

An Internship at GigaTech Solution

by

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An internship report submitted to the Department of Computer Science and
Engineering
in partial fulfillment of the requirements for the degree of
B.Sc. in Computer Science and Engineering

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Declaration

It is hereby declared that

1. The internship report submitted is my original work, completed as part of my degree at BRAC University.
2. The report does not contain material previously published or written by a third party, except where appropriately cited through full and accurate referencing.
3. The report has not been submitted for any other degree or diploma at any university or institution.
4. All main sources of assistance have been acknowledged.

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Approval

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Abstract

This is the sum-up of my internship experience at GigaTech Solution which is a leading development and software company. GigaTech Solution solves gives efficient digital solutions and services. The internship was from April 4, 2025 to October 5, 2025. This Internship was a part of my academic requirement for Computer Science program at Brac University.

During the internship I worked as a Junior Web Developer and was doing web designing, developing and maintaining websites. My responsibility was both front-end and back-end development, testing the website features and learning more about framework and tools that are used in development environments.

The main objective of my internship was to apply my academic knowledge to the real life development projects and learning about new things to improve my technical skills and gaining practical experience and knowledge. Furthermore, throughout this internship I increased my skills in HTML, CSS, JavaScript, PHP and database management and learned about different projects. Finally, I meet with the clients in-person and gain more experience on how the project are delivered and related communication that takes place.

Broadly this internship was a valuable experience. In addition, this internship have given me the chance to learn many things and gain practical experience of professional web development. As a result, this increased my professional growth and have prepared me for the future challenges that I might face in the software companies.

Keywords: Web, Design, Development, Front-end, Back-end, HTML, CSS, JavaScript, Database, GigaTech Solution, Internship Report, Software Development, Hospital Management System, HMS

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Chapter 1

Introduction

I have availed an internship via CSE400 as a part of my graduation that offered practical instruction and mentoring. While these can be full-time or part-time jobs, with durations varying from three months to many months, I was lucky to have been employed for multiple months. As an intern, I was given a range of assignments and projects according to the company requirements while working under the supervision of experts in their industry in addition to having a secondary academic supervisor from the department. My internship was a fantastic chance for me. I was blessed to have studied, gotten experience, and have developed my work skills by participating in the internship. I was also fortunate to have improved my ability to interact with people and communicate during the internship. The internship helped enrich the CV which will eventually be valuable enough to provide excellent potential employment prospects.

Now I understand why around the world, internships are growing in popularity, and why more students are expressing interest in them. Though the students at BRAC University has three options: internship, thesis, or project, while some students complete internships and the majority of them work on their theses. As students are qualified to apply for an internship with a reputable company once they have completed 75 credits, I was able to apply and join the internship. An internship at a respectable company must last multiple months. As experienced, students should be available for the internship opportunity for a few reasons. These are the following:

- Helps the student to get familiar to acquaint pupils with real-world employment
- By applying what they have learned to real-world problems, students will be more equipped for their future careers.
- Students get the opportunity to learn new skills that can help them in the future.

1.1 Purpose of the Internship

The internship served multiple purposes like:

1. **Skill Development:** I wanted to develop more skills on web development, software development and mobile app development.
2. **Job Experience:** I wanted to gain more professional job experience.

3. **Understand Different Roles:** I wanted to understand different roles that are needed for the web development. For example the front end developer and back end developer.
4. **Reference for future jobs:** As I worked, I wanted to get reference for my future job which will be helpful for getting more jobs.
5. **Professional Communication:** I wanted to learn how to communicate professionally and efficiently which is important for success at a professional environment.
6. **Professional Networking:** I wanted to have a wider network of professionals as they are helpful and needed to make the work more efficient and improved.

1.2 Challenges

- Learning the CodeIgniter framework as all the video tutorials about it are not updated and sometimes the documentations may seem confusing.
- Learning to create a website mock up on Figma.
- Running the HMS software on local host with XAMPP.

1.3 Project Overview

The personal project developed after finishing my internship at GigaTech Solution is a Time-Stamped Note Management System. Furthermore, this project helps user to securely create, store, update and manage multiple personal notes. The system gives user the registration and authentication features to make sure that only the authorized user can access the data. This helps user to store important notes digitally. Furthermore, it automatically records the date and time when the note is saved.

1.4 Objective of the Project

The main Objective of the Time-Stamped Note Management System is given below:

- Analyze user requirements.
- Design system models.
- Develop a secure web-based note-management application.
- Implement user authentication and authorization mechanisms.
- Store and manage user data efficiently
- Deploy the application in a local server environment
- Prepare comprehensive technical documentation

Chapter 2

Overview of GigaTech Solution

2.1 Company Background

GigaTech Solution started on 2022. The goal at GigaTech Solutions is to assist businesses build a strong online presence by offering top-notch web development and digital marketing services. They provide any kind of digital consulting or solutions based on customer requirements [1].

2.2 Discount Rate

GigaTech Solution tries to provide its clients with the best available market discount rate as shown below.

The screenshot displays a promotional banner for GigaTech Solution. At the top, a blue banner reads "Get Premium Softwares at a discount rate!". Below this, four software products are showcased, each with a "Sale!" badge and an "ADD TO CART" button. The products and their prices are as follows:

Product	Original Price	Discounted Price
All In One WP Migration - Unlimited Extension	₹7,500.00	₹500.00
Astra Pro Theme - Single Site License	₹6,500.00	₹500.00
Divi Theme - Single Site License	₹9,500.00	₹500.00
Microsoft 365 Premium - Single License	₹10,000.00	₹4,500.00

Figure 2.1: Discount Rate

2.3 Company Clients

Here are some of the Clients that are satisfied with GigaTech Solution company.



(a) R.S. Gold



(b) Archer Animation



(c) Pizza Inn



(d) Az-Ai



(e) RD Infrastructure



(f) Luck & Lux



(g) The Red IT



(h) Glamifield



(i) MKR Group



(j) Nowab Ali Master
Foundation



(k) Imagine Properties

Figure 2.2: Company Clients

2.4 Search Engine Optimization (SEO)

Search engine optimization (SEO) is the process of making the website more visible so that it can appear higher at the top on the search result. Furthermore, SEO makes the website more visible so that people can find what they need more efficiently without paying for the ads. As a result, there is more traffic on the website so the website rank higher in Google search. In addition, it builds trust and credibility which brings more customers and readers.

2.5 Business Segments and Operations

GigaTech Solution Company provides many kinds of services[1] as described below:

- 1. Marketing on Social Media:** GigaTech Solution provides good social media marketing services to increase the online presence that can increase the activities and exchanges with the target audience. The GigaTech solution team have expert professionals that can make customized social media arrangement that helps to achieve the specific business objectives.
Social Media service consists of Social Media Arrangement, Content Making, Social Media Messages, Community Oversight, Social Media Insights and beyond.
In GigaTech Solution the social media is used to make useful connections, increase the awareness of the product and also increase communications. The GigaTech Solution encourages to use social media to achieve the business work efficiently.
- 2. Development of Web Pages:** GigaTech Solution gives all aspects of web development which helps the customer to gain a advantage in doing business as it provides the business with efficient and effective solutions. Furthermore it also provides the user with all the latest models to create a flexible, cordial to users and optically attractive web sites that meets all the needs of the user. GigaTech Solution gives both static and dynamic web site according to user needs. The professional experts on HTML, CSS, JavaScript and PHP etc provides custom made website according to business needs of the user. The GigaTech Solution is reliable company that provides fast and efficient SEO without any mistakes.
- 3. Development of Custom Websites:** In GigaTech Solution custom websites are made while discussing with the client to meet their preferences with the help of the development team.
- 4. Solution for WordPress:** There are fast solutions and work done by word press on GigaTech Solution. Here they also crafts custom WordPress plugins which makes the work more efficient.
- 5. Solution for E-Commerce:** There is solution for E-commerce. Building end to end online store with the highly secure gateways and spontaneous inventory management.

6. **Hosting and Domain:** There is hosting and domain for the GigaTech solution which gives reliability and are high performance hosting with 99.9% up-time and with proper scalable resources.
7. **Preservation and Maintaining the website:** GigaTech Solution works on managing smooth site migrations, and creating focused campaigns that convert site visitors into paying clients. They provide cutting-edge web development with strategic digital marketing to uphold and preserve the website.

2.6 Corporate Culture and Values

There are some cultural traits on GigaTech Solution they are

1. **Ambitious development:** Here the employees feel good to learn new things and it promotes a culture of learning [2].
2. **Supportive community:** Here there is team work and there is good open communication among the employees which helps to work more efficiently. Here there is a supportive and open minded culture [2].
3. **Participation:** Here the decision are made with the employees participation and work [2].
4. **Focus on excellence:** Here the quality of work is more focused than the quantity which improves the quality of work [3].
5. **Reassuring of employees:** Here the the employees are given proper support so that they can do their work efficiently [3].

The values that the GigaTech Solution focus is are

1. **Integrity and Quality:** In GigaTech Solution they do not negotiate with quality and ethics.
2. **Passion and Expertise:** GigaTech Solution motivates to learn new things and to take responsibility of work
3. **Humility and Respect:** In GigaTech Solution they focus on working hard, to be humble and to treat everyone with proper respect.
4. **Inclusion and Diversity:** GigaTech Solution supports disadvantaged group for example women working in tech.
5. **Collaboration and Openness:** In GigaTech Solution inspire to work in team, do open communications and to make shared decisions.
6. **Innovation and Growth:** GigaTech Solution works to make new ideas and technologies.
7. **Fun and Engagement:** In GigaTech Solution there is enjoyable workplace and there is good social interaction.
8. **Accountability and Efficiency:** GigaTech Solution make sure to meet deadlines, to avoid inefficiency and to take responsibility.

2.7 Business Process

Here are the main steps of the business process of GigaTech Solution from interacting with the client to delivering services to post-delivery, maintenance services.

1. **Service Request or Inquiry:** The customer contact GigaTech solution with the help of the website or with the contact information.
They also have a store on the website where they can purchase product, themes and plugins [1].
2. **Scoping or Proposal:** They discuss with the customer about the requirement for example what type of sites , features, hosting and marketing the customer needs.
They make a suggestion based on the customer's requirements.
3. **Agreement or Contract:** The GigaTech solution have terms and conditions, privacy policy and return/refund policy which are specified during the agreement of the contract [1].
4. **Development or Implementation:** The GigaTech solution have custom themes and plugins for E-Commerce and Web Development projects.
There is also hosting, domain setup, design, migration and performance optimization for the software.
There is also marketing campaigns if it is required.
5. **Quality Assurance or Testing:** Here the performance is tested for example the speed of the website, responsiveness, the security and backup is also checked properly.
Here is SEO friendliness and cross-platform compatibility is also properly checked.
6. **Delivery and Launch:** When the development is completed it is deployed in the official hosting or it is transferred live.
Also it is ensured that the client has given the approval of the product for public availability.
7. **Maintenance or Support:** In GigaTech Solution there is also maintenance, support, backups, security updates and troubleshooting for the product.
8. **Education or Training (Bootcamps):** In GigaTech Solution there is Boot-Camp like Industry-Ready Curriculum which gives Full-stack training with real client projects and modern tools. The Bootcamp also gives Full-time experience which is Recognized as a 1-year job experience by leading employers. There is also career support which helps in Resume help, interview training and job placement [1].
9. **Feedback or Adjustment:** Here there the feedback of the client is also taken and monitored after the software is launched.
The adjustment and refinement is also done after the launch service.

10. **Billing and After-Sales:** The billing and after-sales are done according to the payment terms, refunds or return policy but if the products or services do not meet agreed standards then it is returned by the “Return and Refund Policy” [1].

2.8 Market Segments

The GigaTech Solution runs digital service sector which targets business and individual needs. The online presence and marketing support are given according to their necessary needs.

GigaTech Solutions offers:

- Web development which is also responsive and SEO friendly.
- Digital marketing
- Domain registration and web hosting
- E-commerce solutions and custom apps
- WordPress themes/plugins, Shopify themes and site redesign
- Maintenance and support

The main customer of GigaTech Solution are

- The Bangladeshi SMEs that do not have the in-house capacity to build, manage, host, and market a website.
- The Startups and e-commerce businesses that are needed to complete services for example custom website or app development, Shopify store creation, payment system integration, and digital marketing.
- The Freelancers, professionals, and personal brands that needs a professional website as well as SEO, social media marketing and a blog or any other supportive writing for their website.
- The Clients asking for experienced support, maintenance, and overhauls of any kind like updates and redesigns, security, backup, and monitoring.

