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A Tourist Website named Aamar Tours

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An Undergraduate Internship/Project on a Tourist Website named Aamar Tours

Ву

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Summer, 2022

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September 14, 2022

Dissertation submitted in partial fulfillment for the degree of Bachelor of Science in Computer Science

Department of Computer Science & Engineering Independent University, Bangladesh

Attestation

This is to attest that the report titled "Project on a Tourist Website named Aamar Tours" was completed by me, Shouma Shubra Mallick (ID-1731150) submitted in partial fulfillment of the requirements for a Bachelor's degree in Computer Science and Engineering from Independent University, Bangladesh. It has been completed under the guidance of Bijoy Rahman Arif (Internal Supervisor) and Anik Barua Nirob (External Supervisor). I also certify that all my work is original and has not been submitted earlier to this university or any other institution.

Shouma	28.09.2022	
Signature	Date	
Shouma Shubra Mallick		
Name		

Acknowledgement

I would like to start by thanking the Almighty for his blessings and for providing me with the capacity to work hard and the chance to complete this report. I'd like to express my gratitude to Bijoy Rahman Arif, honorable faculty, Department of Computer Science and Engineering, Independent University, Bangladesh, for his constant assistance and advice, which enabled me to successfully finish my project and report.

The internship opportunity I had with Affix Bangladesh Limited was a great chance for learning professional development. Therefore, I consider myself as a very lucky individual as I was provided with an opportunity to be a part of it. I am also grateful for having a chance to meet so many wonderful people and professionals who led me though this internship period. My heartfelt gratitude goes to Mr. Shamim Azad, CEO of the Affix Bangladesh Limited, for providing me with the chance to serve as an intern with Affix Bangladesh Limited. My time in Affix Bangladesh Limited was nothing sort of fantastic. I greatly liked working and studying here. I'd also want to thank Anik Barua Nirob for his excellent advice and supervision throughout the internship.

Finally, I would like to thank Independent University, Bangladesh, as well as all the respected faculty and staff members who were an integral part of my bachelor's degree in CSE. All of what I've done has been made possible exclusively by their direction and assistance, and I convey my appreciation to them.

Letter of Transmittal

10 September, 2022
Yousuf Mahbubul Islam
Dean,
Department of Computer Science and Engineering,
Independent University, Bangladesh.
Subject: Letter of Transmittal for Internship Report, Spring 2022

Dear Sir,

It's my greatest pleasure to place my Internship Report for your kind approval. I, Shouma Shubra Mallick, from Summer 2022, have completed my Internship Program and its report. I completed my internship at Affix Bangladesh Limited, which started on 17th June and ended on 10th September of 2022. This report contains my experience and work in the company. It is a pleasure to present you my experience in many of the technology related fields of the company, including research and development, designing, software development and also to get acquainted with software development process.

I hope, this report will reflect my learning and the work I did during the internship program. I also pray and hope that you will find it in order.

Sincerely, Shouma Shubra Mallick ID: 1731150

E	valuation Committee	
	Mohammad Motius Rolman	
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	Supervisor Pand member	
	Salsia a Alam	
	Signature ABRIMA ALAMA Name	
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	-External Examiner / Organizational Supervisor / Panel Member-2	
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	Head of the Department / Convener	
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Abstract

In this report, the experiences I gathered during my internship period conducted at Affix Bangladesh Limited is written. Affix Bangladesh Limited is a Bangladesh based multinational company which has different projects. Main services provided by Affix Bangladesh Limited are: Helping students who want to study abroad, first online based service in Bangladesh to supply house materials etc.

I was selected at Affix Bangladesh Limited as a Web Developer to help to build a tourist Website which will complete my internship program under the company. The main target was to develop a tourist website which is supposed to have all the features that a tourist can expect when travelling somewhere. On the website, there will some readymade tour packages. Customer can choose any package and book it. There will be a customization option in which user can make a tour plan on his own. Also, there will be a feature in which a user can choose only vehicles which is similar to renting a vehicle.

Before working on any project, I had to gather initial requirements for the system and submit an action plan for the system which will consist of documentation of all the functionalities of the system.

