladesh, for his important guidelines, nonstop direction, helpful reactions and astute counsel during seeking after this temporary job and readiness of this report. I additionally express my profound thankfulness to Shah Razi Siddique(Managing Director and CEO, CodeTree, my Project Manager, CodeTree, web developer, CodeTree. Likewise, I express my profound thankfulness to all representatives of CodeTree for collaborating to assist me with completing this temporary job report. Last yet not the least, I want to thank my folks and other relatives for their endless help given to me.

 Salma Mojumder

Dhaka, Bangladesh

Letter of Transmittal

22 January, 2021

Mohammad Noor Nabi

Internship Supervisor & Senior Lecturer

Department of Computer Science and Engineering

School of Engineering, Technology and Sciences

Independent University, Bangladesh

Subject: Internship report on "Web application development for Company Portfolio-CODETREE.

Dear Sir,

It is my pleasure to submit to you my internship report on "Web application development Company Portfolio-CODETREE. It took me three months to finish this report. Due to some problems in this project, I had to face some difficulties to finish this report. The purpose of this report was to fulfill the requirements of the Bachelor degree of Computer Science and Engineering and simple implementation of what i learnt in my whole university life. I tried my best to make this report successful. . I would like to express my sincere appreciation and thanks for your help while doing the Internship. Thank you for your cooperation.

Yours sincerely,

Salma Mojumder

ID: 1522406

Department of Computer Science and Engineering

Independent University, Bangladesh

Evaluation Committee

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External Examiner . . . .

Signature . . . .

Name . . . .

Head of the department\Convener. . . . .

Abstract

The answer to these concerns is that a business website can provide so many more benefits. Establishing trust, strengthening your brand, forging better customer relations, and informing a wider group of people about your business's capabilities are all key benefits. Today, having a company website is as crucial as having a shop, office or telephone number. Research has found that 6/10 customers expect brands to have content online about their business. This website can make it easier at its simplest, this website provides a quick and easy way of communicating information between buyers and sellers. You can list your opening hours, contact information, show images of your location or products, and use contact forms to facilitate enquiries from potential customers or feedback from existing ones.

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Chapter 1

Introduction

1.1 Background

A website is simply a collection of web pages of codes that describes the layout, format and content on a page. The web server is a internet-connected computer that receives the request for a web page sent by your browser. The browser connects your computer to the server through an IP address.

The main purpose of this project is to give this company a complete outlook in digital. In this website company can easily show about their business. Which types of work they do and what types of services they provide and till now what types of works they have done. They can also communicate with customer through this. People can easily know about this organization through this websites. It also has their team information and which types of client till they work with. In this digital world a company website works as portfolio of a websites.

1.2 Objectives

There are lots of objectives of a company websites. Search engine optimization, well-organized content, user-friendly site, effective calls to action, increase conversion rate. Objectives: Providing quality content on your website, regularly adding new information, establishing trust, marketing your site on other websites and social media. Web design objectives is how to increase conversion rate. Web development objectives is how to make the website load fast, be responsive, etc. Marketing objectives is how to drive leads.

1.3 Scopes

Scope is based on the goals of your website and needs of your users. Let's define the scope of your website project by breaking it into two parts functionality and content**.**

Functionality: Design and Usability. Search engines understand that people want to view a website that is pleasing on the eye and is entirely useable. Mobile Friendly. Websites that work are well designed, data driven and mobile optimized.

Content: A website can have different types of content like text, visual content, images, e-mail messages, data, e-services, video files, applications etc. Web content is the key behind traffic generation to websites.

Chapter 2

Literature Review

2.1 Relationship with undergraduate studies :

CSE-307 System Analysis and Design:

This course has helped to develop the overall structure of the project before even starting to work with codes. All the required analyses that were necessary to be considered such as requirement analysis, flow diagrams, UMLs, Rich picture, Functional and Nonfunctional requirements, methodology, WBS, Gantt Chart, etc. were taught in this course.

CSE309-Web Application and Internet:

While working with the frontend design, this course was helpful. From this course, I have I learned basic HTML, CSS, Bootstrap, PHP, and JavaScript. Even though we were taught raw PHP , it was not difficult to use a framework because of the knowledge that I have gained from this course. This course was a huge help throughout the project as I have also learned the use of colors and features.

CSE-213 Object-Oriented Programming:

This course helped in working with objects, classes, inheritance, function chaining, etc. This course introduced me to Java which helped me throughout the project.

2.2 Related Works :

In my web development course I made a website for Rent, Buy & Sell, because of that I have a small experience of making a website. Which will be helpful for me to work on this project. And my course project I also work on the front-end part of that project. I also made a portfolio in that course.

I have also worked on games website front end in my company and also work on the company's portfolio.

