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An Undergraduate Internship on Refined Technology

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An Undergraduate Internship on Refined Technology

By

Sadman Hasan

Student ID: **1620588**

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.

Asif Bin Khaled
(Signature of the Supervisor)

Md. Asif Bin Khaled

Lecturer, SETS

Department of Computer Science & Engineering

Independent University, Bangladesh

Attestation

I, Sadman Hasan hereby declare that this project on Professional Website Development is work of mine under the supervision of T.M Moniruzzaman from Bglobal. The whole documentation is authentic. No help was asked for during the completion of the report from any person or any third-party organization.

Sadman Hasan

Signature

14/09/2022

Date

Write Your Name Here

Name Sadman Hasan

Acknowledgement

I'd like to thank my honorable supervisor, Md. Asif Bin Khaled, Internship Supervisor Lecturer, Independent University, Bangladesh, for guiding me through the entire report-writing process. I am also grateful to Bglobal for allowing me to work in the real world, which was essential for my internship. I am also grateful to my family and friends for their support not only during this critical period, but also throughout my B.Sc. degree. I'd like to thank and appreciate my Organizational Supervisor, T.M Moniruzzaman, for his exceptional guidance, monitoring, and constant encouragement throughout the internship period. Last but not least, I'd like to thank my parents, as well as my faculties for their eternal support given to me. At last, I would like to show my humble gratitude to Independent University, Bangladesh for having an internship program for students which helps us to prepare for corporate world.

Letter of Transmittal

Date:

Md. Asif Bin Khaled
School of Computer Science and Engineering
Independent University Bangladesh.
Subject: Submission of Internship Report.
Dear Sir,
I am delighted to submit my report on my internship at Bglobal. In this report, I attempted to describe my project work, accomplishments, and experiences. All of the works presented here are done with a high degree of sincerity and honesty. During my internship, I worked for Bglobal for five months, where I not only gained real-world work experience but also gained an understanding of the department's processes and various aspects. This report includes a thorough examination of the office as well as the department's functions. As a record of my efforts during the internship periods, I have completed all of the project works that I completed during my internship periods, including their requirements, functionalities, and technical specifications.
I pray and hope that this report is interesting and meets your expectations. I have done my best to avoid flaws, and I hope that my report will satisfy you. I'd also like to thank you again for the opportunity to submit this report.

Sincerely,
Sadman Hasan
ID- 1620588

Evaluation Committee

Asif Bin Khaled

Signature

Md. Asif Bin Khaled

Name

.....

Supervisor

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Signature

.....

Name

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Internal Examiner

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Signature

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Name T. M. Mozzezzaman

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External Examiner

.....

Signature

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Name

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Dr. Mahady Hasan
Head Department of CSE
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Dr. Mahady Hasan
Head Department of CSE
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Abstract

It is critical to have a solid understanding of the users' expectations in today's fast-changing corporate sector. Website platforms are growing increasingly popular because they enable consumers to obtain the information they seek while remaining at home. This is a web-based application that users can access through the internet. This online application allows users to obtain information or manage data. The interfaces are simple to use. It does not require a lot of technical skills to utilize. Users will be able to browse not just on computers and laptops, but also on smartphones, because the website is responsive to different screen sizes. If users have any questions, they can ask them through the website. This report outlines all the necessary information and processes required to design a modern educational website.

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Chapter 1

Introduction

1.1 Background of the Work

Bglobal generally work for software developing. Refine technology is one then. It's a client requirement based project. It is a crude oil company. They want their data updated. When they need a specific data for calculation, they just to see the data. Also in raw data they have some little calculation. Even they have daily calculation. They don't want to do that calculation everyday. When they upload a raw data like crude labeling and measurement. Barrel diamenter, lenght of pipe, some camicals measurement ration etc. There have 340 or more container. Those container measurement, name list everything they need in calculation in proper time. That they dont need to face any kind of loss. All of these kind data they want to keep in data base with full safety. Also they wanted a fixed login system in the project.

For all of these kind of requirement falcon is the best back-end framework. It can load lots of data easily. Because our main target was user should not be faced any kind of lags. Falcon mainly for manage data softly. Django also can manage data but not like falcon.

1.2 Objectives

The main objective is to develop a robust Custom Solution Database Management System for The Crude Company.

In short, our aim is to make sure we create an easy, secure and stable system where users can easily upload, edit, delete and view the data. When they want to import a excel file they have to use proper excel sheet. If any data get missed then system will show an error massage. So user have to use proper excel sheet. This system is data record based system. There are have some daily based data for crude oil company. They can update

that data daily. It's time consuming for user.