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Introduction

1.1 Overview/Background of the Work

In our country, we have many tourists to visit the places inside/outside our country. There are many travel agencies who helps people to let them have a great travel experience with a cost of money. Recently, we also have a website called GoZayaan Ltd. This website offers some excellent travel experiences. But both the agencies and this website lack some features. So, the company in which I am doing my internship, Affix Bangladesh Limited is thinking about building a new website which will be a direct competitor to the GoZayaan having more features. The name of the website is Aamar Tours.

1.2 Objectives

My objective is to help building a tourist website named Aamar Tours which will contain every expected feature from a tourist's perspective.

1.3 Scopes

Working on such a big project will help me learn many things. This will be a great experience working on such a project. This experience will help me not to fear when I have to do big projects on myself. Also, working on this project will help me get better jobs later.

Literature Review

2.1 Relationship with Undergraduate Studies

The project "Aamar Tours" has benefitted from the knowledge and abilities learned in undergraduate studies. I found that the project will be too much difficult and challenging if these courses hadn't been completed first. Several of the courses include-

- Data Structure: This course covered complicated arrays, objects, classes, arrays of objects, nested arrays, linked list, stacks, queues, trees etc. It also covered how to handle and manipulate the data. The knowledge obtained from this course made handling the complex data much easier.
- Object-Oriented Programming: This course takes a deep dive into programming class and their objects. Also, it lets students know how to create modular programs, which reduced repetition in codes. The topics we learned from this course were- Abstraction, Encapsulation, Inheritance, Polymorphism etc.
- Database Management: This course introduced us to project planning and design. Many kinds of well-known planning and strategy techniques were discussed which includes System Development Life Cycle, Rich Pictures, Requirement Analysis, ERD (Entity Relationship Diagram) etc.
- Web Applications and Internet: Students were taught the development
 of web apps in this course. Some mostly demanded technologies which
 are used in modern days were covered. Some of them are- HTML,
 CSS, JavaScript, PHP, Laravel etc. We were given several projects
 throughout the entire semester and at the end of the semester we were
 asked to build a project of our own.

2.2 Related works

This study investigates an important newly implemented type of tourist management website, which will include all kinds of features that a tourist can expect.

I didn't have to that much related works regarding this project. What I had to do was just making some mini ads for the promotion of the Facebook page. I made several videos but that didn't help me at all whiles making this website.

Project Management & Financing

3.1 Work Breakdown Structure

A work breakdown structure is a tool that can be used for projects, programs, and even initiatives to understand the work that has to be done to successfully produce as deliverable.

For brainstorming and collaboration, it is the ideal tool for the team.

In a WBS (Work Breakdown Structure) there five main parts: Requirement Analysis, Design, Development, Testing and Deployment. The development part has two more parts: Front-End and Back-End. Each of the parts has some steps which are needed to complete the full project.

3.2 Process/Activity wise Time Distribution

Typically, the project was expected to take 90 working days to complete. We divided the entire task into five core functions.

Activity	Time Duration(Da ys)	Work Percentage
Initializing	7	8
Requirement analysis	15	10
Planning	10	10
Design and Implementation	45	50
. Testing	8	15
Deployment	5	7

Table 3.1 Process/Activity wise resource and time allocation

In this table, we can see that Requirement Analysis will take 15 working days to finish which will cover 10% of the procedure. Planning needs 10 days completing also 10% of the work. Design and Implementation took most of the time of 45 working days. By doing this, about 50% of the project is done. Then another 15 days is needed to do the testing

containing 15% of the work. And at last, deployment needs 5 more days of 7% work. In total, 90 working days are needed to complete the whole procedure.

3.3 Gantt Chart

A Gantt Chart is a chart that shows all of the different sub-tasks of a project and how they relate to each other over time. In this chart, a series of horizontal lines shows the amount of work done or completed in certain periods of time in relation to the amount planned for those periods.

	Week-1	Week-2 and 3	Week-4	Week- 5 to 11	Week- 12	Week-13
Initializing	7 days					
Requirement analysis		15 days				
Planning			10 days			
Design and implementation				45 days		
Testing					8 days	
Deployment						5 days

Figure 3.1: Gantt Chart

3.4 Process/Activity wise Resource Allocation

The website we are developing for those users who wants a hassle-free tour experience. We have been working on several resources to bring this to life. Thus, it was a must to allocate the proper resources at the appropriate time.