Chapter 3

Project Management & Financing

3.1 Work-breakdown structure :

Work breakdown structure (WBS) is a method that breaks a project down into a hierarchy of deliverables, tasks, and subtasks. It's a helpful tool that defines a detailed cost or time estimate and provides guidance for schedule development and control. Essentially, using a work breakdown structure enables one to take a top-down look at the project and break it into the tasks and subtasks to completion. It's a simple, yet methodical, way of organizing and understanding the project scope in smaller, manageable components.
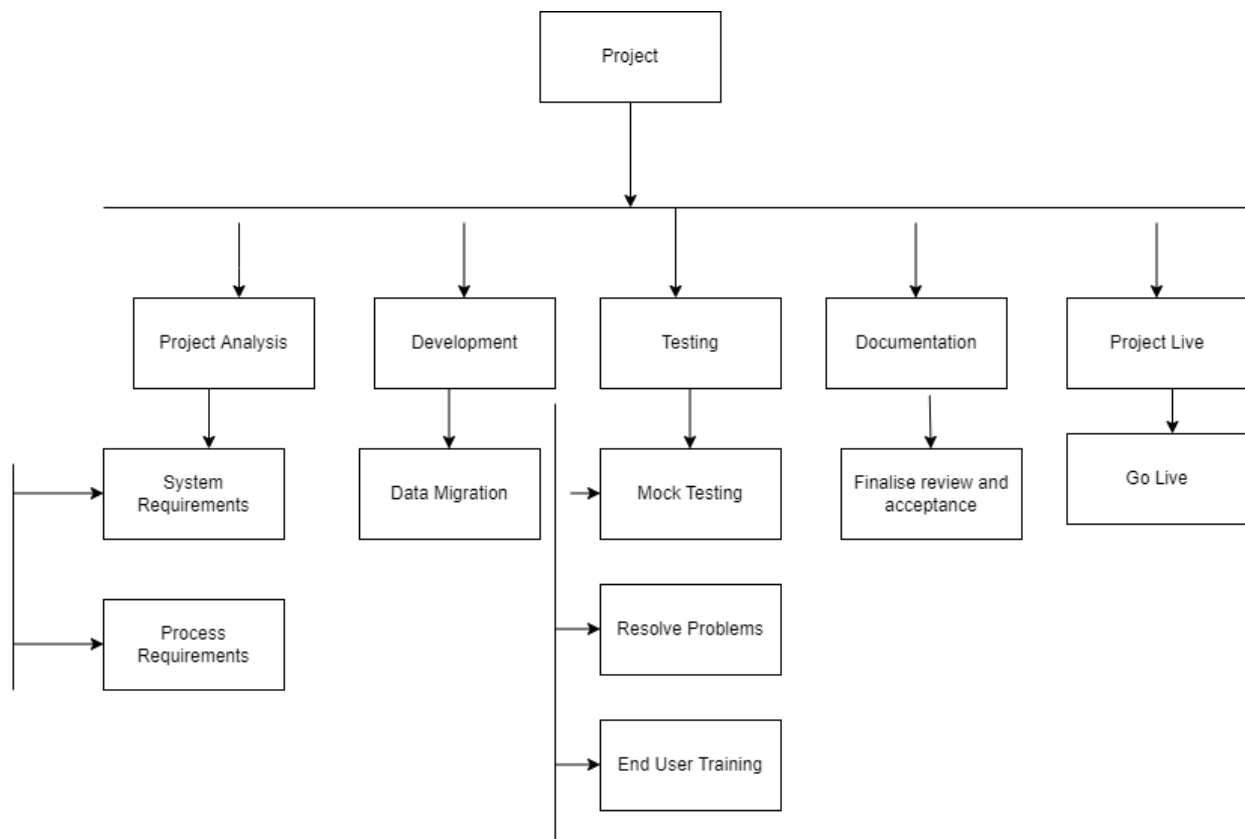
Fig 1: work breakdown structure

3.2 Process/Activity wise Time Distribution:

The estimated time required to end a project successfully defines process wise time distribution. This helps the developers create a mind map as to how efficiently they need to work in order to meet the deadlines. Time distribution is greatly needed to complete any project. The timeline designed below in a Gantt chart shows the developers what processes are completed, which are behind schedule and what is yet to be completed.

3.4 Process/Activity Wise Resource Allocation:

Generally a project is divided into many divisions and allocated to the designers, developers and testers. My project manager helped me to design and develop the project. Besides, we used computers, laptops, browsers, Some documents and videos to build up our project.

3.5 Financing :

For developing a project there are some costs needed. Sometimes it is less and sometimes it is huge. Everything related to the project and needed for the project is included in this costing section.

Cost Estimation Table :

Requirements	Amount(BDT)
Electricity bill (1months)	400
Transportation cost (1month)	3000
Mobile bill	1000
M2 SSD	3500
MONITOR	15000
DOMAIN/SERVER/HOSTING	5000
Total	27900

Table 1: cost estimation table

Chapter 4

Methodology

A software development methodology is the procedure of a software development work into distinct phases containing activities with the intent of better planning and management. It is also known as the development life cycle. There are various types of software development methodologies. Such as-

● Agile

● Waterfall

● Prototyping

● Iterative and incremental development

● Spiral development

● Rapid application development

● Dynamic system development model

● Extreme programming

 For this project, we have decided to select the agile methodology. Agile methodology is best for modify the process to fit their needs. Our project is developed for the company's website. So, we have sorted that agile software development would be the best use.

Agile Methodology :

Fig 2: Agile methodology

In the agile method we need to do planning, design, implementation, testing, deployment and evaluation then it goes live. And I am working on the implementation part.