1.3 Scopes

So as client require we develop the project. We just added all the feature as require.

Chapter 2

Literature Review

2.1 Relationship with Undergraduate Studies

This project is related to some of the undergraduate courses I have completed. Since I am currently working on Front-End Development in my project, so learning HTML, CSS, JavaScript and PHP from CSE 309 (Web Applications Internet) course has helped me to implement of my project work.
Before I started working on my project, I discussed with the clients and learned what they want in their website. So, learning functional and non-functional requirements, UML diagram, data flow diagram and activity diagram from CSE 307 (System Analysis Design) course has helped me to design my project work.
Soon I will start working on Back-End Development so concepts of SQL, ER Diagram and more that I have learned from CSE 303 (Database Management) course will help me to do the Back-End Development work of my project.

2.2 Related works

As part of my project, I'm working with a team that's creating a website that focuses on import and export transactions. Creating the website would enable them to reach out to a wider audience in the city. The following name will provide context for my project: Oil price: This website always give update about crude oil. This website is owned and operated by SIGMA GLOBAL SMC-PVT LTD.

Chapter 3

Project Management & Financing

3.1 Work Breakdown Structure

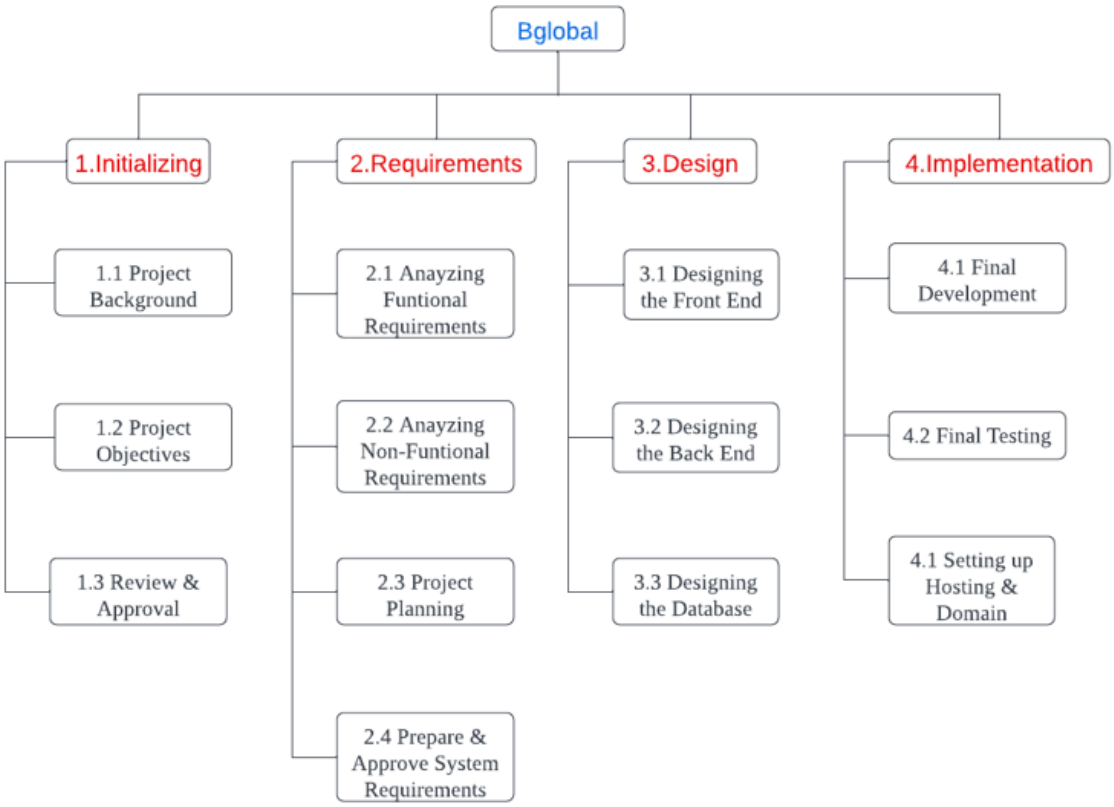