- **Initializing:** The initial phase of the development process is at hand where the project's brainstorming took place. We came up with the concept t for such a solution for the system.
- Requirement Analysis: Gathering the requirements was the main focus of in this phase. For example, which features should the website have, what functionality is a must, how many developers are needed etc.
- **Planning:** In this phase, a brief plan was made about how the website will be created.
- Design and Implementation: The main work was started in this phase. At first, a design was made with some basic features and the frond-end part was created according to the design. I faced some difficulties as I was new but overcame it later. Then I started the back-end part. It was difficult to do, and I faced

many difficulties. But I did overcome and did some parts of the project.

- **Testing:** As the website is not fully built yet, the testing is not possible at this time.
- **Deployment:** After testing, the project will be deployed for all around the world.

3.5 Estimated Costing

As the company is building website of their own, there is no extra price for the website. And as I worked with them, I had no other choice but doing it for free.

Methodology

Methodology refers to many strategies and logic for the project. It is a system of methods that is used in a specific field of study and activity. Detailed information selection process and detailed methodology used to analyze the subject matter. The methodology is the detailed procedures used to identify, select, process, and analyze information about a subject.

4.1 Software development Life Cycle (SDLC)

It is a structured process that enables the production of high-quality, low-cost software, in the shortest possible production time. The goal of the SDLC is to produce superior software that meets and exceeds all customer expectations and demands.

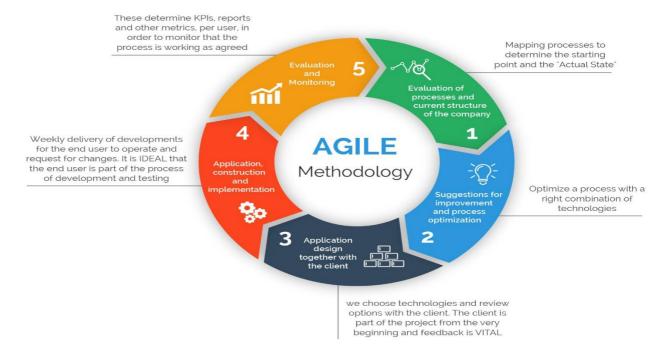


Figure 4.1 Agile Methodology

Agile methodology was selected for this project. It can also be in iterative development. Agile is a method through which a team can manage a project by segmenting it into different phases, incorporating ongoing stakeholder collaboration and iteration at each phase. Customers first illustrate how the final product will be used and what problem it will address in this method.

Body of the Project

5.1 Work Description

There are two main sections to the system. One for the admin panel and another for all other users. Information about users and the service system is entered and updated in the admin panel manually. And the other area provides a number of essential features for common users, enabling them to access quick and efficient services. Users can access a list of features via the Dashboard.

There is an admin panel. Information about the users and service systems may be easily added, updated, and deleted using the panel. A password will be provided to each of the admins so they can access the panel. To enter the admin panel, an admin has to log in successfully. Then he will be able to do all necessary things that an admin can do.

I worked in this project mainly as a front-end developer, but I also did some of the back-end parts. It took me several weeks to learn how the whole process actually works. I learned several languages from the first again and also some new ones. The front-end was built with HTML5, CSS3 and JavaScript. The back end was built with Django which is a framework of Python.

5.2 Requirement Analysis

5.2.1 Rich Picture

A rich picture is a drawing of a situation that depicts the main elements and relationships that need to be considered when trying to intervene for some improvement. It contains images, symbols, texts, icons which illustrate the situation. This helps us to see relationships and connections that may miss otherwise.