The Agile software development methodology is one of the simplest and effective processes to turn a vision for a business need into software solutions. Agile is a term used to describe software development approaches that employ continual planning, learning, improvement, team collaboration, evolutionary development, and early delivery. It encourages flexible responses to change.

Agile methodology definition: Agile methodologies propose incremental and iterative approaches to software design. The customer has early and frequent opportunities to look at the

product and make decisions and changes to the project. The customer has early and frequent opportunities to look at the product and make decision and changes to the project in this method.

Chapter 5

Body of the Work

5.1 Work Description:

This project is related to where I am working as an intern. Their own company website. Their main purpose is to update their services. So they gave me their 2 service pages which are web development and app development services are available. In their website these 2 pages will show their company services. Which facilities do they serve and what types of works they have already done and also doing. Because of these services pages anyone can easily understand the company policy and their working skill. They also get the idea of the respected company. In these 2 services pages we can also know how web development and app development services are important in our progressive world. And how can it help our business now-a-days.

5.2 System Analysis :

To identify the objectives of a system, system analysis is conducted for the purpose of studying it and its parts. This is a problem solving process that determines how efficiently the system is running to accomplish its purposes. This contains some phases like planning, analysis, design, deployment and maintenance. It is a process of interpreting and collecting facts, finding out the problems and splitting up the system into its components.

Six Elements Analysis:

Process	Human	Non-computing Hardware	Computing Hardware	Software	Database	Network and Communication
Visit website	All users	N/A	Pc, Laptop, Smartphones and tabs	All browser	XAMPP	WAN
Signup/Sign in	Users who have access	N/A	Pc, Laptop, Smartphones and tabs	All browser	XAMPP	WAN
Admin panel	Users who have access	N/A	Pc, Laptop, Smartphones and tabs	All browser	XAMPP	WAN

Table 2: six elements analysis

Feasibility Analysis:

The analysis of a proposed project to determine whether it is feasible and should go ahead is called feasibility analysis. Confirmation of design, plan and strategy makes sense or not is the main priority of this analysis. This can be used to vailade assumptions, constraints, decisions and approaches. There are some main parts of feasibility analysis. They are –

❑ **Technical Feasibility:** In technical feasibility, evaluation of the software, hardware and the other technical requirements of the proposed system are performed. This evaluates the details

of how we intend to deliver a product or service to customers. Labor, 33 think materials, transportation, where our business will be located, and the technology that will be necessary to bring all this together. Our system has been developed using the current technology. Though PHP, XAMPP server, Mysql Database, HTML, CSS, BOOTSTRAP are existing from the past times, but still many applications are being developed with these throughout the world. Moreover, these technologies are very popular in the modern industry and are being used thoroughly.

❑ **Operational Feasibility:** Operational feasibility is a measure how well a proposed system solves the problems and satisfies the system requirements identified during the scope definition and problem analysis phase. It is dependent on human resources available for the project and involves projecting whether the system will be used if it is developed and implemented. Our web application has been developed in such a way that it can be conducted very easily It is a well planned system.

❑ **Economic Feasibility:** In economic feasibility costs and benefits are identified. It determines cash flow and assigns values to costs and benefits. Development costs and production costs are included in economic feasibility. This system has nothing but If this system can reach the users it will definitely bring benefits. On one hand it will reduce the costs of wasting pens and papers. On the other hand benefits will come depending on the uses.

Effects and Constraints Analysis:

Our web application will play a great role for our company.. It will save costs, minimize physical hardships and moreover it will make lives easier than before people can easily search it online from any browser. As it is a big project that is why we are planning to add some features.

Problem Solution Analysis:

This system has nothing but If this system can reach the users it will definitely bring benefits. On one hand it will reduce the costs of wasting pens and papers. On the other hand benefits will come depending on the uses.

❑ **Eye strain:** As harmful radiations are emitted from the pc, laptop and mobile screens then it may cause some eye strain problems while using it for a long time.

❑ **Internet:** As this system will require stable internet connection once it is launched. So during giving quizzes no internet may cause problems to the users who will be giving quizzes and survey.

❑ **Load shedding:** If anyone uses desktop and wifi routers then load shedding may create problems while using this system. Solutions: While there is a problem, there is a solution also. Now I am going to discuss about the solutions of the problems mentioned above - ❑ Eye strain solution: Brightness of the device should be maintained while using this system. ❑ Solution to the internet problem: Nowadays internet data is not so costly that we cannot afford that. So users can purchase data when they will appear for any quiz or survey. Our system will not consume a lot of data as well.

❑ **Load shedding solution:** As this system can be run from laptop and mobile that do not require continuous electricity connection so users can use them very easily.

5.3 Requirements Analysis:

Functional Requirements:

Functional requirements represented the form of input to be given to the system, the operation performed and the output expected. They are basically the requirements stated by the user which one can see directly in the final product.

Function	Input	Process	Output
Visit website	Enter the website domain	Load data from the server and database	Show website
Admin login	Enter the website domain	Load data from the server and database	Show website
Visitors enter the website	Go through the websites	Load data from the server and database	Show online websites

Table 3: functional requirements

Non-Functional Requirements:

Non-functional requirements are basically modifiability, performance, reusability, comprehensibility and security, which are often crucial for software systems. They should be addressed as early as possible in a software lifecycle.