Figure 3.1: Stats from Breakdown Structure

3.2 Activity Wise Time Distribution

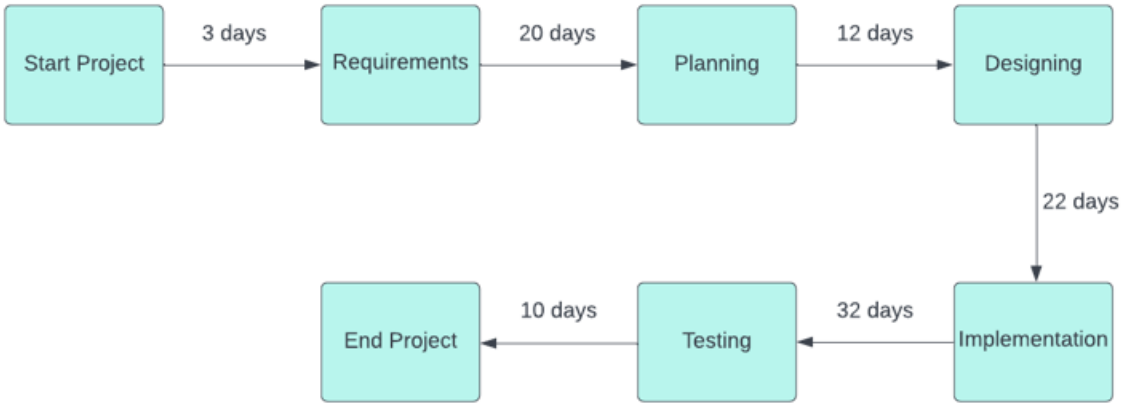

Figure 3.2: Activity Wise Time Distribution

3.3 Gantt Chart

Figure 3.3: Gantt Chart

3.4 Process wise Resource Allocation

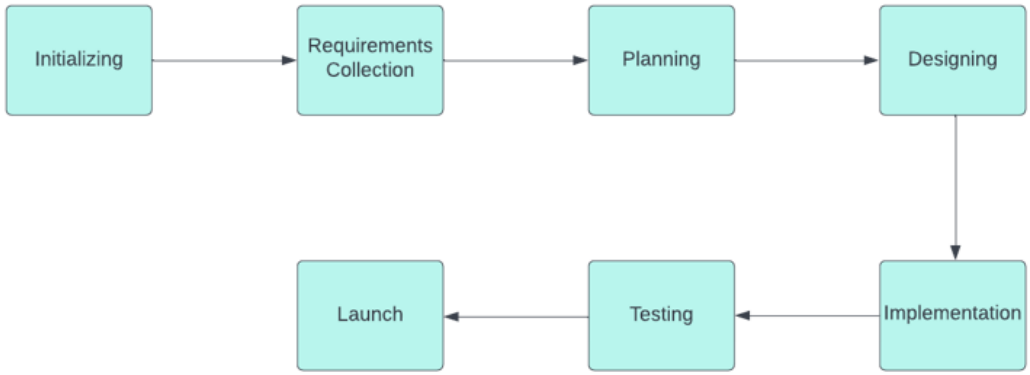

Figure 3.4: Resource Allocation

3.5 Estimated Costing

Requirements	Amount
Domain	3500 BDT
Employee Salary	60000 BDT
Electricity Bill	7000 BDT
Computer Components	60000 BDT
Testing	12000 BDT
Total	142500 BDT

Figure 3.5: Estimated Costing

Chapter 4

Methodology

For this project, Agile technique is being employed. The Agile approach is a style of project management that divides a project into stages. It necessitates ongoing communication with clients as well as continual development at all stages. The team goes through a planning, executing, and reviewing phase once the task begins. It is critical to maintain constant communication with both team members and clients.
As a result, whenever unforeseen changes occur, either outside or internally, this model becomes the best option for the team leader and its members. As a result, when a new feature is introduced to the system, the risks are reduced.
HTML, CSS, and JavaScript were used to create the page's content and execute the design. The website was then tested on a live server when it was finished. The company's supervisor and clients afterwards inspected the website. We moved on to the next step of the project development after receiving their final clearance.