The company mainly serves the clients in Bangladesh mostly at the Dhaka city but the services market of GigaTech Solution also is given in the other countries because the web development and digital marketing services can be given from a distance. GigaTech Solution gives web designs, web development, e-commerce fix, WordPress and Shopify themes and digital marketing including search engine optimization, social media and pay per click. These businesses and the market are growing fast as more businesses are going online with the use of Internet, the competition is increasing for investment in digital marketing.

2.9 Product Ranges

The product range of GigaTech Solution are:

1. **Design and Development:** In the GigaTech Solution there is web development that includes responsive and SEO-friendly websites which is very efficient to work with.
There is also custom web application developed according to what the business needs and demands.
The website are also redesigned here with the most updated modern UI or UX design.
2. **Platform-Based Solutions:** In GigaTech Solution there is both WordPress theme and plugins which are custom made according to the needs.
There is also Shopify theme developed here. There is also Shopify store design here.
Wix Website Development is also done in GigaTech Solution.
3. **Digital Marketing and Promotion:** In GigaTech Solution the Search Engine Optimization, Social Media Marketing like the Facebook, Instagram and the LinkedIn campaigns, Email Marketing and Pay-Per-Click (PPC) Advertising are done here.
4. **Domain and Hosting Services:** In GigaTech Solution there is Domain Registration that is brand-relevant and fast acquisition in addition there is Web Hosting which have a reliable performance, up-time and security.
5. **Maintenance and Support:** In GigaTech Solution the websites are maintained with updates, the bugs are fixed and the performances are checked.
The security of the website are monitored which help to protect the website from attacks.
There is also regular backups and technical support in GigaTech Solution.

2.10 Company Growth Plan

The GigaTech Solution offers many kinds of digital services. Their future growth plans are

- To offer more digital services efficiently for example web development, e-commerce, custom apps, domain and hosting, more WordPress and Shopify themes and custom plugins, digital marketing including Search Engine Optimization, social media and Pay Per Click, site redesign and maintenance.
- The main focus of GigaTech Solution is to combine technology and creative strategy that help the brands to turn visitors into customers.
- As the GigaTech Solution give more complete solution for the domain and hosting and digital marketing so they are placing as a full time digital agency.

2.11 Business Flow

The Business process in the company starts with client inquiry and lead generation as the client comes to the company and inquire about their needs and projects.

After business process comes the requirements analysis and proposal as the client requirements are explored and documented. Then if the client approves then contract agreement is done else the requirement analysis is done again.

The contract agreement and payments are done according to the requirements of the client the contract agreement and payments are fixed. Furthermore after receiving the payment the project design is done else contract agreement is done again.

There is project planning and design as before starting a project there should be a clear knowledge about what is being build. Furthermore, after finishing the project design client approval is needed if client approves then development and implementation is done.

In addition, through development and implementation the project is developed and implemented. Here the project is developed by coding and including all the features. Furthermore, after finishing the development the testing is done.

Then comes the testing and quality assurance here the tester tests the project that is developed and see if there is any kind of bugs. if there is any bugs it is informed to development so that they can fix it. Then if there is any bugs found the project is again put in the development phase so that the bugs are fixed. Furthermore after ensuring there is no bugs the project is deployed and launched.

In development and launch phase the product is made available to the users. The users can then use the product.

Furthermore, there is maintenance, support and updates as the product is launched it is maintained so that there is no bugs and given the security and support so that the project cannot be abused anyway and the bugs and security updates are given if necessary.

Lastly there is client feedback, reporting and upsells or Renewals here the client gives feedback and report if they have any issues. Here in upsells the goal is to increase the customer total purchase by providing so more advanced features and renewal is to renew the existing customer's subscription and service plan the goal is to continue the business relationship.

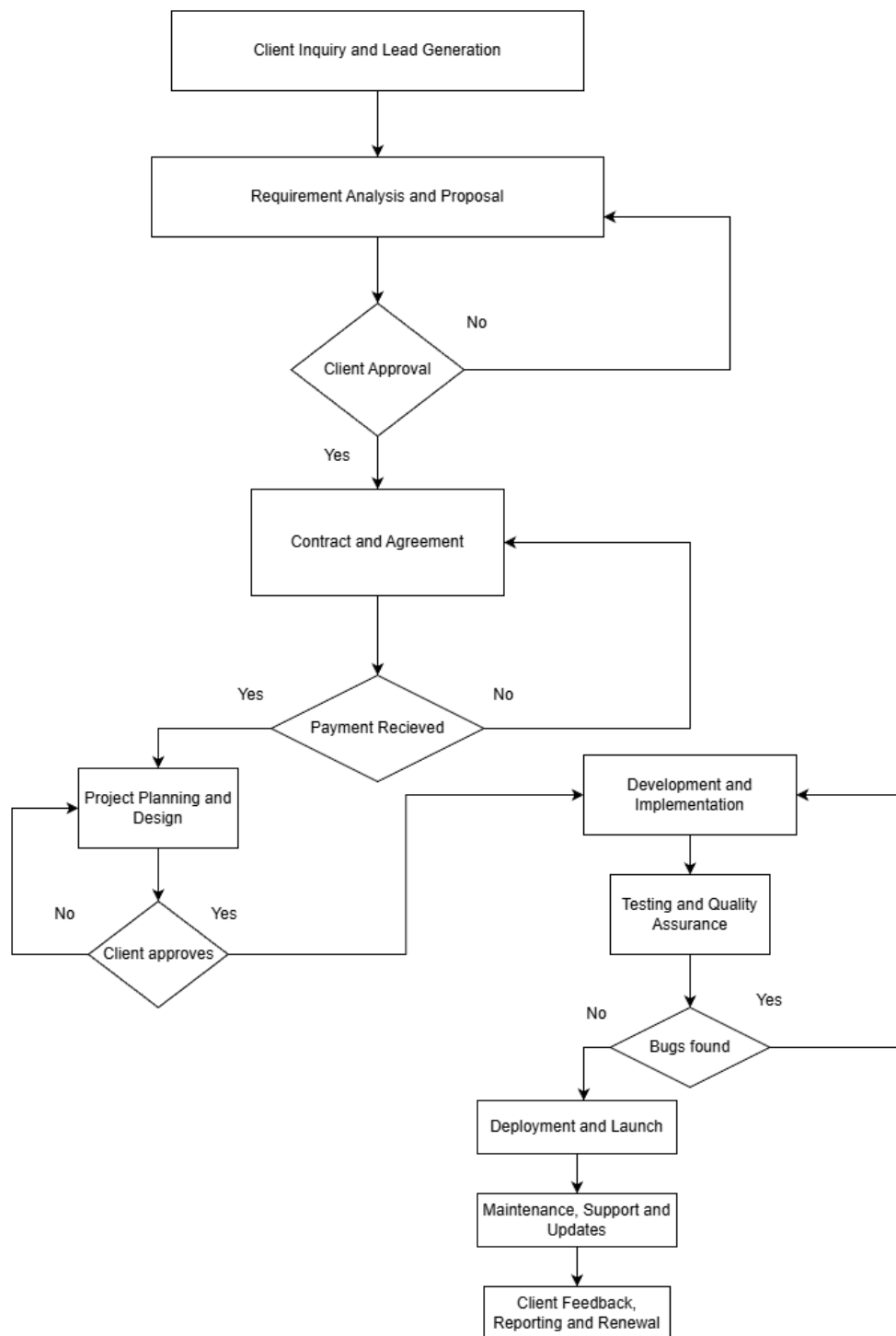


Figure 2.3: Business Flow

Chapter 3

Internship Activities and Responsibilities

3.1 My Roles

My role in the GigaTech Solution was Junior web developer during my internship at GigaTech Solution. My main focus was to support the web development team by learning more details about the website that they were developing, framework and contributing to the project that they were working on. Furthermore, I assisted them by exploring new ideas. The Junior web developer role helped me to gain more knowledge and to apply my academic knowledge in a professional environment which help me gain a practical experience of how software are developed in the GigaTech Solution company.

3.2 My Responsibilities

As I was working in GigaTech Solution as a intern I was given some responsibilities. I was working in GigaTech Solution remotely and from 9:00 am to 6:00 pm. After 6:00 pm I had to submit an update of what work I have finished which was regularly checked by my supervisor. I was given work like making the HTML for the website, modifying the website data, adding new page to the website and creating new data approved and provided by my supervisor to the website. I worked 6 days a week except Sunday which was also decided by my supervisor at GigaTech Solution.

1. **Learn:** I have learned more about WordPress web development, how to create page in WordPress, using the Elementor extension in the WordPress, creating a website mock-up with Figma, setting up a website with XAMPP, learned about the CodeIgniter framework as the HMS project that I worked on was based on CodeIgniter framework. Furthermore, I learned more about HTML, CSS and JavaScript as I made more HTML pages for the website.
2. **Exploring Products:** I have gained more experience by seeing the developing website and also suggested new ideas for the website as I was working on the website. Furthermore I explored and added new pages to the website which is regularly checked by my supervisor at GigaTech Solution.

3. **Proposing Future Products:** As I was working and creating pages and using the website as a user I faced some problems and short comings of the website. I proposed the fix and issues that I was facing by using the website so that the future website can be used more efficiently.

3.3 Specific Activities

There were some specific activities that I did during my internship time at GigaTech Solution. They are described below

3.3.1 Skill Match

In my interview, I was asked about many things, I was asked about my skills, I was asked about my strength and weakness, I was asked about my expectation from this internship and finally I was asked about my future goals. I answered all the question with confidence. After interview, I felt that there is a high chance that I will get the opportunity to do internship in GigaTech Solution company.

3.3.2 Meetings

As I was doing Internship remotely most of the meetings were done with google meet. The regular work checks were done on Telegram where my Supervisor Zafor Iqbal Sir created a Telegram group. I was instructed to give response "Good Morning" at 9:00 a.m. and give my update about the work that I have finished at 6:00 p.m. because I have to start doing my work at 9:00 a.m. and end it at 6:00 p.m. which was regularly checked by Zafor Iqbal Sir. I had to work 6 days a week except Sunday. Further more, there was once a time I had to meet Zafor Iqbal Sir physically to give a presentation about H.M.S. software to the client. I gained more experience that time as I get to know about the client and how the meeting with the client was conducted.

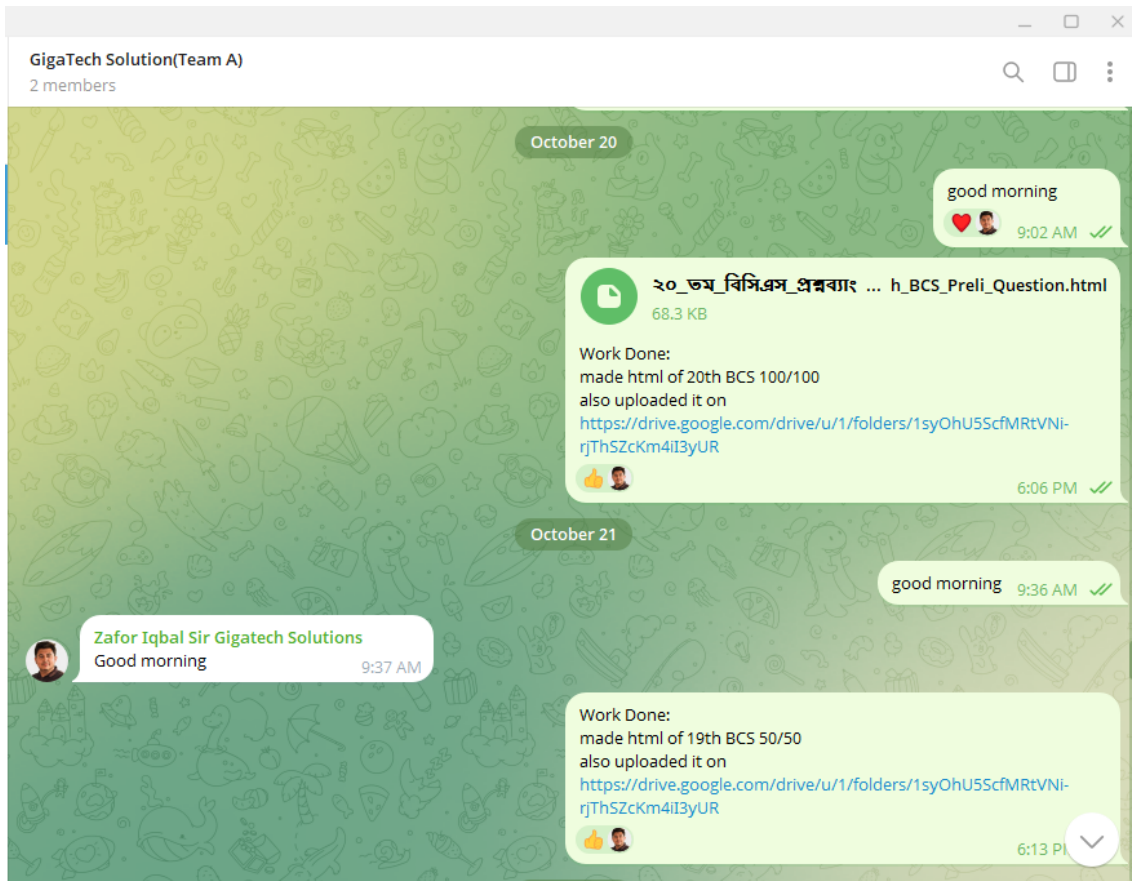


Figure 3.1: Telegram Group

3.3.3 Website exploration

I worked on <https://learnera.xyz/> website which was based on WordPress and worked on it and added new pages and worked on developing the HTML. I also had to update the plugins regularly before starting work as it was very important because there were problems with saving the work and data if the plugins were not updated regularly and the website also became very slow. Furthermore I had to add quizzes to the website. Finally I had to upload the HTML of the quizzes to the google drive link provided by Zafor Iqbal Sir.