Performance:

This defines how smoothly the Web application works in result and how much the system works in higher workloads. After launching our system, we checked the performance speed by gtmetrix. For image optimization, we used Tinypng for the fast speed load. We will do more research for the best performance. As the system is being used by the general people, so we are going to make some plans for fast performance.

Compatibility:

The usage of the Web application is very simple, we just want to make the web application user friendly as possible for the users. However there are a few minimum requirements needed to run the application. The requirements are common.

Hardware requirements :

❏ Pentium 5,1.4GHZ or above

❏ 512MB RAM or more

❏ Standard color display

❏ LAN/WIFI Network

❏ Any smartphone/Laptop/Desktop

❏ Keyboard & Mouse

Security:

How are the web application's data secured against any kind of attacks? As our data is very important for our company. For this, we have validated everything.

Usability:

Usability is how easy the system is for the user. Our application is already user friendly. So, there is no problem running the application for any user.

5.4 System Design:

UML Diagrams:
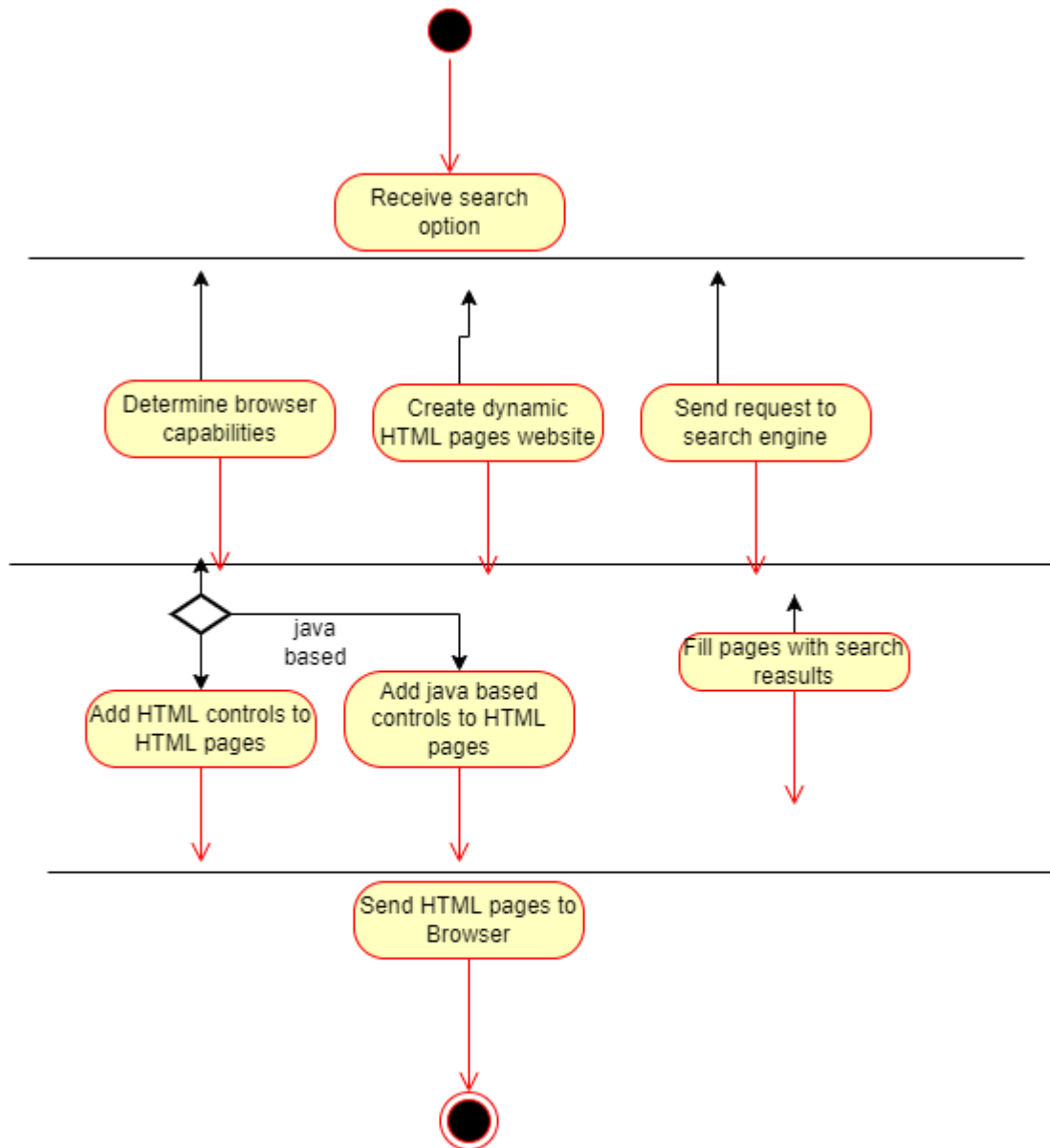
Fig 3: UML Diagram

Data flow Diagram:
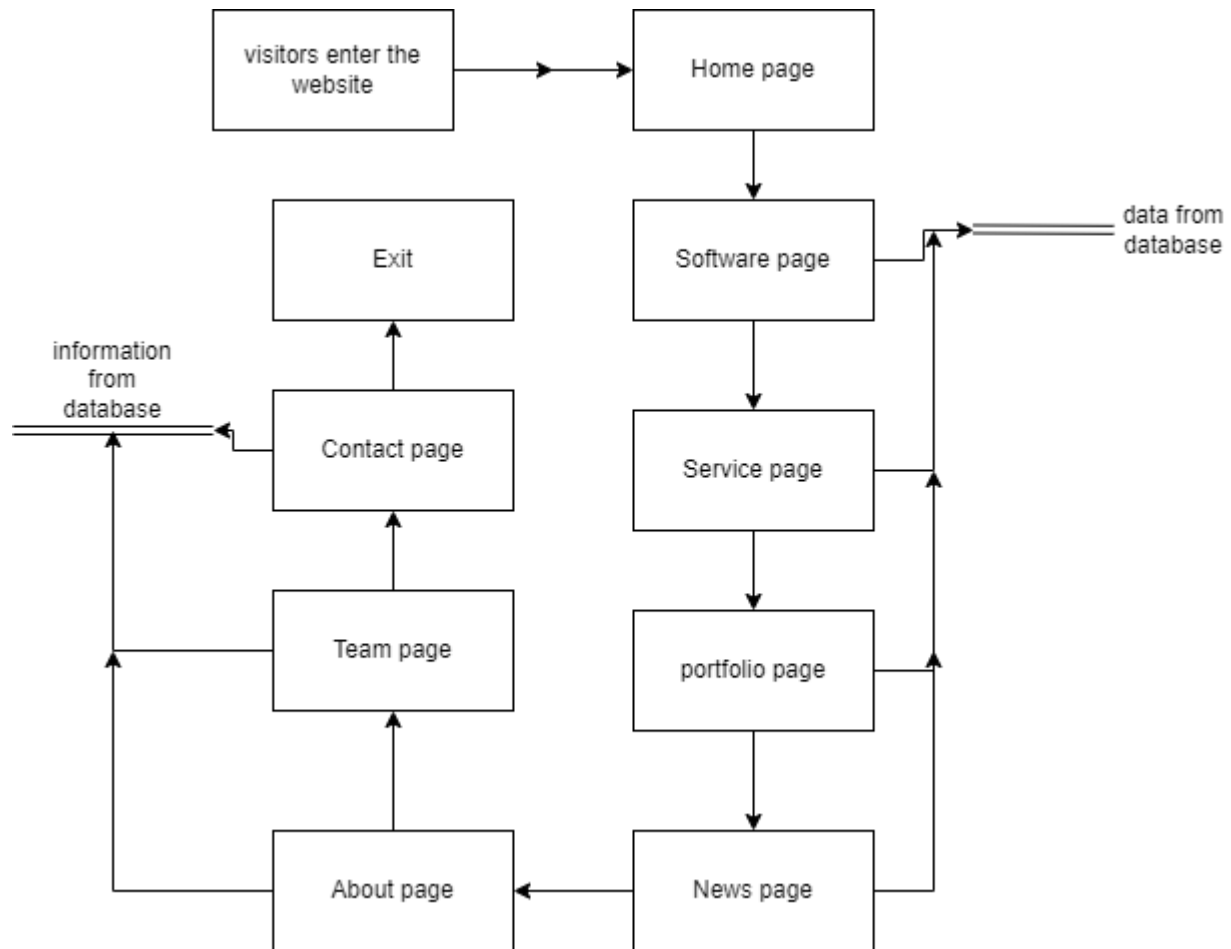
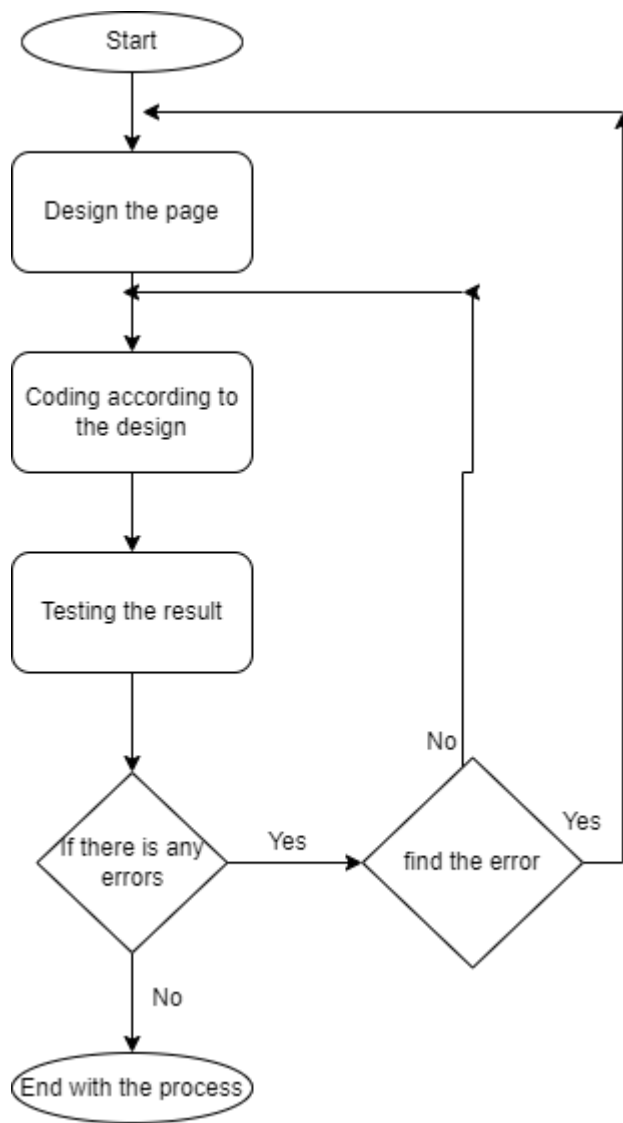Fig 4: Data flow Diagram