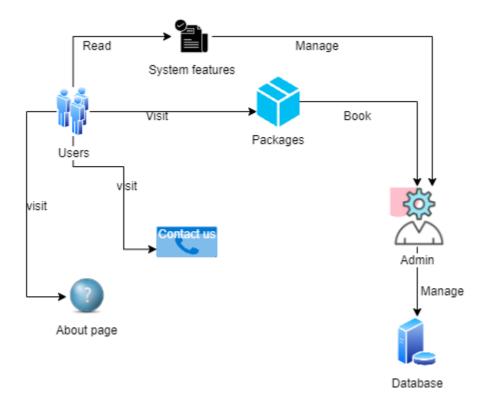


Figure 5.1: Rich Picture

5.2.2 Functional and Non-Functional Requirements

Functional Requirements: It defines the basic system behavior. This includes what the system does or can't do and can be thought of in terms of how the system responds to given inputs. If the functional requirements are not met, the system will not work.

Non-Functional Requirements: A non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. Non-functional requirements are contrasted with functional requirements that define specific behavior or functions.

Performance: The performance of the final product is expected to be

top-notch. Even after meeting all the functional requirements, the system needs to load fast. There should be a certainly acceptable delay after clicking any interactive section but that should not exceed too much.

- **Efficiency:** The system should be efficient in using the shortest path to complete task. If there is any duplicate path leading to the same outcome which may resulteven milliseconds, needs to be eliminated.
- **Availability:** The system should be up and available online 24/7 without having any trouble like broken pages or server errors.
- **Ease of use:** The website should be easy to maneuver. The design and the functionality should be easy for users of all ages. The posts or sections should not be too crowded and be eyesore.
- **Backup:** Websites are prone to hacking or breaking down due to any server issue. Also, while page optimizing some files may end up faulty. There should be regular backups for database in case of such events.
- Information: Throughout the website, there should be all relevant information related to the website and its product. Customers must not get confused while browsing the website about what the purpose of the website is.
- Maintainability: Necessary sections of the website should be made dynamic for user ease. After handling the product users do not expect to code their way through making a post. Users should be able to create, update and delete data to the live site.
- **Security:** Security will always be a concern for websites. The backend of the site should be encrypted for security purpose.

5.3 System Analysis

System analysis is a problem-solving method that involves looking at the wider system, breaking apart the parts, and figuring out how it works in order to achieve a particular goal. It is applied to information technology, where computer-based systems require defined analysis according to their makeup and design.

5.3.1 Six Element Analysis

	System Roles					
Process	Human	Non- Computing Hardware	Computing hardware	Software/syste m	Databas e	Communicatio n
Requireme nt Analysis	1.Admin Suggests the project idea and make understand the requirements. 2. Developers Understand the project requirements	1.Pen&Paper were needed to note the requirement	1.Compute r needed for documentation and keep tracing 2. Printer Needed to print hard copy	1.MS/Word Used for documentatio n	None	1.Internet Wi-fi connected printed uses internet to receive printing information from the laptop/PC.
Designing	and work process 1.Developers Planned about the risk and designthe user interface.	1.Pen&Paper were needed to design.	1.Computers needed for documentation and keep softcopy.	1.MS/Word? Paint Used for documentation	None	1.Internet Need to collect information aboutthe project
Development	1.Developers Generating Ideas and Coding	1.Pen&Paper were neededto note the progress	1.Computers Needed for documentation and keep soft copy.	VS Code, Chrome	MySQL	1.Internet Need to collect information about the project
Testing	1.Developers Test the product after development	1.Pen&Paper were neededto note the bugs	1.Computer Needed to implement the project	VS Code, Chrome	MySQL	1.Internet Need to collect information about the project
Deployment	1.Developers Implement the assign work.	1.Pen&Paper were neededto note the progress	1.Computers Needed to implement the project.	VS Code, Chrome	MySQL	1.Internet Needed to Implemen t the project

Table 5.1: Six elements analysis

5.3.2 Feasibility Analysis

A feasibility analysis is a process of assessing and analyzing a system that has been suggested. It is to see if the idea is technically and financially feasible. A feasibility study also analyzes whether or not a project is financially viable. The basic purpose of a feasibility study is to achieve the scope, not to solve the problem. Feasibility Analysis is categorized below:

- **Technical Feasibility:** This project is technically possible as all of the necessary hardware, software and other technical requirements are on hand.
- Economic Feasibility: This analysis is carried out to determine the cost and benefit
 of the project. As this project has almost no cost at all till now, I think it will be
 financially beneficial to the company.
- Operational Feasibility: In current days, people are digitally more active than

- before. Because of this website, clients can easily find all services which they need to travel.
- Schedule Feasibility: This one is the most critical assessment for project success.
 The predicted length of time it will take to finish the project is 90 days. I hope the
 project will be completed on time as the milestones are being accomplished on
 schedule.