I worked on <https://academy.innovationsofts.com/> website and had to make new courses on this website also had to make videos of how to add new courses on this website.

I worked on <https://gthms.com/hms/site/login> website. Here the hospital Management system(H.M.S.) was hosted. My work was to get to know more about the software and how it works. Further more I had to add different kinds of data to this website to make it more presentable for the clients.

3.4 Tech Skill Development

I developed my tech skills during my internship at GigaTech Solution as I had to work more on HTML, CSS so my HTML and CSS development skill has increased. I also worked in WordPress based website my knowledge about WordPress has increased

as I created pages and used Elementor plugin of WordPress to add new pages and edit the pages on the website. I was also given the H.M.S. software which was based on CodeIgniter framework and had to set it up on XAMPP to run it as a local host so my knowledge of XAMPP and CodeIgniter frame work has increased. Furthermore I did website mockup design on Figma and logo design on Canva so my knowledge about Figma and Canva has increased.

3.5 Common Skill Development

During my internship time at GigaTech Solution I learned some common skills they are

1. **Communication skills:** As I participated and communicated both physically and remotely my communication skills have increased. I also communicated many times with google meet, telegram and over the phone too my knowledge have increased. I can now present my ideas more clearly and confidently as I have meet with the clients and have presented the H.M.S. project to them.
2. **Writing skills:** As i have written many professional Gmail and reports of my work though out this 6 month internship, my skills of writing formal Gmail and reports about giving update has increased. I had to write mails many times to the H.R. of the GigaTech Solution company. To submit my academic and personal details I have written multiple mails. Furthermore, I also had to write update report regularly as I had to submit updates of my work regularly. So thats why my writing skills have increased more.
3. **Analyzing and Problem Solving:** As I worked during my internship I have faced many problems. I analyzed the problem and think about why the problem is happening and solved the problem with precise solutions.
4. **Time Management:** I have learned more about time management during my internship. As I had to regularly work from 9:00 am to 6:00 pm and give updates and response in time I learned to manage my time more efficiently.
5. **Discipline:** I learned more about the rules and regulation that the company maintained and to maintain my discipline and punctuality. Furthermore, I learned more about the work ethics as I was given some responsibility and work and had to complete the work on time. Finally if there was a problem like for electricity or internet issues that effects the work flow I had to report about the problem as soon as possible as I learned handled my work with commitment and accountability.
6. **Adapting to new environment:** I have also learned to adapt with the new environment as I had to work with new tools and software. I have gained more knowledge about many new tools like word press and WordPress plugins like the Elementor. Furthermore, I have learned to more open to feedback as it could improve my work.
7. **Management of Projects:** As I worked with projects and parts of project during my internship I have learned to manage them by planing the project

progress, making the project work in cross-platform like by using Elementor plugin there is option where I can see my website on pc, mobile and tablet. I also learned about the project life cycle as I physically meet with the clients and discussed about the projects and delivery of projects.

3.6 Familiarity with Official Documentation

As I worked with many software tools I learned more about the official documentation of the software. I got to know more about the software, how to install the software, the features of the software and how it works. The H.M.S. software that I modified had also an official documentation. There was written in details on how to run the software and the other requirements and tools needed to install the software.

3.7 Web Project

In <https://gthms.com/hms/site/login> the H.M.S. project I worked on modifying, increasing, changing the data and creating videos how to use the features of the software.

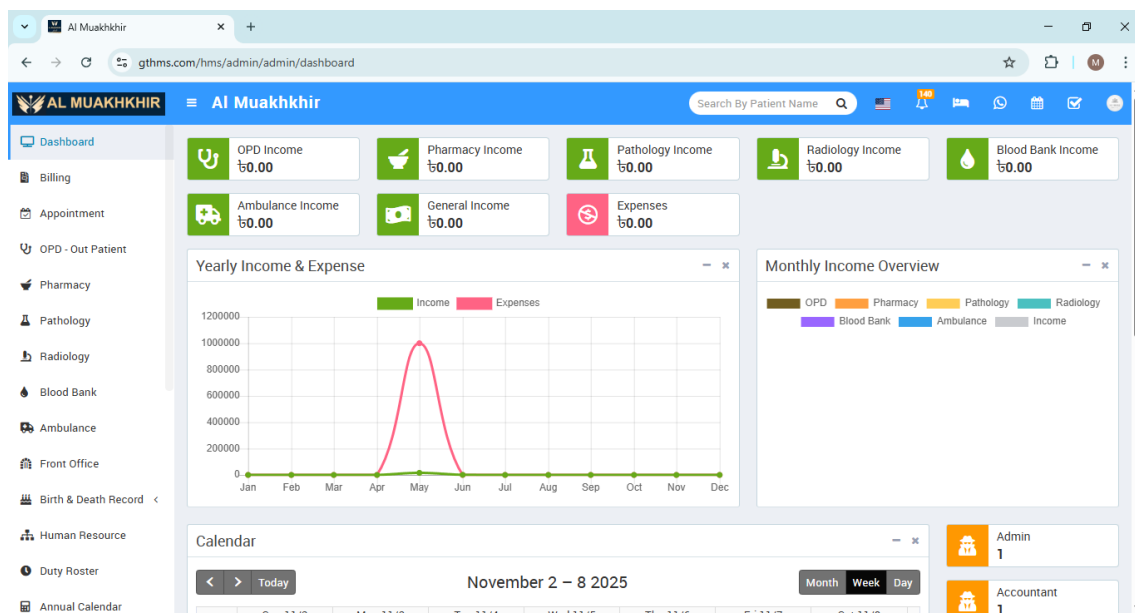


Figure 3.2: gthms.com Website

In <https://learnera.xyz/> I worked on creating the Bank Questions creating different courses and quizzes, creating the HTML of the questions adding slugs, categories and pages on the WordPress admin panel of the website. Furthermore I had to update the plugins of this website.

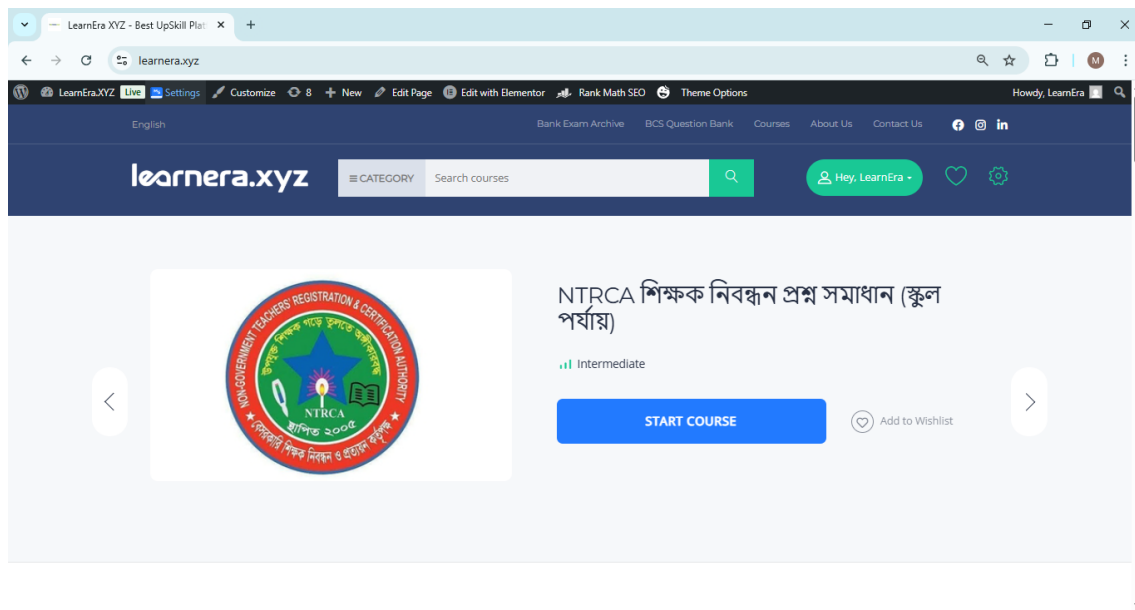


Figure 3.3: learnera.xyz website

In <https://academy.innovationsofts.com/> website I had to create new courses and also had to create videos on how to add create and edit courses to the website.

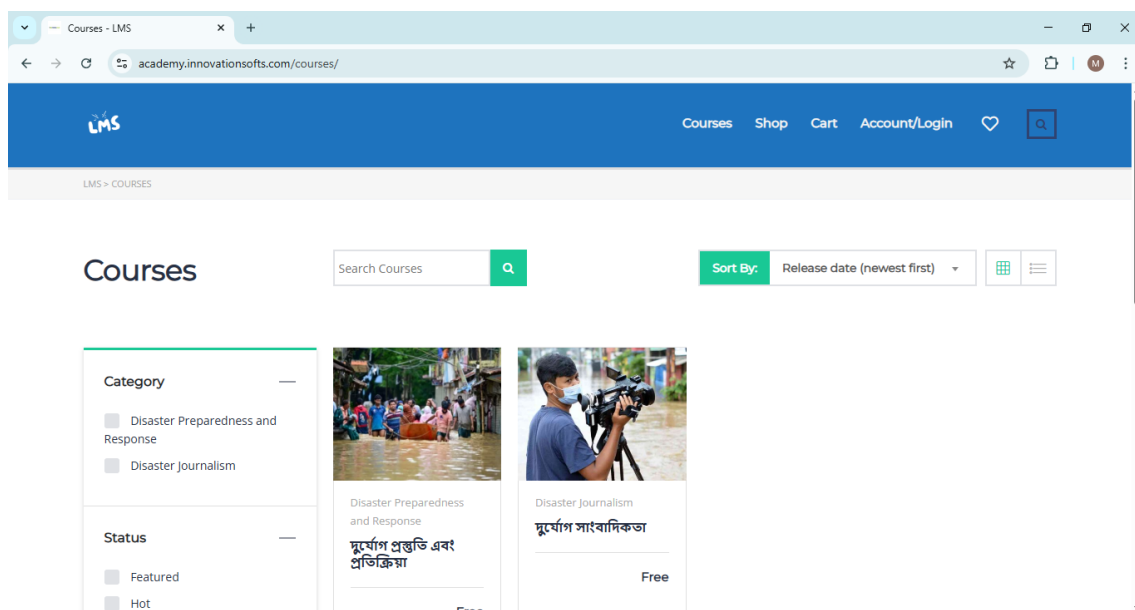


Figure 3.4: academy.innovationsofts.com Website

1. **Understanding customer requirements** During my internship time in GigaTech Solution I was called for a meeting in the office to meet with the clients and to give a presentation for the software. During the meetings the customer give details of what they want and expect from the website and also specified there requirements for the custom made part of the software. From this meeting I have learned more about the demands and features that the customer wants and more details of the their needs.
2. **Analyses of information:** I have learned to analyze the information and

accurately provide the solutions during my time of internship at GigaTech Solution. During my internship my supervisor Zafor Iqbal Sir gave feedback about my work and reports I analyzed and work on those feedback to improve my works and reports which satisfied my supervisor Zafor Iqbal Sir.

3. **Software design:** I have learned more about software design as I learned to created website mock-up on Figma, creating HTML and CSS for the website and using WordPress plugin like Elementor to create and design the website pages.
4. **Database design:** As I worked on modifying the H.M.S. software which was based on CodeIgniter framework I saw the practical use of database how it is related and used in the H.M.S. software. As I used the database and increased the data of different features by using the software and saw how the data are stored.