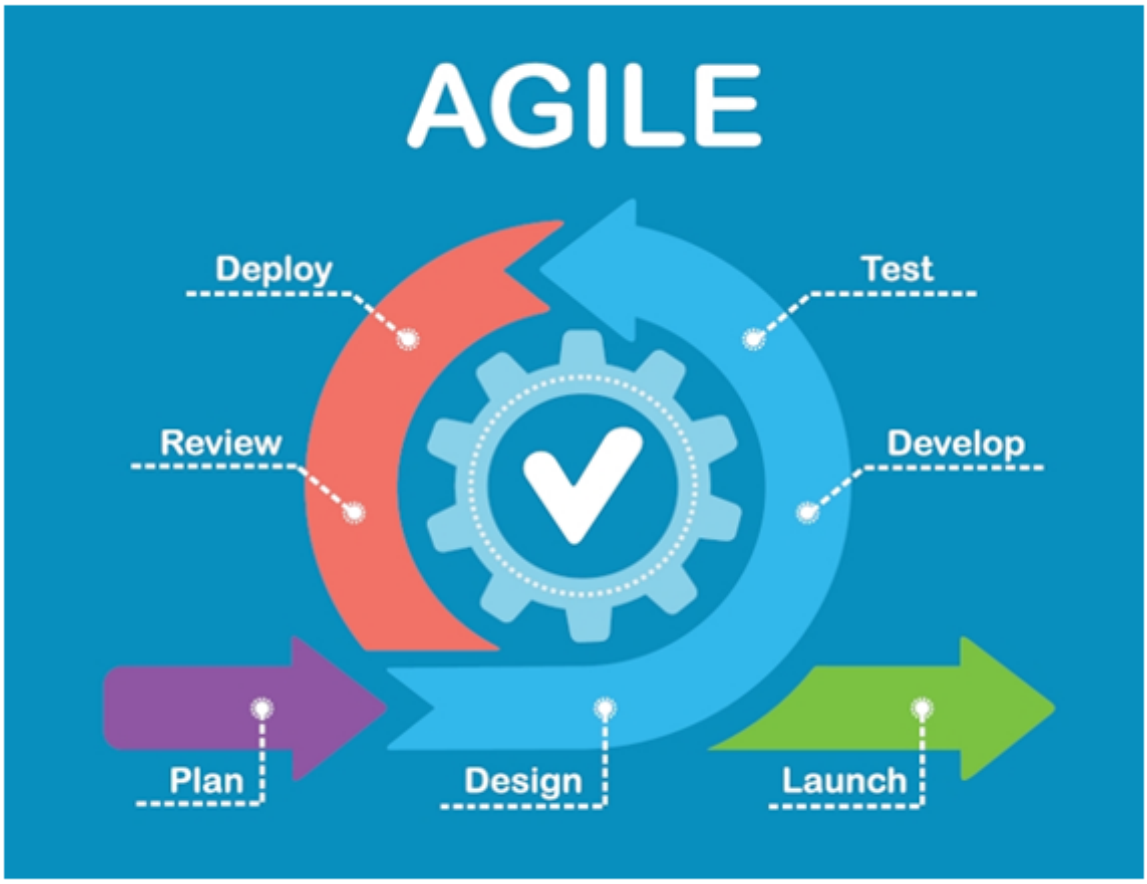

Figure 4.1: Agile Method

Chapter 5

Body of the Project

5.1 Work Description

In the project, I have simple things on it. First of all, I have developed the user interface and see how it looks. Create a responsive website which name is Refined Technologies. Mainly it is a system where company can maintain the whole crude oil process and their valuable data. There are lots of excel sheet data, that can be upload or add here to see all the measurements separately and it helps to see total calculation of every measurement which features are given on the website.