Process flow Diagram:

Fig 5: Process flow diagram

Chapter 6

Result And Analysis

When we are working on any project we always do our best for the good result. In my company website it shows my company's outlook. Having a website means customers are always able to find you anytime, anywhere. Even outside of business hours, this website continues to find and secure new customers. It offers the user convenience as they can access the information they need in the comfort of their own home, with no added pressure to buy. Plus, as most companies nowadays have their own website, there's every chance you could be losing customers to your competitors by staying offline.

So I worked on the company's service pages where anyone can easily get what this company serves. Any visitor can go through this and can understand the company's work in an easy way. They also can view it in any mobile or tab. Because it's also responsive.

In the web development page it showed how the company works on web development elements like one page layout, e-commerce website, portfolio website, education management website.

In the app development page it also showed how the company works on e-commerce app, fashion app, ride sharing app, ioT app. And in the end we can see the company's recent works and their portfolio.

Chapter 7

Project and engineering problems

7.1 Sustainability of the project/work:

Software sustainability is one part of software engineering. Sustainability should usually be considered from the first software stages of the development process. This process is not always feasible, because it is not easy to change how developers work. When any product can not sustain and fulfill the requirements of the end users in future times, it becomes a total waste of time, cost and hard work. That is why, before starting a project proper planning and analysis should be done.

Though I have to work on the company's services pages first, I had to make proper planning for this. So i have to discuss it with my supervisor of the company which are their main services and as far now what have they done. I also researched about their works and projects which have completed and which are running. So that i can get a proper idea how my page will contain and how it is going to be looked.

7.2 Social and Environmental Effects and Analysis:

Every work has some positive or negative social and environmental effects. Social and environmental factors should be highly maintained in every work. For sustainability of any projects social and environmental facts are very important. In my project my work is going to give my company a proper look about what services they provide. And also to succeed in today's online world and attract your constantly online customers, you need to have a strong online presence. However, it will take a little more work to reveal what this means. A website is just not for representing your business but a website opens many ways to get new and potential customers. A website allows digital marketing services for your business.

7.3 Addressing Ethics and Ethical Issues:

Ethics is the discipline dealing with what is good and bad and with moral duty and obligation. Actually ethics determine the characters. Projects that are beneficial for the users contain all the things that remain under positive ethics. Our system is totally secured.All the users data is preserved in such a way that others can not see them.

Chapter 8

Lesson learned

8.1 Problems faced during this period:

 When we start any projects it's very obvious we have to face some relevant problems. In my projects I have faced several problems. Firstly this website was made on laravel old version. So when I started to work on this project by that time a laravel update version had come. So on my computer the project doesn't run properly. I had to face another problem. I have to work on the service blade where there are several pages like web development, app development, digital marketing etc. All these pages are connected with a slug loop. So if I work on one page it will show on every page. So I had to fix that also.

8.2 Solution of these problems:

When we face any problems though working on a project, solving the problems makes us confident and makes us more informative about our project and work. So to get rid of this problem I have to update the whole project into a new version which was a big task. So it takes nearly 1 week for me to update the whole project. So to get rid of these slug loops I had to contact the company back-end developer because I don't have the admin panel access so they helped me to get through this problem.

Chapter 9

Future work and Conclusion

9.1 Future Work :

During this internship along with my project I also worked on some other projects where my supervisor checked my work. I created a front-end framework for the facebook login page and also the popup signup page. I also made a gaming website front-end framework similar to the name Bitmango. And in my project where I developed the company website service pages it will give any visitors a proper idea of what our company provides. I also made the Responsive of my works so it will be easier for those who can search the websites on mobile or tablets. It will give the website a standard reach. And any visitors can easily understand and know what they want to know about our company services. And company's can also add their future projects and information to that.