Chapter 4

Learning and Skill Development

4.1 Technical Skills

During my internship at GigaTech solutions I learned some skills which are necessary for the work.

1. **Languages:** I learned more about the HTML,CSS and Java Script as I used them in work. I used them to create the HTML questions for learnera.xyz website.
2. **Frameworks:** I learned about the CodeIgniter framework as there was Hospital Management System software that used this CodeIgniter framework to run. Furthermore I get to learn about the WordPress which is both control management system and a development framework.
3. **Local Server:** I learned more about XAMPP as I used it as a Local Server for the Hospital Management System. Furthermore I learned to run my Hospital Management System software in the local host through browser using `http://localhost`.
4. **Database:** I learned more about database and had a practical experience of how the database is used and how the data are stored in the database. As I worked and modified the Hospital Management software I gained more knowledge about database. Furthermore as I used the software and modify the data I saw how the data are being stored in the database.

4.3 Real Work Environment

As I did my internship on GigaTech Solution I experienced and learned the professional culture and about the work flow.

1. **Software Development life cycle:** I got to learn and experience more about the software development life cycle as I worked and finished my part in a project and see how it is delivered.
2. **Meetings:** I had to participate in meetings many times as I worked remotely and once I participated in meetings physically in the office. I used Google meet for the meetings. Furthermore I used Telegram group for the work, updates and communicating with my supervisor Zafor Iqbal Sir. In addition I used phone number to directly call my supervisor at the time of problem.
3. **Client Feedback:** I experienced and learn more about the client feedback. As I meet the client physically and present the project I got to learn more about the client feedback.

4.4 Optimization Of Website

On my internship at GigaTech Solution I learned about optimization of website.

1. **Increasing the performance:** I learned to reduce the page load time by changing the format of the image like changing the image format to webp as the size of the image decreases significantly and the page loads more faster.
2. **Improving the user experience:** I also learned more how to increase the user experience of the website by ensuring the website runs perfectly on different platforms like desktop, tablet and mobile.
3. **Content Quality:** I also learned and ensured how to keep and maintain the standard of quality of the content in the website according to the user demands.
4. **Issues on the website:** As I was using the website I found out problems like on learnera.xyz website there while writing questions I faced problems when writing equation as there was no separate option for writing the symbols, superscript and subscript. For that reason I had to make a list of text document file which contains all the necessary symbols, superscript and subscript for writing the equation [4].

Chapter 5

Internship Report on Web Development

5.1 Websites Worked

There are three websites that I worked on during my internship at GigaTech Solution. They are

- <https://gthms.com/hms/site/login> which is a hosting domain where the Hospital Management System Software (H.M.S.) is hosted for the client to have a clear view.
- <https://learnera.xyz/> which is an educational website
- <https://academy.innovationsofts.com/> which is also an educational website.

5.2 Tools Used

I used many kinds of tools during my internship at GigaTech Solution.

1. **Visual Studio:** I used visual studio as my code editor. I used many extensions here like Prettier extension to format my code, liver server extensions to run my code in the browser to see if it is running properly, Material Icon theme extensions to make the icon look more good, File Utils extensions to duplicate the file.
2. **WordPress:** I used WordPress to create and edit pages,edit slug, make new categories and to copy the HTML code in WordPress. I also updated the plugins regularly in WordPress.
3. **Google Drive:** I used google drive to store all my HTML files that I created. Furthermore, I used Google Drive to store all my videos of work.
4. **Camtasia:** I used Camtasia software to make videos of my work and edit those videos if needed.
5. **Canva:** I used Canva to make edits for the Hospital Management System software's logo.

6. **Figma:** I used Figma to create and edit website mock up.
7. **XAMPP:** I used XAMPP to run as local server for the Hospital Management System software.
8. **Avro Keyboard:** I used the Avro keyboard to write Bangla language on the HTML files.

5.3 Work Done

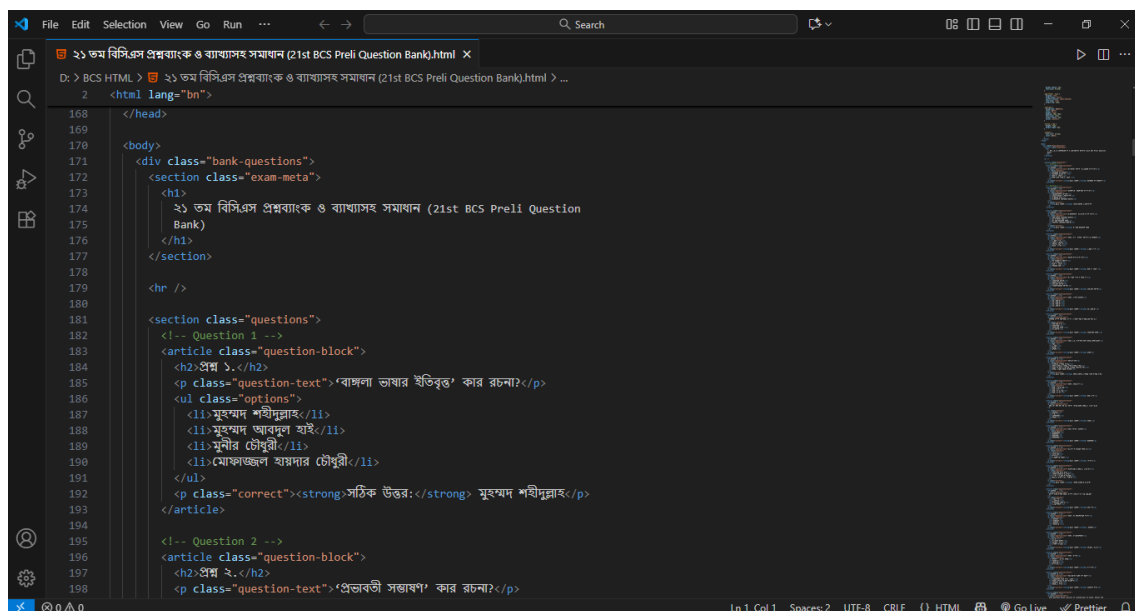
During my Internship time I worked to create HTML files, create videos of my work, create pages on WordPress and to modify data of Hospital Management System software which is based on the CodeIgniter framework.

5.4 Work Done at learnera.xyz Educational Website

On <https://learnera.xyz/> website I worked both on front end and back end. It is a WordPress based website.

5.4.1 Front End

I worked on creating the HTML, CSS and Java Script of the website. Furthermore, I created many HTML files for the different kinds of questions on the website. The questions were for BCS, Banks, Dhaka University admissions. Here is the google drive link for all the HTML file that I worked on. https://drive.google.com/drive/folders/1painDqH__cefpVO8AepmmuctYAjgUMDL?usp=sharing

A screenshot of a code editor window with a dark theme. The editor shows an HTML file named '২১ তম বিসিএস প্রশ্নাবলী ও ব্যাখ্যা সমাধান (21st BCS Preli Question Bank).html'. The code is in Bengali and uses HTML5 tags. It includes a meta tag for the language, a section for exam meta-data with a title and header, and two question blocks. The first question block contains a question about the Bengali language and a list of four options. The second question block contains a question about the author of 'Pratibha' and a single correct answer. The code is well-formatted with indentation and comments.

```
2 <html lang="bn">
3
4 </head>
5
6 <body>
7   <div class="bank-questions">
8     <section class="exam-meta">
9       <h1>
10        ২১ তম বিসিএস প্রশ্নাবলী ও ব্যাখ্যা সমাধান (21st BCS Preli Question
11        Bank)
12      </h1>
13    </section>
14    <hr />
15    <section class="questions">
16      <!-- Question 1 -->
17      <article class="question-block">
18        <h2>প্রশ্ন ১.</h2>
19        <p class="question-text">‘বাংলা ভাষার ইতিবৃত্ত’ কার রচনা?</p>
20        <ul class="options">
21          <li>মুহম্মদ শহীদুল্লাহ</li>
22          <li>মুহম্মদ আবদুল হাই</li>
23          <li>মুনীর চৌধুরী</li>
24          <li>মোহাম্মদ জাফর খান</li>
25        </ul>
26        <p class="correct"><strong>সঠিক উত্তর:</strong> মুহম্মদ শহীদুল্লাহ</p>
27      </article>
28      <!-- Question 2 -->
29      <article class="question-block">
30        <h2>প্রশ্ন ২.</h2>
31        <p class="question-text">‘প্রতিভা’ সত্ত্বাধার কার রচনা?</p>
```

Figure 5.1: Making HTML File

5.4.2 Back End

I worked on the Admin Panel of this WordPress based website.

- I worked on creating posts in the website.
- I updated the plugins regularly.
- I created many courses on the website.
- I created many quizzes on the website.
- I used the Elementor plugin to create many website pages on the website. Here is an example link of the page of website that I created with the help of Elementor plugin. <https://learnera.xyz/43rd-bcs-question-bank-solution/>
- I created slugs for the website.
- I created new categories of posts for the website