5.2 Requirement Analysis

Rich Picture

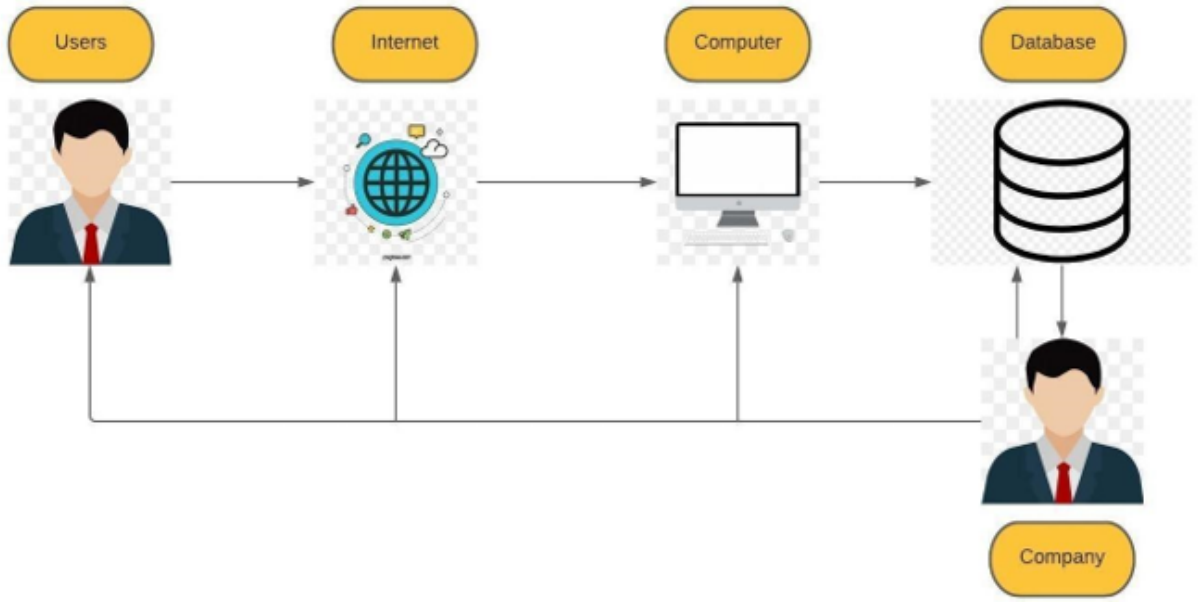

Figure 5.1: Rich Picture

Functional and Non-Functional Requirements

Functional Requirements:

1. Authority
• New registration entries entered in database
• Verify User
2. Employee uploading files
• Upload file (format: xlsx/xlsm/csv)
• Generate report
3. Authentication
• Employee must authenticate before accessing system by Admin
4. Register user
• Employee must fill-up application form for registration to use the system

Non- Functional Requirements:

• Security:
Only authorized users can access the system with email and password.
• Performance:
Records and updates can be easily tracked.

• User Friendly:
The system is designed to be very interactive.
• Maintainability:
Backups for databases are available.
• Service:
The system will run 24 hours a day and 7 days a week.

5.3 System Analysis

5.3.1 Six Element Analysis

System Roles						
Process	**Human**	**Non-Computing Hardware**	**Computing Hardware**	**Software**	**Database**	**Communication & Network**
Access Resources	Users -View the resources	N/A	-Necessary devices (e.g., pc, laptop, phone)	-Browser -Website	-Stores all the resources DBMS (POSTGRE SQL)	- Internet/broadband - Mobile data
Upload Files	Select the file from the device(excel/csv)	N/A	-Necessary devices (e.g., pc, laptop, phone)	-Browser -Website	-Stores all the resources DBMS (POSTGRE SQL	- Internet/broadband - Mobile data

Figure 5.2: Six Element Analysis

5.3.2 Feasibility Analysis

A feasibility study is carried out to establish whether the project, once completed, will serve the organization's goal for the amount of work, effort, and time invested in it. A feasibility study allows the developer to anticipate the future and usefulness of the project. A feasibility study assesses the viability of a system concept, including the impact on the organization, the ability to meet user needs, and the efficient use of resources. A feasibility study is carried out to examine the practicality of a concept. It can, for example, be used to establish whether a project is legally, technically, and commercially feasible.

It reveals whether or not a project is worthwhile to invest in, and in some situations, whether or not a project will be finished. Feasibility studies allow firms to uncover and organize all of the elements needed to make a business effective and optimize earnings.
A feasibility study is carried out to establish the technical, operational, and economic viability of a proposed system. We can gain a clear understanding of the system's advantages and disadvantages after conducting a feasibility study.

Technical Feasibility:
The proposed system is developed using the front-end tools are JS Vue and HTML and the back-end tool is falcon which is python frame work.
The proposed system requires a Personal Web Server to process user requests. The Web browser is used to access web pages contained within the Windows operating system. The proposed system will run on Windows 10, Windows 9, Windows 9x, Windows NT, and Windows 2000. Because Windows is a very user-friendly and graphical operating system. All necessary hardware and software are commercially available. As a result, the system is technically viable.

Operational Feasibility:
The proposed system is operationally feasible for the reasons listed below:
• The user benefits the most because the majority of his time is saved.
• The user is attended to at his place of employment.
• The proposed system's cost is almost insignificant in comparison to the benefits gained.

Economic Feasibility:
Due to the low cost of the necessary hardware and software, the initial investment is the only cost and does not require further enhancements. As a result, it is economic. The system is feasible in every way, which encourages participation in the design process.

5.3.3 Problem Solution Analysis

The problem solution Analysis are:
• Develop a workable solution for managing crude oil refine management activities.
• Establish all data with data calculation connections.
• It is a connection building system to the chemical engineer and other management people of crude refine technology.