5.3.3 Problem Solution Analysis

There were many problems encountered while completing the project and they were solved accordingly. Some of problems are:

- Learning New Technology: As I had basic knowledge about web development, it was a bit tough for me to understand everything by myself. I revised again what I taught earlier. I also learned new frameworks for back-end tried to implement it.
- Applying Technology: I sometimes even faced problems designing the front-end. I faced many problems while doing backend works. But luckily, seniors helped me and also, I took help by consulting with my friends.

5.3.4 Effect and Constraints Analysis

Constraints and risks specific to each project must be controlled to ensure the project's ultimate success. The three main restrictions facing project managers are time, scope, and budget. The three limitations are a common name for the project management triangle. For instance, increasing the project's scope will almost surely need more time and money, but limiting the scope and speeding up the timeline can both reduce costs.

- **Time:** Time is crucial in the growth of any project. An update was delivered regularly while working on the project. So, no major delay was noticed at all.
- **Cost:** A project's budget includes both fixed and variable costs, such as materials, permits, work, and the financial impact of project team members. This project is almost cost free.
- Scope: The scope of the project establishes its bounds. It has requirements that the project and the company must meet. Both the outputs and the processes for producing them are included in the scope.

5.4 System Design

5.4.1 UML Diagrams

UML is a large notation offering many diagrams and a large set of constructs for each of them covering any possible modelling need. As a result, its specification is a huge book, its metamodel is large, and defining its static and dynamic semantics is difficult.

1. Use Case Diagram:

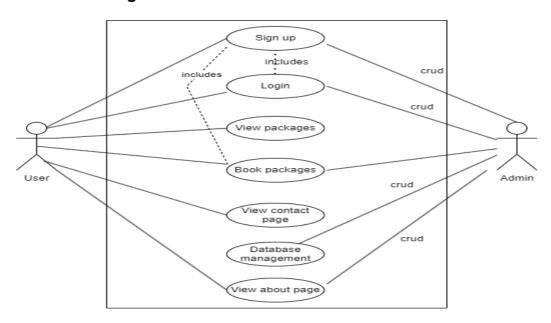


Figure 5.2: Use case diagram

2. Entity Relationship Diagram:

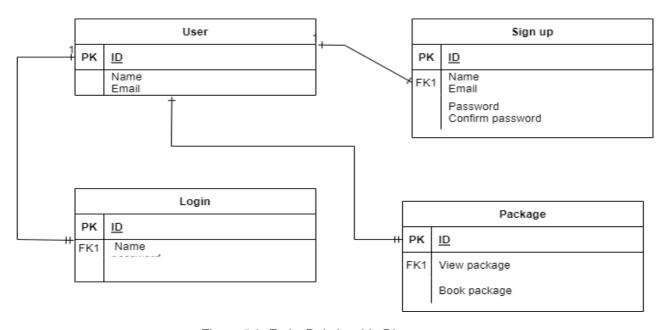


Figure 5.3: Entity Relationship Diagram

3. Activity Diagram:

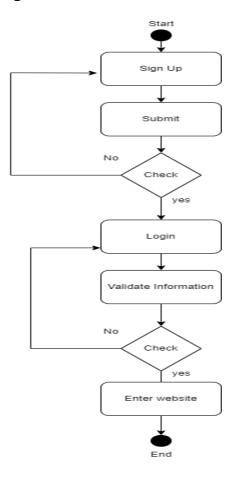


Figure 5.4: Activity Diagram

5.4.2 Architecture

A web application architecture is a blueprint of an application's components, databases, middleware systems, user interfaces, and servers interacting at the same time. A well-thought-out web app architecture can accommodate diverse loads and respond to newservice requirements with ease, resulting in a quick user experience that increases appperformance even more.