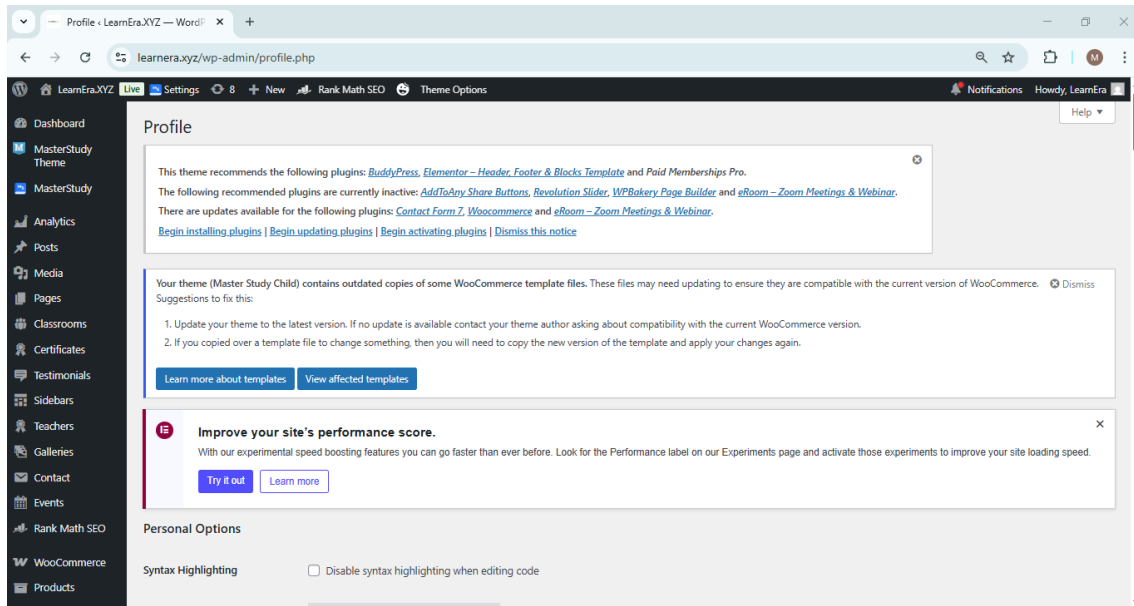


Figure 5.2: Admin Panel of learnera.xyz Website

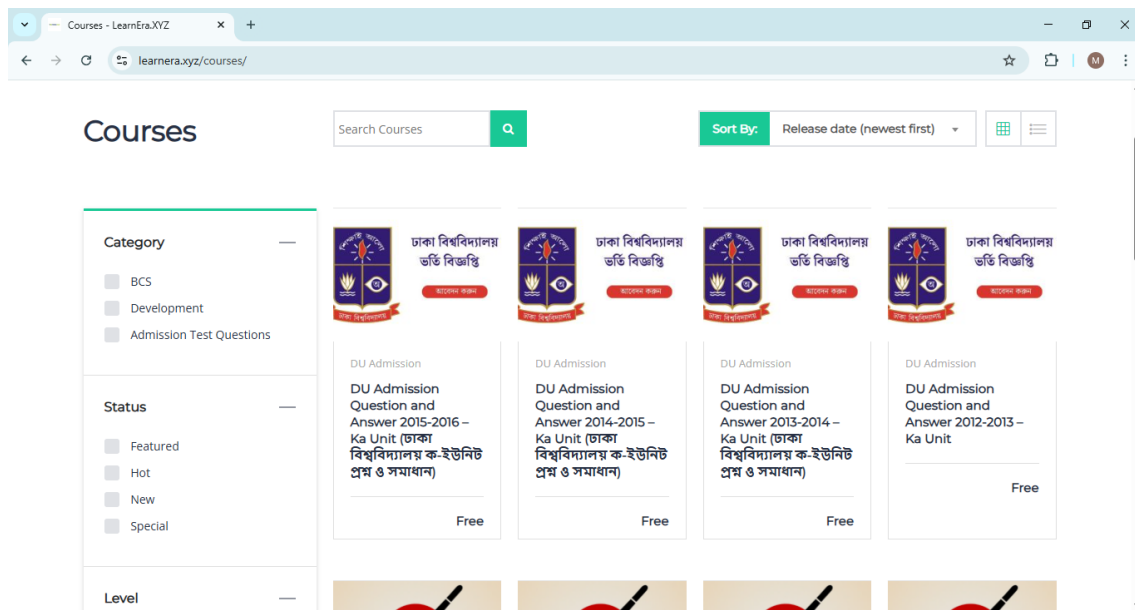


Figure 5.3: Courses of learnera.xyz Website

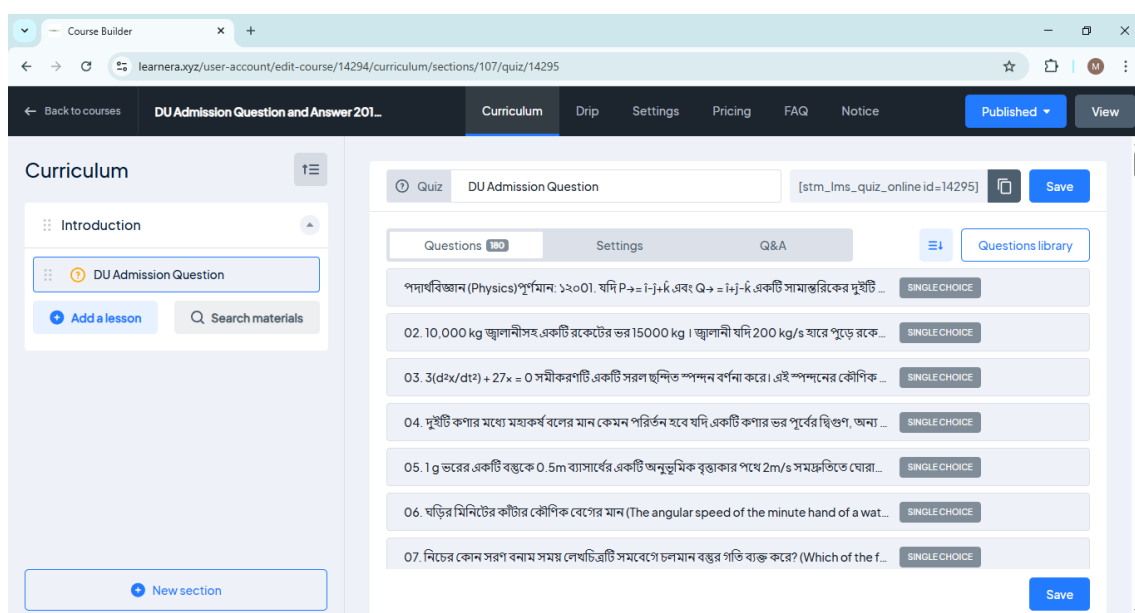


Figure 5.4: Making Quizzes in learnera.xyz Website

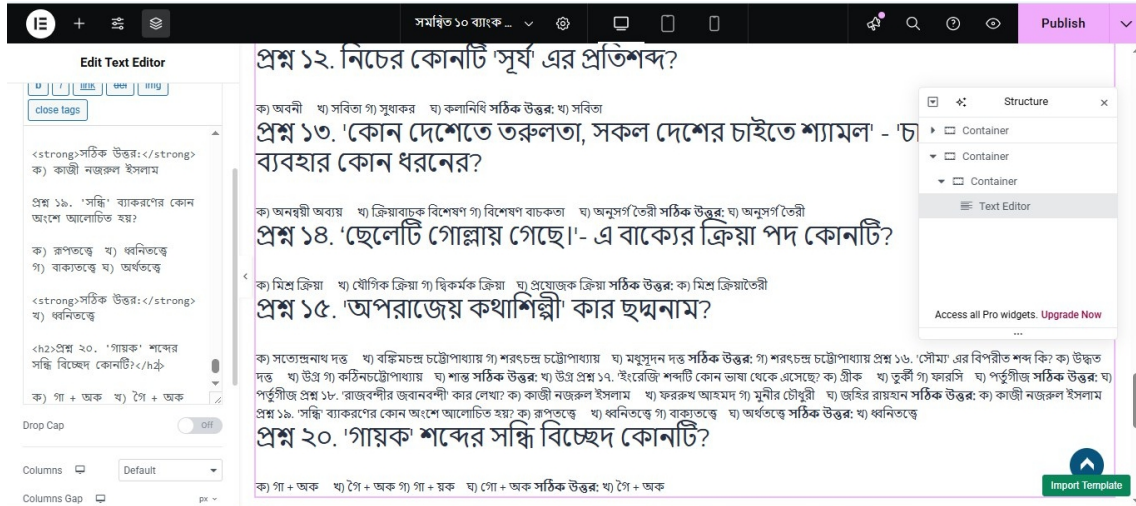


Figure 5.5: Using Elementor Plugin

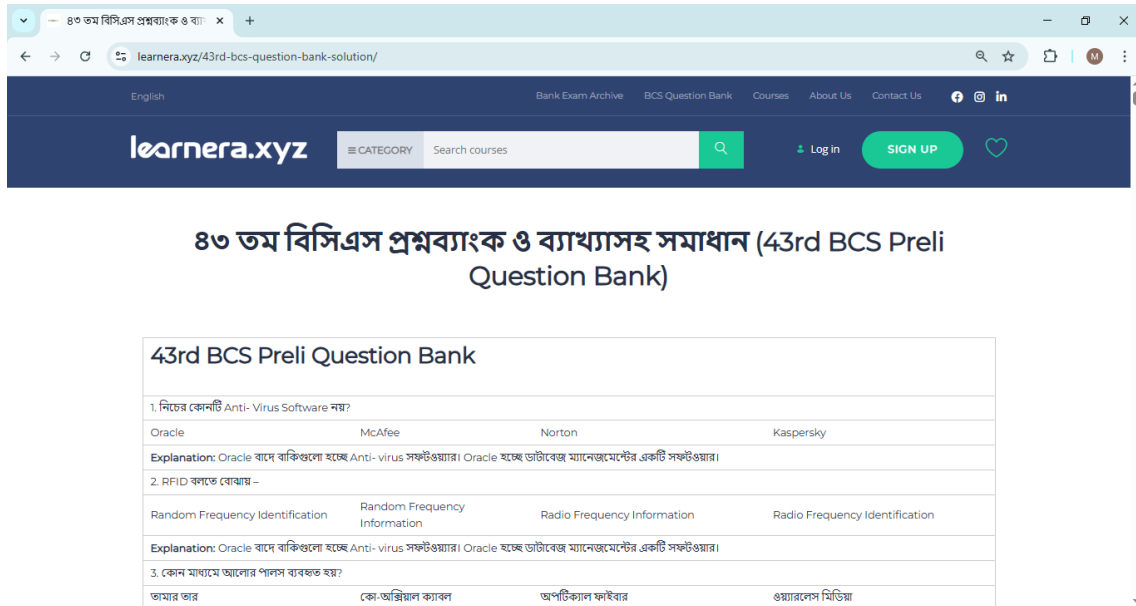


Figure 5.6: Creating Pages Using Elementor Plugin

5.5 Hospital Management System Software (H.M.S.)

I worked mainly in the adding more data and using this software. This software was given to me to install and run on local server and also the Hospital Management System software is hosted on <https://gthms.com/hms/site/login>

- 1. Making Videos for Hospital Management System Software:** I had to make videos of how to use the each software features with the Camtasia software.[5]
- 2. Adding Sample Data:** I had to add sample Data to this software. Furthermore I had to add data to each features of the software.

3. **Configuring the Setup:** I had to configure the setup of the software by adding categories so that the sample data can be added.
4. **Adding Roles:** In the Software there were many roles like Super Admin, Admin, Accountant, Doctor, Pharmacist, Pathologist, Radiologist, Receptionist and Nurse. I had to add peoples to all this roles.
5. **Designing Logo:** I had to design and create the logo for this software. I used Canva to design logo for the Hospital Management Software. Here is the link of the Logo I designed https://www.canva.com/design/DAGlnJ9-ASQ/52qdxBh2RxA8fSHQYY2Mg/edit?utm_content=DAGlnJ9-ASQ&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton
6. **Running the Software on XAMPP:** This software was given to me and I had to run it on my <http://localhost> with XAMPP. In addition, to do that I had to configure "hosts" file on my windows 10 laptop. The "hosts" file is located at `C:\Windows\System32\drivers\etc\hosts`. Furthermore, to configure this "hosts" file I needed the admin permission to modify.

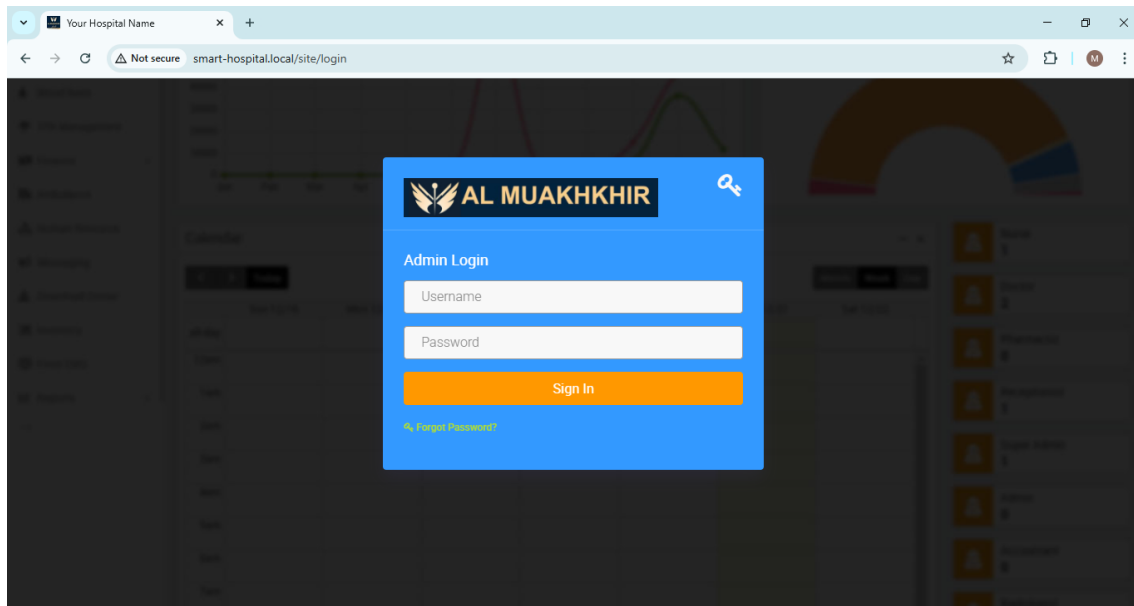


Figure 5.7: Hospital Management System Software

5.6 Work Done at innovationsofts.com Educational Website

In <https://academy.innovationsofts.com/> my work was to create courses and to make videos on how to create courses on this website. This website was also WordPress based website. I learned how to create courses and created courses on this website. Furthermore, I had to make videos of me creating courses on this website [6].