5.3.4 Effect and Constraints Analysis

It is planned to develop an online refined technology system, which will be a web-based database application system that will allow user to check, update and delete every part of data of crude oil refined measurement data. In a short way we can say that this software is for the crude oil refine data management system.

Benefits:

- Secure and safe storage of records.
- Simple way to check data, no more manual data to store.
- Simple management of crude oil refine information.

Goals:

1. Make all calculations easier to store.
2. Easily update or delete data of refining crude oil.
3. Easily can be accessed from anywhere.
4. Enable data and information to be stored and retrieved immediately.

5.4 System Design

UML Diagrams

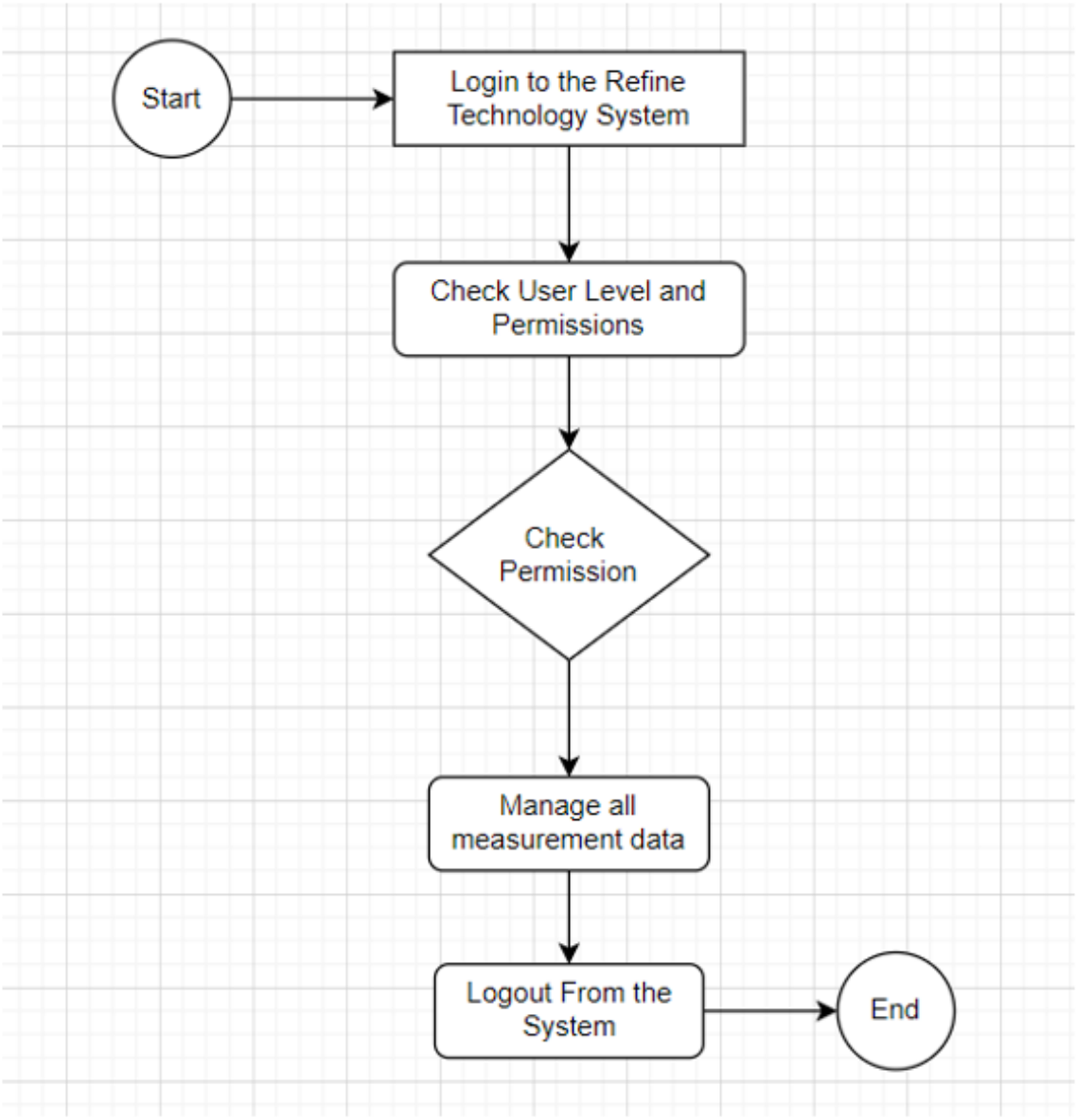

Figure 5.3: UML Diagrams

Architecture

System architecture is a conceptual model that describes the structure, behaviour, and view of a system. It is basically what we are building overall. A good structure can be effectively managed, and it can be the idea for a long run. It should offer scalability and the system can be updated easily.