9.2 Conclusion :

Our web application is going to play a vital role for this company.This system is very user friendly. A website can be important to your business's success and growth. Some of the benefits of having a website for your business may be giving your business a digital shopfront. Some companies are generating the whole business through their websites. This states that they must have a website for their business. The website can be so profitable for their website and can act as a front end for it too.There are other additional services that enhance the effect of this website. anyone can find out about them by visiting or calling. There, customers can find many useful and important points that relate to their comfort, cost and more.
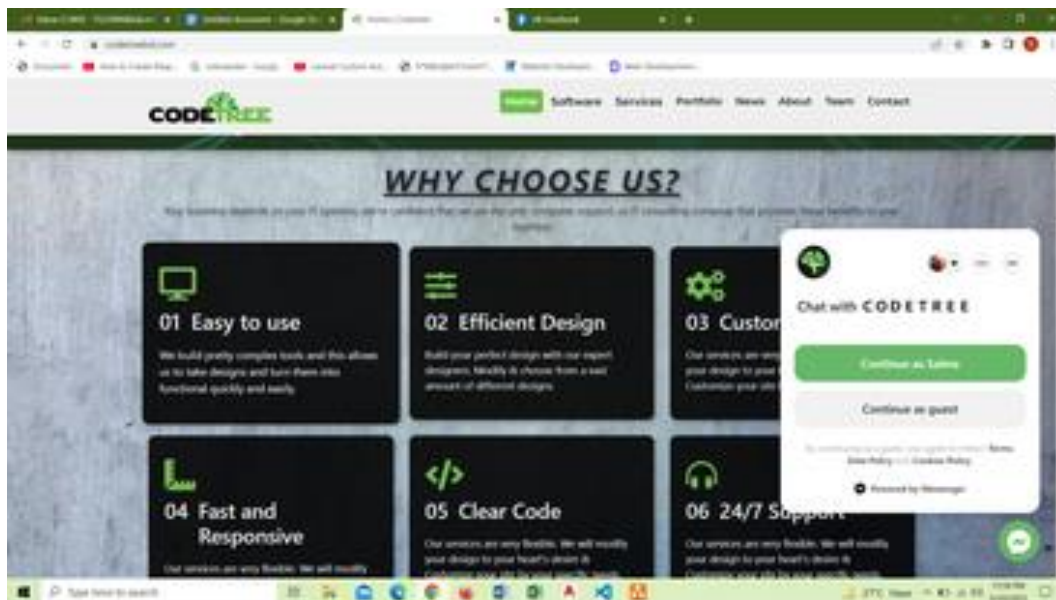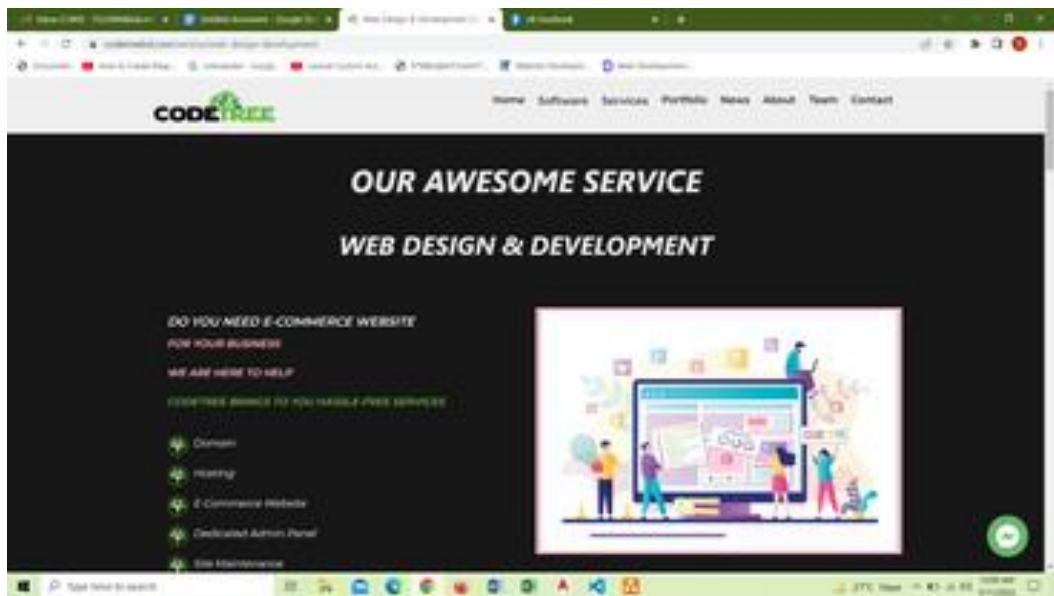
Fig: Home page