5.7 Creating Website Mock-up

I used Figma to design website mock up. Here is a link for the website mock-up that I created. <https://www.figma.com/proto/pqfK4uIGzo9y6HEjyLSMk0/Works?node-id=4-346&t=uLl3k6KV2aCCfxOc-1>

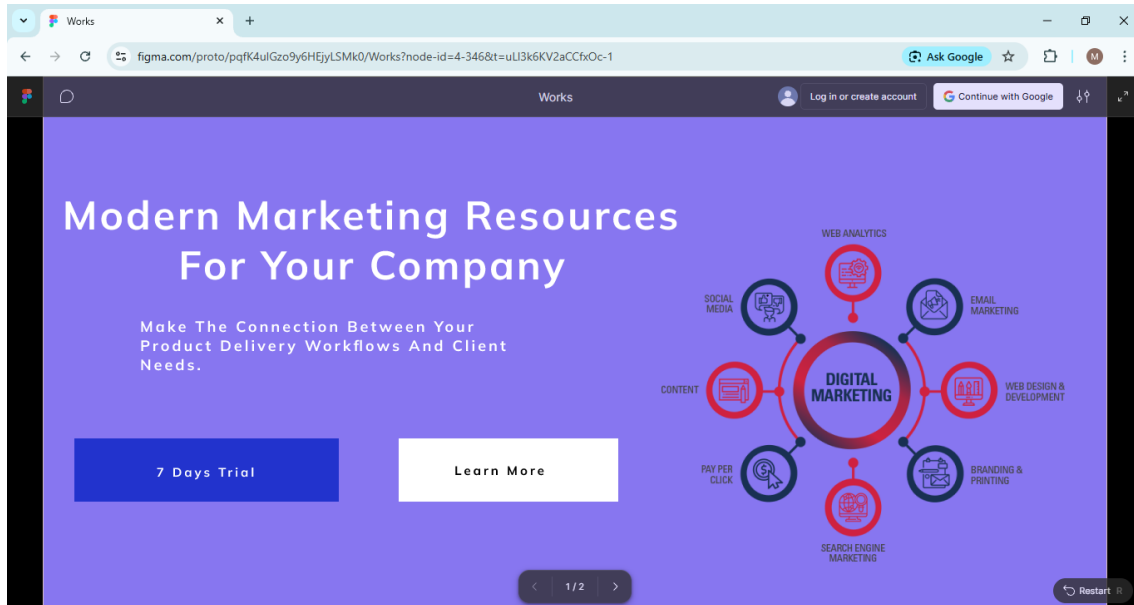


Figure 5.8: Website Mock-up

5.8 Internship Certificate

After completing the 6 month internship at GigaTech Solution I was given the internship certificate.



Figure 5.9: Internship Certificate

5.9 My Personal Project: Time-Stamped Notes Management System

After finishing my internship at GigaTech Solution I tried creating my own CodeIgniter project. Its a small project where the works or important notes are written and saved and the time of the notes or work added are recorded when saved. The idea of this project came to my mind when I was doing internship. As I had to submit my work done in time and the time of my work done was recorded in the telegram chat group I thought of creating a Time-Stamped Notes Management System [7].

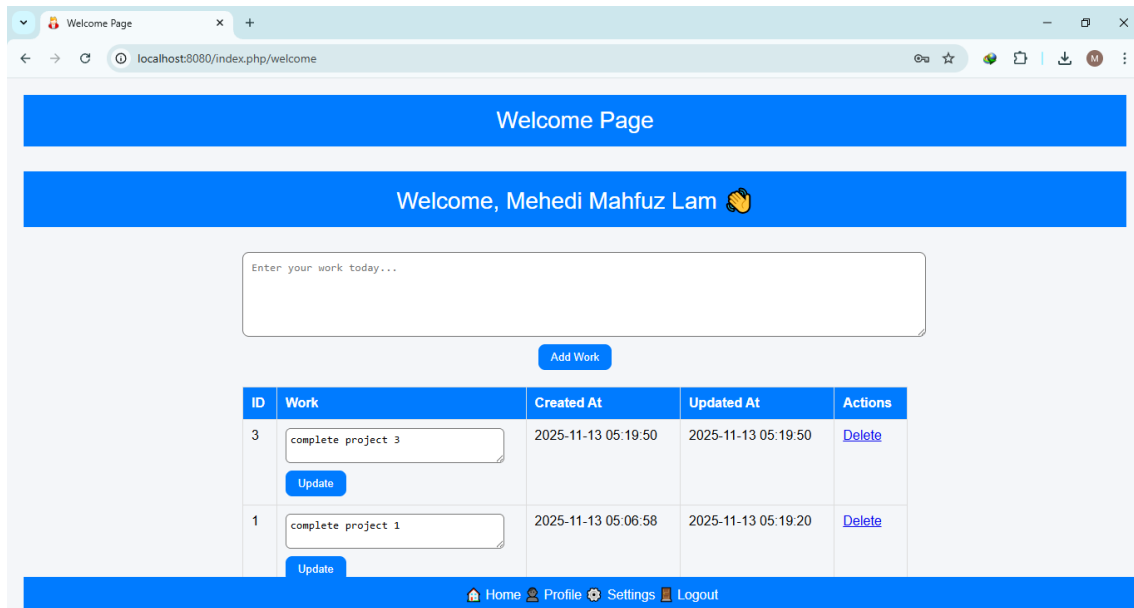


Figure 5.10: Time-Stamped Notes Management System

5.9.1 Project Outline

This personal project was developed to create an efficient and simple system where the important notes along with the date and time are recorded when the notes were added. Here the user can store information digitally as it can be managed, retrieved and analyzed efficiently. Furthermore, the user can see the timestamp for each entry which helps them to track a particular work or note which was created. In addition, this helps to increase the personal productivity and work development.

5.9.2 Objective of the Project

The main objective of the project are given below:

- Designing a simple note managing system.
- Storing the important notes digitally.
- To automatically record the time and date when the note is saved.
- To help user view the previous saved note efficiently.
- To make a MVC based web application

5.9.3 Tools Used

The tools that are used to create Time-Stamped Notes Management System are given below:

- Back-end Framework: I used the CodeIgniter framework.
- Programming Language: I used the PHP programming language.
- Database: I used the MySQL database.

- Front-end tools: I used HTML and CSS.
- Web Server: I used the XAMPP Apache web server.

5.9.4 Features

The main features of Time-Stamped Note Management system is given below:

- There is secure user login and registration.
- Here the user can add new notes.
- The timestamp is automatically generated and recorded.
- The user can edit and update the notes.
- The user can delete the notes if required.
- The notes are secured and stored in a database.
- The user can view the list of the saved notes with the time of which the notes were saved.
- It is a very simple, efficient and user-friendly interface.

5.9.5 Software Development Life Cycle(SDLC) Model

The software development life cycle model which was used in making this Time-Stamped Note Management system is the water fall model. This model is used because the project requirement was clearly mentioned at the beginning. Furthermore the project was small and had a limited features which is suitable for using the waterfall model. The development phase of this project is given below:

1. **Requirement Analysis:** Here I have done the requirement analysis by finding the need for the Time-Stamped Note Management system for the user authentication and timestamp recording features.
The Time-Stamped Note Management system is needed for storing important notes. Furthermore, it also automatically stores the date and time when the note is saved. In addition, the user can view the previous notes.
2. **System Design:** I have done the system design by designing the data structure, application flow and Model-View-Controller (MVC) architecture using the CodeIgniter framework.
The System Architecture Diagram helps to see the structure of the system and helps to see how everything is connected. The Architecture Diagram is given below:

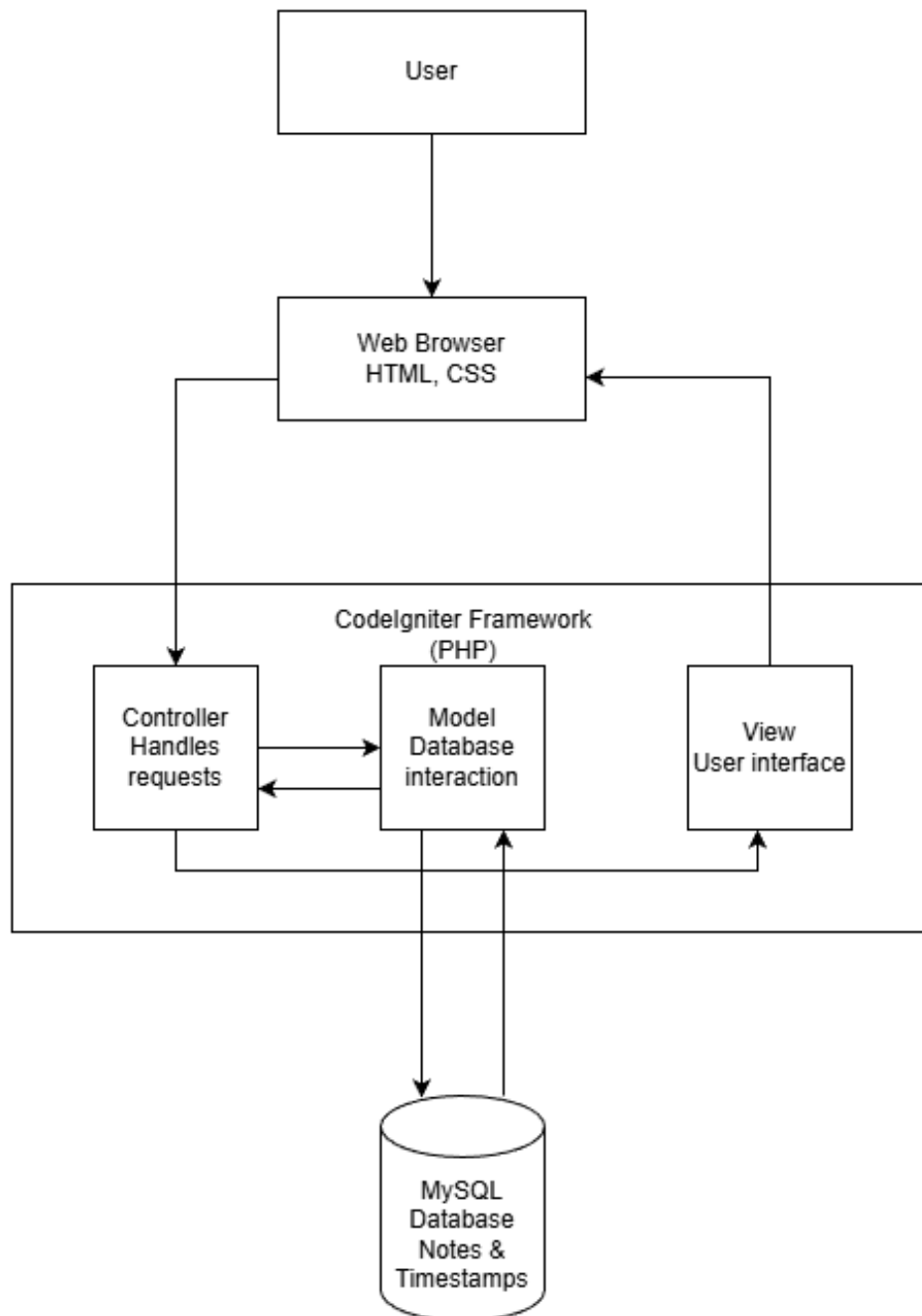


Figure 5.11: Architecture Diagram

The Use Case Diagram show how the user interact with system and uses the system. Here the user can login or register into the system and save their notes in the system. Furthermore the time and date are recorded automatically when the not is saved. The user can create, edit, update, and delete notes. The use case diagram is given below:

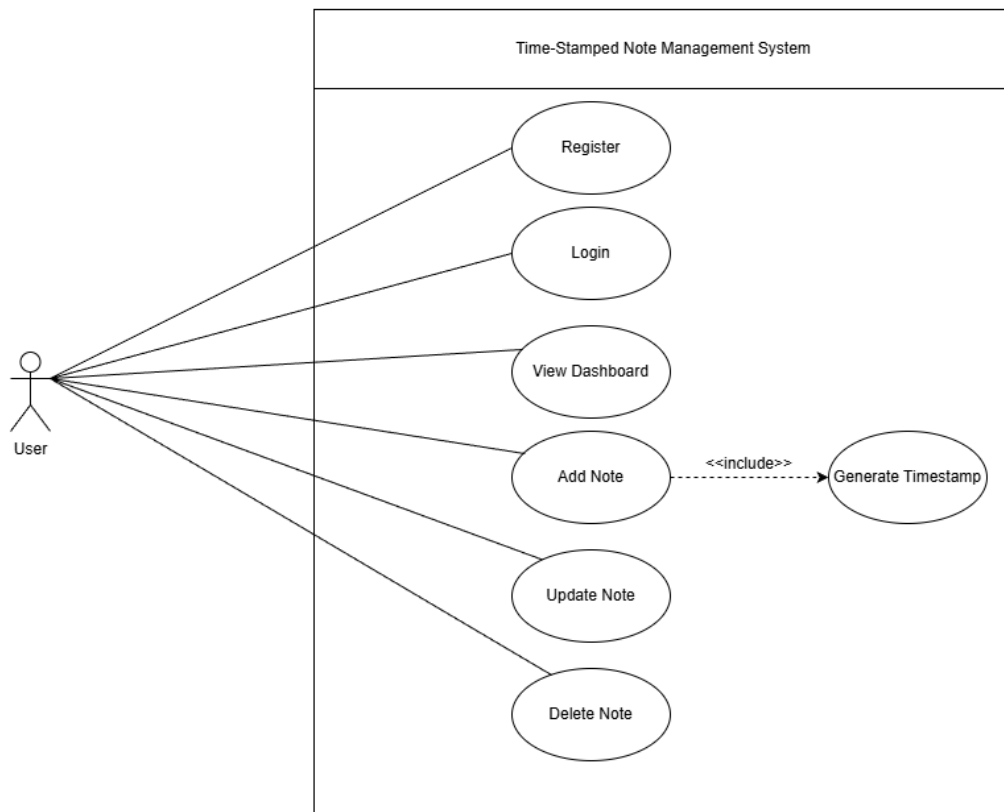


Figure 5.12: Use Case Diagram

The flow chart shows how the system works step by step. The flow chart diagram is given below:



Figure 5.13: Flow Chart Diagram

The Entity Relationship Diagram(ER Diagram) shows the data base structure and the relationship among them. The ER diagram is given below:

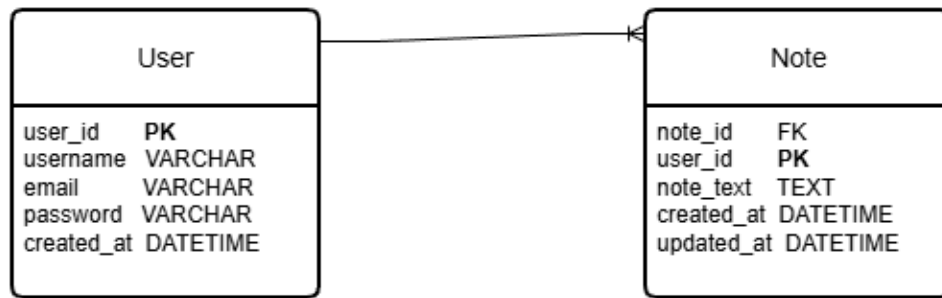


Figure 5.14: Entity Relationship Diagram(ER Diagram)

3. **Implementation:** I also developed the front-end with HTML and CSS. Furthermore I used PHP and CodeIgniter in the back-end.
4. **Testing:** I verified all the features by adding new notes, editing notes, deleting notes. Furthermore I verified the timestamp accuracy.
I have done the functional testing. The user can login and save the note. Furthermore the note is stored in the database. In addition the Time-Stamp is recorded correctly. Finally, the user can view save note, edit saved note and delete a note.
I have done the database testing. The Notes are saved in the correct table. Furthermore the user id is correctly saved. The correct date and time is shown here and lastly no blank not is saved if the user try to save a blank note.
I have done the security testing. Therefore, no user can access anther user's note without login. The password are stored in encrypted form. Finally, the session is expired after logout.
5. **Maintenance:** Finally, I fixed the small bugs and make changes in the Time-Stamp Management System. I made is so that the unique note id cannot be seen by the user as it might create confusion. Lastly, if the user reports any login or session related issues I will fix those issues.

5.9.6 System Design

The project follows the Model-View-Controller (MVC) architecture which is given by the CodeIgniter framework. There is front-end and Back-end component for the efficient maintenance and to update easily.

5.9.7 Back-end Development

The back-end of the system was developed using PHP and the CodeIgniter framework. The controller are used for handling the user request like login, adding note, editing notes and deleting note. Furthermore, Models were used to manage database operation like inserting notes, updating notes, retrieving notes and deleting note

records. With the help of user authentication only the authorized users could have access to their notes and can manage their notes. The Automatic Time-Stamp generation was done at the back-end for accurate time stamp generation.

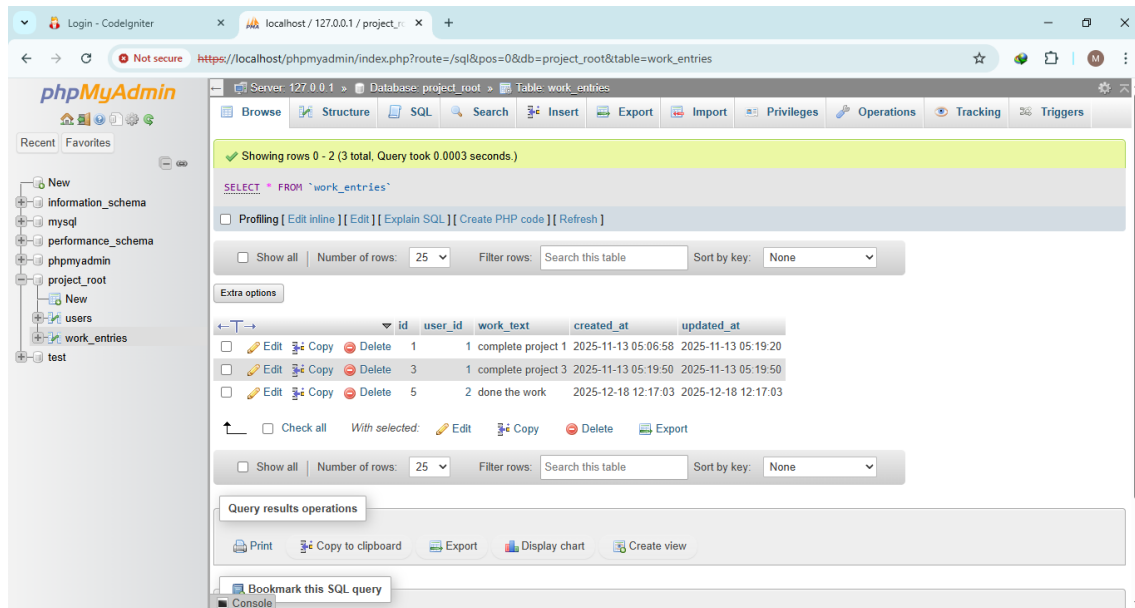


Figure 5.15: Data Base Of Time-Stamped Notes Management System

5.9.8 Front-end Development

The Front-end of the system was developed using the HTML and CSS. The login page, registration page, note creation and editing were made with standard HTML so that it become more user-friendly. Furthermore, the elements were styled using the CSS. The data coming from the back-end were displayed in a structured format. In addition, the user could view their added note along with the Time-Stamp in a clean structured format easily. The style of the project is kept basic for a simple and easy user-friendly system.

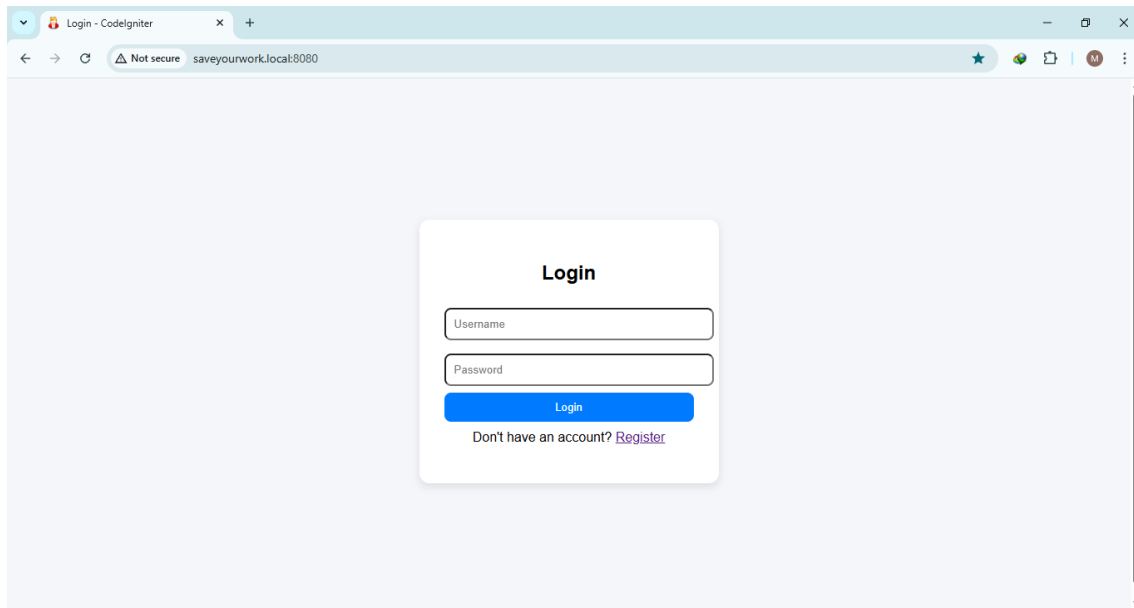


Figure 5.16: Login Page Of Time-Stamped Notes Management System

5.9.9 Challenges Faced

I faced some challenges while creating Time-stamped Notes Management System which are given below:

- Understanding the Model View Controller structure.
- Managing the database connection
- Ensuring correct timestamp display

5.9.10 Future Updates

The project can be enhanced further by:

- Role-based user access control like the admin panel and user panel.
- Creating advanced search options based on date or key words.
- Improving the user interface.
- Having the cloud based storage and backup support.

5.9.11 Environmental Impact

My personal project Time-Stamped Note Management system have low environmental impact. Furthermore, The Time-Stamped Note Management system contributes positively to the environment.

Firstly, my project encourages the use of digital documentation which decreases the use of paper based note which causes harm to the environment. In addition, it decreases the paper waste and the trees are preserved.

Secondly, my project is light weight and efficient to use. In addition, my project

does not have high resource consuming features. Furthermore, the this project have low power and energy on both client and server side.

Finally my project only stores the necessary notes and time stamps as a result is uses low storage and reduces server load. This project is an Eco-friendly software which uses less resource and reduces physical material usage.

5.9.12 Social Impact

My Project have a positive social impact as it improves productivity.

This project helps user to record their work and important notes. Furthermore, it encourages good time management, accountability which is essential for both student and professionals.

The automatic record of timestamp helps ensuring the accuracy and transparency of record-keeping and it also reduces the risk of errors or manipulation. This project gives user the opportunity of learning and self-improvement by giving the user to see the past work and progress over time.

With more improvements this project can be used in educational organization and small professional teams to increase its usefulness in society.

5.9.13 Economic Analysis

From the economic point of view this project is cost effective and is able to maintain the standard.

In this project the development cost is low as it is build using only the open-source technologies. Furthermore, this project is developed independently. Here no paid software license or third party software was used.

This project can run on low cost shared hosting or local servers as it requires low storage and consume less resources. As a result the hosting cost is minimal.

The maintenance cost can be also kept low because the project is a simple and also by using a stable technologies. Furthermore, there is no use of complex dependencies as a result, no frequent updates and tech support is needed.

Finally, this project helps user to save money as there is no need of using the physical note book and also it reduces the time used to write the manual documentation. In addition, the future this system can be updated and expanded using low cost giving this project a good economical value.

5.9.14 Ethical Issues

The development of Time-Stamped Note Management System have many ethical issues. Therefore, these ethical issues must be addressed to make sure that the system use and data handling is done without any ethical problem. Some of the ethical issues are given below:

1. **Data Privacy:** The notes are stored in Time-Stamped note management system along with the time stamp. These notes may contain personal information. Therefore, it is very important that these notes remain confidential. Furthermore, these notes should be protected so that no unauthorized user can access it. Furthermore, these data of the notes should be handled appropriately so that the user trust and privacy standard can be maintained.

2. **Transparency in collecting data:** The Time-Stamped Notes management System records the time when the notes are saved. Therefore, ethical development needs transparency about the type of data which is collected and the purpose of these data. Furthermore, the users should be informed that their data is safe and is being stored only for their productivity and development. In addition, the data is not being used any other ways.
3. **Data Accuracy:** Ensuring that the data is being stored accurately and the integrity of data is a major concern. The Time-Stamped Note management system makes sure that the data is stored accurately and there is no change in data unless the user make changes. This gives the system reliability. Furthermore, it prevents misinformation and manipulation of data.
4. **Secured access control:** In Time-Stamped Note management System the data is secured and there is authentication process. As a result, the information is restricted to the authorized user only. Furthermore, it helps the user so that their information are protected and no data is exposed.
5. **Responsible use of the System:** The Time-Stamped Note management System is designed for personal use. The Ethical use of the Time-Stamped Note Management System ensures that the data is not exploited any way. In addition, it make sure that the notes are not under surveillance and prevent any misuse of the data. The Time-Stamped Note management system ensures that the system is being used under lawful and responsible rules.

5.9.15 Risk Management

In Time-Stamped Note Management System there is Risk management. In this project the Risk management identifies the data loss due to the accidental deletion of data, corruption of the database and if there is a system failure.