5.5 Implementation

As the project is not finished yet, it can't be said that it is implemented.

5.6 Testing

As the project is not finished yet, the testing is not possible at this moment.

Results & Analysis

6.1 User Interface:

The graphical user interface is a form of user interface that allows users to interact with electronic devices through graphical icons and audio indicator such as primary notation, instead of text-based user interfaces, typed command labels etc.

Home page:

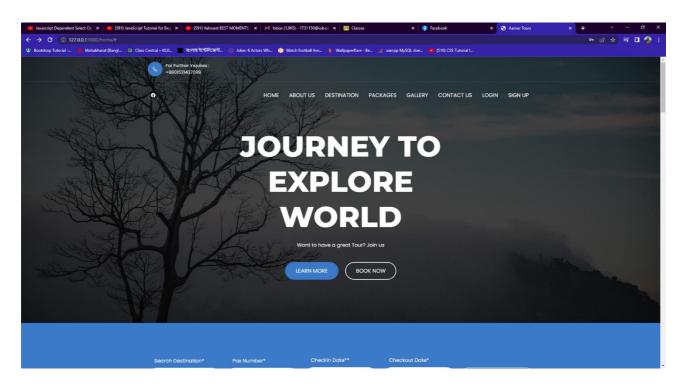


Figure 6.1: Home page

• Signup form

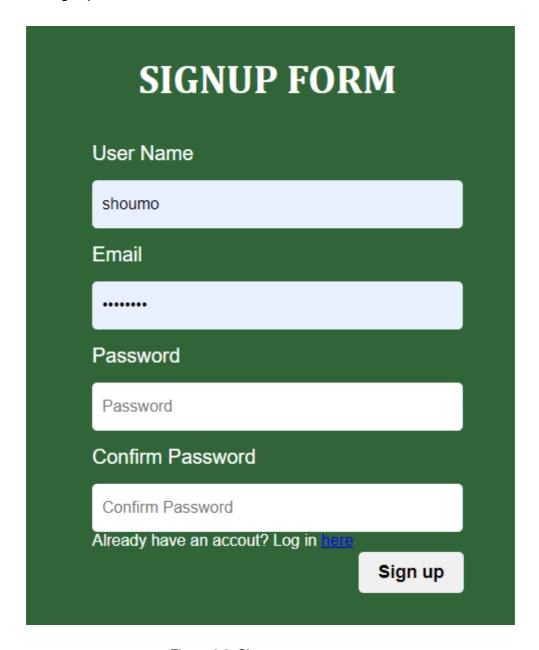


Figure 6.2: Signup page

Packages part

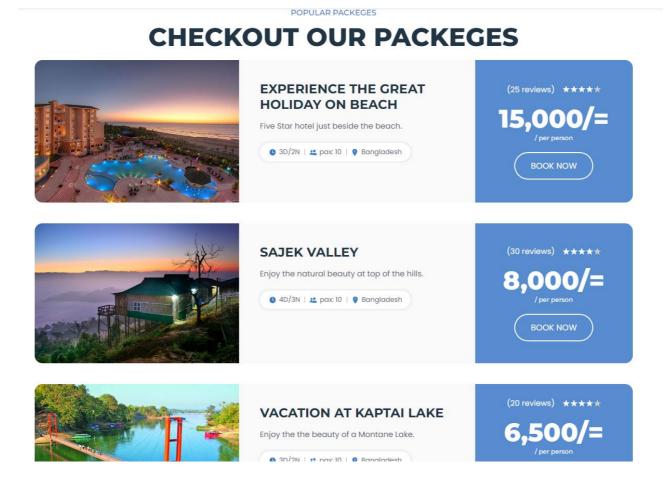


Figure 6.3: Packges part

Project as Engineering Problem Analysis

7.1 Sustainability of the Project/Work

Supporting sustainability in software engineering is becoming an active area of research. We want to contribute the first Systematic Literature Review(SLR) in this field to aid researchers who are motivated to contribute to that topic by providing a body of knowledge as starting point, because we know from own experience, this search can be tedious and time consuming. We aim to provide an overview of different aspectsof sustainability in software engineering research with regard to research activity, investigated topic, identified limitations, proposed approaches, used methods, available studies, and considered domains.