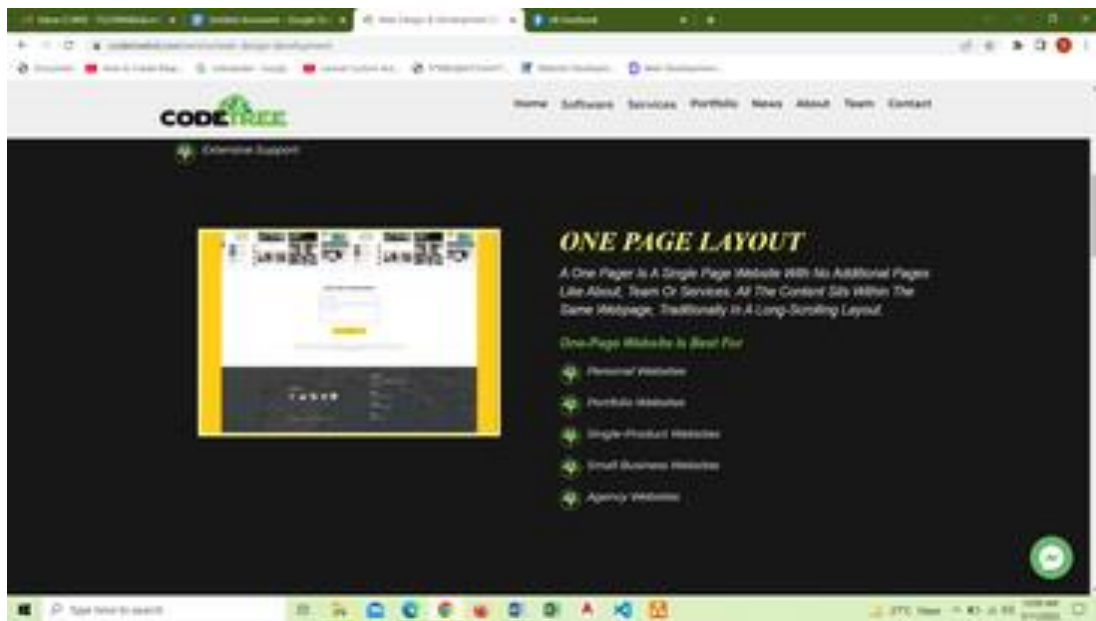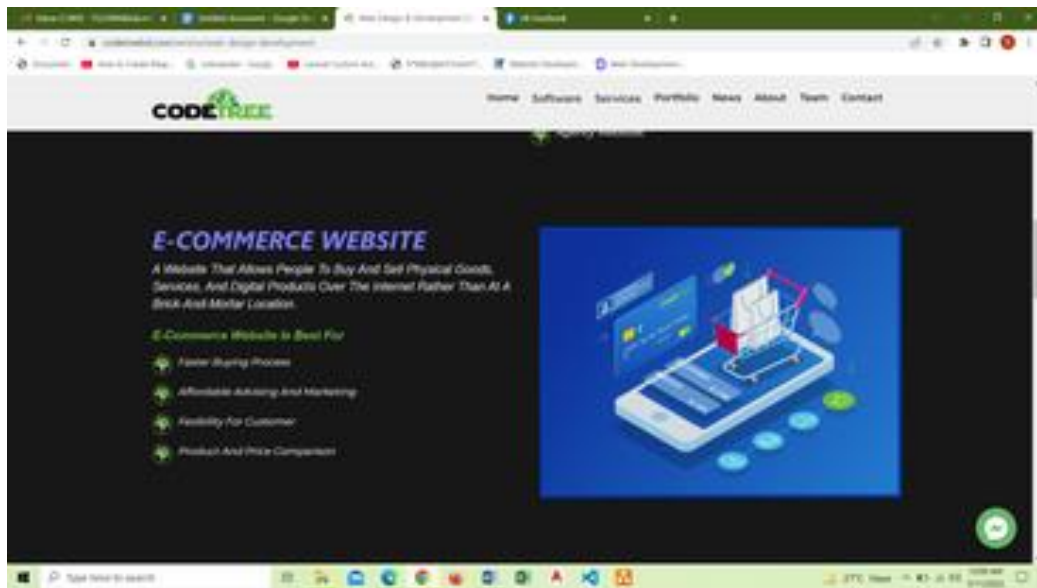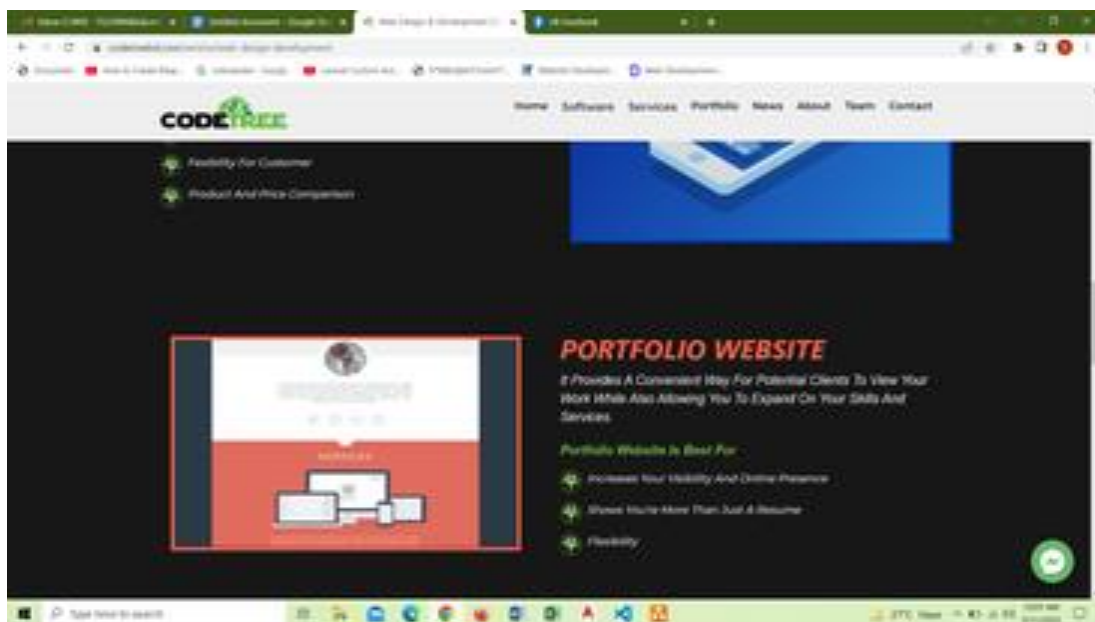
Fig: Home page

Fig: Web development page

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