1. **Risk of data loss:** There is always a potential risk of data loss due to accidental deletion of data, corruption of the database and if there is a failure of the system. This data loss can be prevented by using the structured and normalized database. In addition, the regularly backing up the database prevents data loss. Furthermore, validation checks before updating or deleting data ensures that the data are not lost.
2. **Security Risk:** The system might be vulnerable if there is security threats like unauthorized access and malicious attacks. To prevent Security Risk the input validation is necessary. In addition, there should be a practice of secured authentication. Furthermore, there should be security measures in the framework.
3. **System Availability Risk:** There is also a risk of System down time which is caused by bad configuration or other application errors which can affect the system usage. This can be prevented by server setup and configuration. In addition, the system down can be prevented by handling the errors and logging the mechanisms. lastly it can be prevented by testing before the deployment.

4. **Risk of Human Errors:** Human can also make mistakes. For example, users can unintentionally enter incorrect data and might accidentally delete important notes. To prevent this, there should be user confirmation prompts for important issues like deleting notes. Furthermore, the interface should be clear so that the user can understand it and use it without mistakes. Lastly, there should be form validation and error messages so that the user can understand and correct the mistakes they have made.
5. **Performance Risk:** As the System is being used, the volume of notes are increasing. As a result, the system might become slow. To prevent this from happening the database queries should be optimized. There should be also efficient use of data storage techniques. Furthermore there should also be use of the data management strategies.

Chapter 6

Documentation and Other Guides

Throughout the internship I used many guides and documentation. This helped to me do my work efficiently.

6.1 Creating Courses

I learned to create courses and see how the online courses are created from Udemy. Here the sections and details of the course is given. I took reference from Udemy website and created course at <https://academy.innovationsofts.com/> website. I learned to design courses more efficiently from this Udemy website [8].

6.2 Presentation Slides

I created the presentation slides with the help of Gamma Artificial intelligence where I had to give the information and details of each slides and the Gamma Artificial intelligence helped me to design each slides with good pictures and data. There were also options to customize data and designs. This presentation slides were created to give presentation to the clients who wanted to know more about the Hospital Management System software (H.M.S) [9].

6.3 Online Conversion Tools

There are many different kinds of conversion tools that I used throughout the internship.

1. **Cloudinary:** I used Cloudinary tool to convert JPG to WEBP files. As it decreases the size of the file. Furthermore I used those files in learnera.xyz to create pages. I created more efficiently as the size of the file was decreased by converting to WEBP format with the help of Cloudinary [10].
2. **Image to Text:** I used “Image To Text” tool to convert an image with words to text which is to convert JPG to Word and copy that text. I used those texts on HTML file [11].

3. **Prepostseo:** I also used “Prepostseo” tool to convert an image with words to text which is to convert JPG to Word and copy that text. I used those text on HTML file [12].
4. **Card Scanner:** I also used “Card Scanner” tool to convert an image with words to text which is to convert JPG to Word and copy that text. I used those text on HTML file [13].
5. **Free Convert:** I also used “Free Convert” tool to convert an image with words to text which is to convert JPG to Word and copy that text. I used those text on HTML file [14].
6. **Jpg to Text:** I also used “Jpg to Text” tool to convert an image with words to text which is to convert JPG to Word and copy that text. I used those text on HTML file [15].
7. **imgOCR:** I also used “imgOCR” tool to convert an image with words to text which is to convert JPG to Word and copy that text. I used those text on HTML file [16].

6.4 Online Platform for Communication

I used Telegram for giving the daily updates and information. Furthermore I used telegram for calling if there is any problem that I am facing [17].

I used google meet for live conversation and presentation of work and information when necessary [18].

6.5 Websites Used for Work

I used website for work. To gain more knowledge and to make my work more efficient I used the website.

I used website to gain more knowledge about BCS questions [19].

6.6 Websites Used for WordPress Development

I used and visited many websites for WordPress development.

I visited awwwards.com to take inspiration and gain more knowledge about the web design. Here there are different kinds of web design are given which are very good [20].

I also visited themeforest website to see the WordPress themes. Furthermore, I gain more knowledge about WordPress themes and theme designs from this website [21].

6.7 CodeIgniter Framework

I used CodeIgniter framework to run the Hospital Management System(H.M.S) software. I learned more about CodeIgniter framework and how to install CodeIgniter framework from the CodeIgniter documentation [22].

6.8 Avro Keyboard

I used Avro Keyboard to write Bangla Language which was used to write Bangla Question in HTML file. I used Bangla Typing with Avro Phonetic.pdf to gain more knowledge about Bangla Phonetic writing [23].

6.9 XAMPP

I used XAMPP local host server to run the Hospital Management System(H.M.S) software. Furthermore, I had to download and installed XAMPP first to run the software [24].

6.10 Visual Studio Code

I used Visual Studio Code as my code editor. Visual Studio code has many useful plugins that I used. At first, I had to download and install Visual Studio Code. Furthermore, I used Visual Studio Code to edit and create my HTML, CSS, JavaScript file [25].

6.11 Video Tutorials

I used many video tutorials to gain more knowledge about web design.

I used "Perfect Landing Page Design Explained (in 5 minutes)" video tutorials to learn how to create web design on Figma [26].

I used "Step-by-Step Guide to Designing a Website Landing Page" video tutorials to learn how to create web design on Figma [27].

Finally I used "Design A Landing Page in Figma" video video tutorials to learn how to create web design on Figma [28].

6.12 MiKTeX and TeXstudio

As I was writing the final internship report it became to big and was not possible to compile in overleaf as the compilation time ran out. As a result, I was not able to compile my project on overleaf.

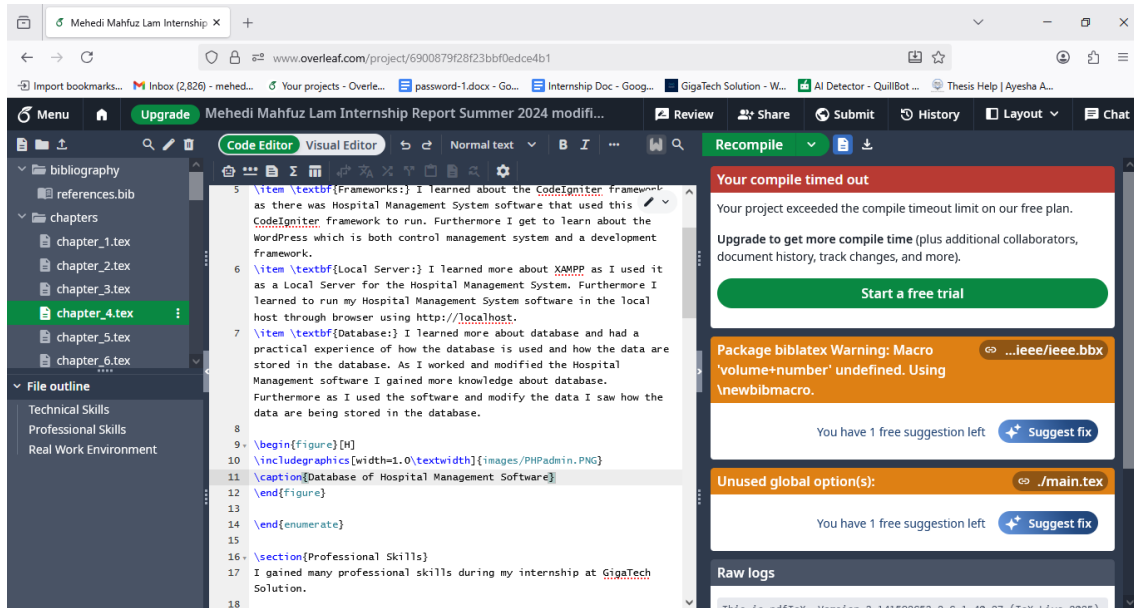


Figure 6.1: Overleaf Compilation Time Out

So, I had to install MiKTeX and TeXstudio and had to download my final internship report from overleaf and compile it locally. Furthermore, there was no compilation time limit here. Finally, I was able to compile my final internship report.

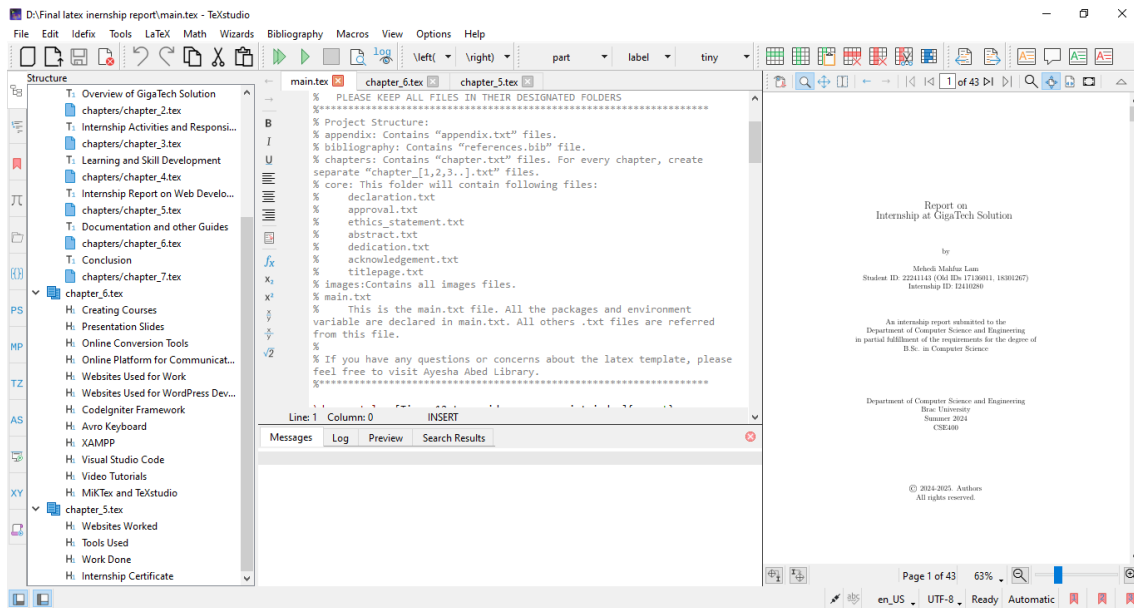


Figure 6.2: Final Internship Report Compiled In TeXstudio

MiKTeX is a compiler for LaTeX system which gives tool to compile the LaTeX document. I installed MiKTeX first [29].

TeXstudio is a writing environment for making documents LaTeX markup language. I installed TeXstudio after installing MiKTeX. Furthermore, I had to solve the compilation error that was ignored on overleaf to compile my final internship report as it cannot ignore the compilation error like in overleaf [30].

Chapter 7

Conclusion

During the 6 months of my internship, I have learned many things. This was also the first time for me doing work professionally. I wish I could have a longer internship and learn more from it. In addition, I want to continue learning and gaining this kind of professional experience. After the conclusion of the paid 6-month-long internship, I have continued working voluntarily as a part of an unpaid internship at GigaTech Solution to grow more professionally. Furthermore, I want to gain more knowledge about new things and explore new ideas and improve myself.

7.1 Summary of Findings

The internship gives me a deep understanding of the practical application of software engineering in a real-world development environment. My personal project followed the Software Development Life Cycle (SDLC), which contains the requirement analysis, system design, implementation and documentation. Furthermore, the findings contains a good system architecture and the use of model techniques like architectural diagram, use case diagram, flow charts and entity-relationship diagram which gives my project more consistency and development accuracy.

In addition, my personal project the Note Management System follows the Model-View-Controller (MVC) architecture which helps to maintain and scale the system easily. Furthermore, the secure authentication mechanisms and structured database design helps to keep the data integrity and user security. Finally, the testing and validation helped to identify the system defects and bugs and ensured all the functional requirements were working properly. Therefore, the internship helped me to apply the theoretical concepts with the industry standard development practices.

7.2 Contributions to the Field

My personal project Time Stamped Note Management System contributes to the field of software development by giving a structured approach to designing and implementing a web-based application using standard development practices. Furthermore, the System shows how the user authentication, data management and security measures is efficiently implemented by using the modern web technologies.

In addition the project documentation gives reference model for developers by showing the architectural diagram, use case diagram, flow charts and entity-relationship diagram in real projects. Finally, the project also shows good practices like the use of MVC architecture and secure password handling which is very important for the professional software engineering.

7.3 Recommendations for Future Work

The Note Management System, which is my personal project can be improved more in the future. It can be improved by adding security features like two-factor authentication and role-based access control which improves the system security. Furthermore, the performance optimization can be improved to support a large number of users.

In addition, more features like creating advanced search options, notification systems and mobile application integration could be included. Therefore, this improvement could make the system more robust, salable and suitable for development.

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