The website's long-term sustainability will also be ensured through frequent maintenance of the website and its server which will be done by the maintenance team collaborating with developers. The website's HTML, CSS, JS, and backend code are all nicely optimized. It will be ensured that the website works properly and is easily accessible by users regardless of the device's specification by minimizing repeated codes, minifying all the CSS and JS codes that are utilized, and keeping suitable coding standards. In termsof style and layout, the website is meant to be user-friendly, with a focus on the User Experience. Visitors with less computer experience will be able to access and navigate the website with ease.

7.2 Social and Environmental Effects and Analysis

The website is not finished till now. But after being finished, it will serve many people for many purposes. People may do this from the comfort of their own laptops or mobile phones, which eventually saves time and cost.

7.3 Addressing Ethics and Ethical Issues

There is always a security problem for user data when discussing a system that deals with online activity. If user data is exposed, it can be exploited in a variety of ways. This is a significant security risk. To ensure that user data is never leaked or compromised, an end-to-end encryption solution will be used. The security layers Is also being beefed up because there will be a lot of transactions every minute.

Lesson Learned

8.1 Problems Faced During this Period

It was very difficult for me to do six days office from 9 am to 6 pm while continuing 2 other courses. I always tried to go regularly but sometimes I became unable to go. Also, it was hard to get used to the working environment. But in this period, I faced these challenges and tried to overcome those.

Problems faced on Body of the project: I did not do coding for the last two years which is a huge gap. So, it was hard for me to do the code-based work. Also, pandemic played a huge role to maintain all schedule. To finish a project, we need to develop a system that considers Six Element analysis, feasibility analysis, problem solution analysis, and effect and constraints analysis. So, it's a good idea to schedule time for each operation and to complete the System analysis part. It'll set up a project. I basically learned this idea from the database management training.

To allocate the task is to have control over all the labor and resources on hand. Each member of the project team will be given a certain task, and they won't be able to go on to the next one until they finish the current one. If all duties are maintained, I won't be difficult to complete the project.

The main problem I faced was my lack of practical knowledge of building production level website. I had some theoretical knowledge from different courses. Those helped me, but not that much. Also, I had no knowledge of backend. During the internship, I learned a Python framework Django and tried to implement it. I cannot say I can work on this fluently, but I can say that I know a bit about it at least.

8.2 Solution of those Problems

During my internship period, I have gained new knowledge, skills and met new people. I learned how to use google properly and find out a solution. I hesitated to take help from people before. But now I know this hesitation will not help me in the long run. The internship was also good enough to find out what my strengths and weaknesses are. I learned about requirements of a project, how to face difficulties and cope up with them. But now I know how I can make a project successful even if I am not capable of doing every part of the project.

Future Work & Conclusion

9.1 Future Works

I have been inspired to continue my career as a web developer by my experience working as an intern at Affix Bangladesh Limited. Web development is now very demanding across the world. More developers including both front-end and backend are needed in the developing industry nowadays. So, I have decided to continue my career as a front-end developer.

9.2 Conclusion

It was a wonderful experience working in Affix Bangladesh Limited as a web developer intern. During the internship period, I collaborated with my mentors and seniors to solve obstacles. I have also learned how to work within tight deadlines and under pressure. The project assigned to me helped me learn many new things and reminded me the old things which I was about to forget. The internship program helped me to handle clients as well, asking for the requirements and understanding the issues.

To conclude, every moment working on this system was a great lesson for me and truly a great experience. I hope I will be able to use this experience for getting better opportunities in near future.

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[Bredeson, 2002] Bredeson, P. V. (2002). The architecture of professional development: Materials, messages and meaning. International journal of educational research, 37(8):661–675.



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Ву

Shouma Shubra Mallick

Student ID: 1731150

Summer, 2022

Consent Form

The student modified the internship final report as per the recommendations made by his/her academic supervisor and/or panel members during final viva, and the department can use this version for archiving.

On recommendation of the board

(Signature of the Supervisor)

Bijoy Rehman Arif Name of the Supervisor

Department of Computer Science & Engineering Independent University, Bangladesh