There are various types of system architecture. For this project, web application architecture is considered as the most important. The web application architecture determines the interactions between applications, databases, and middleware systems on the web. It ensures that multiple applications work simultaneously.
As soon as the user hits the go button after typing a URL in the address bar of a web browser, it requests for that web address. The server sends files to the browser as a response to the request made. The browser then executes those files to show the requested page.
Finally, the user can interact with the website. The most important thing to note here is the code parsed by the web browser.

5.5 Implementation

5.6 Testing

Input

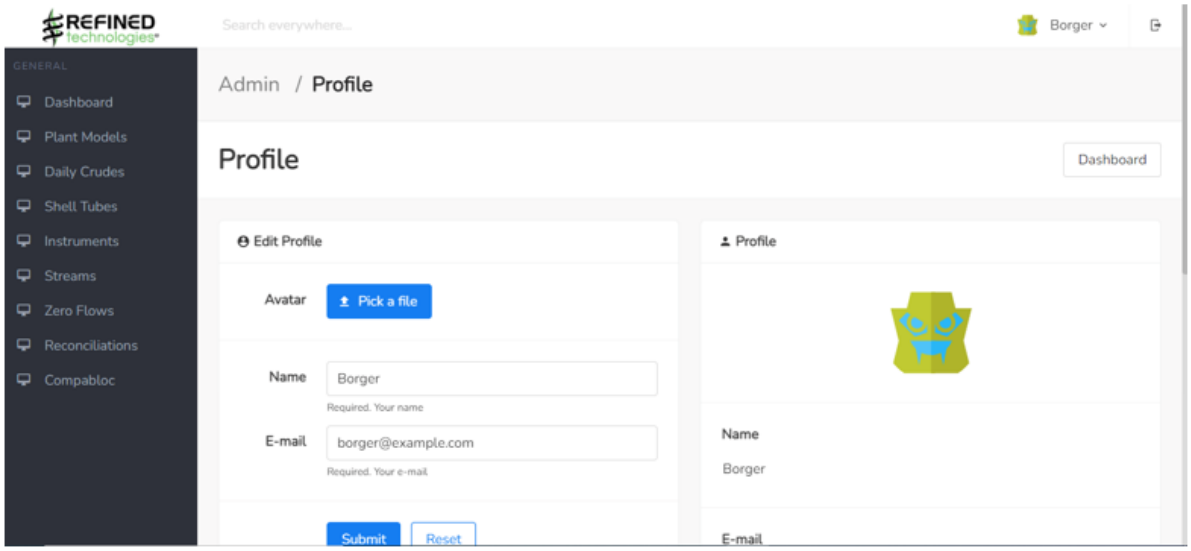

Figure 5.4: User Page

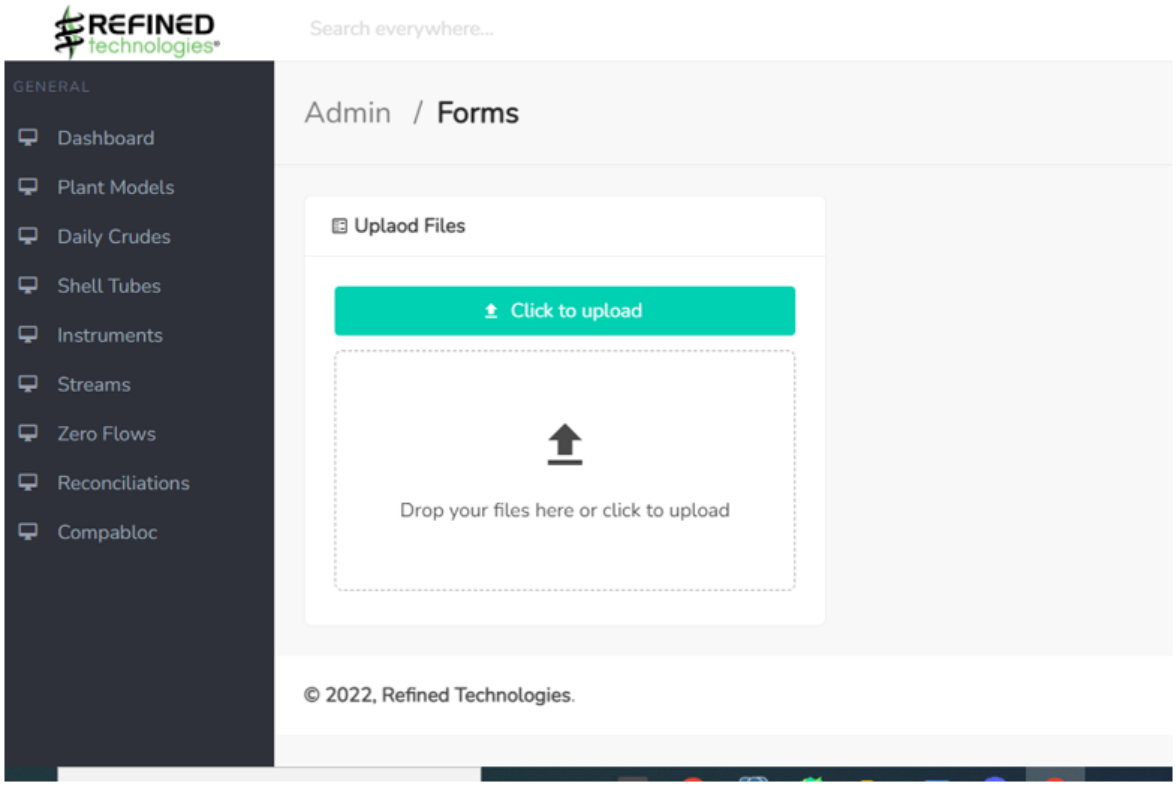

Figure 5.5: Excel file import

Output

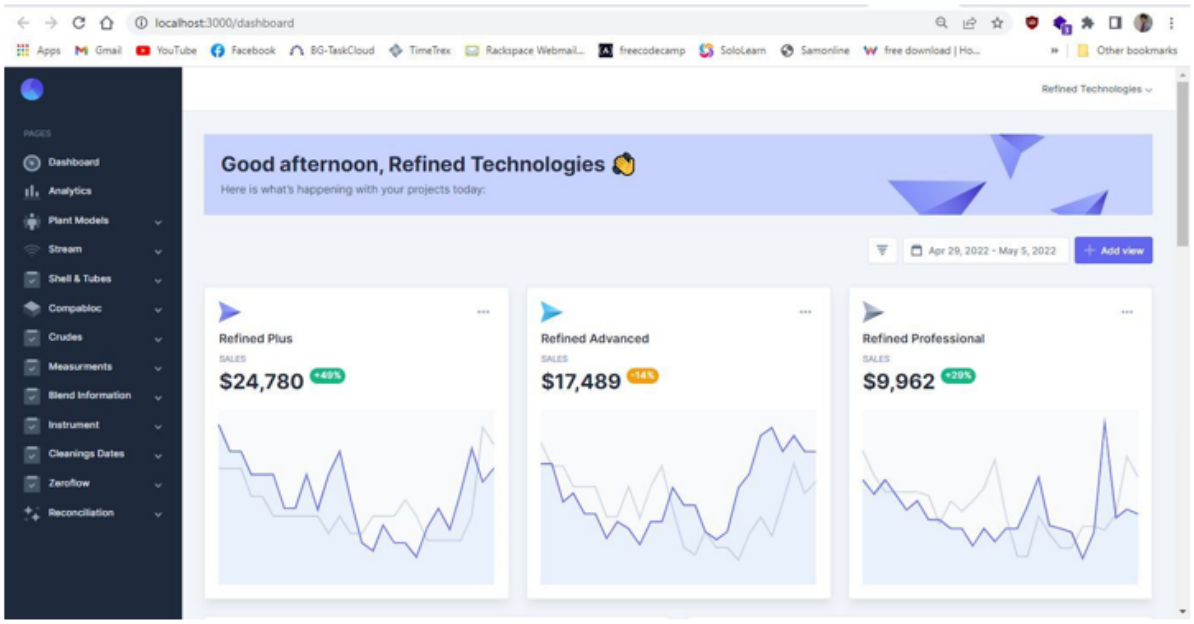

Figure 5.6: After successfully login this will be first page for the use.

When a user clicks any category it will load the last time putted data. Like in the picture.

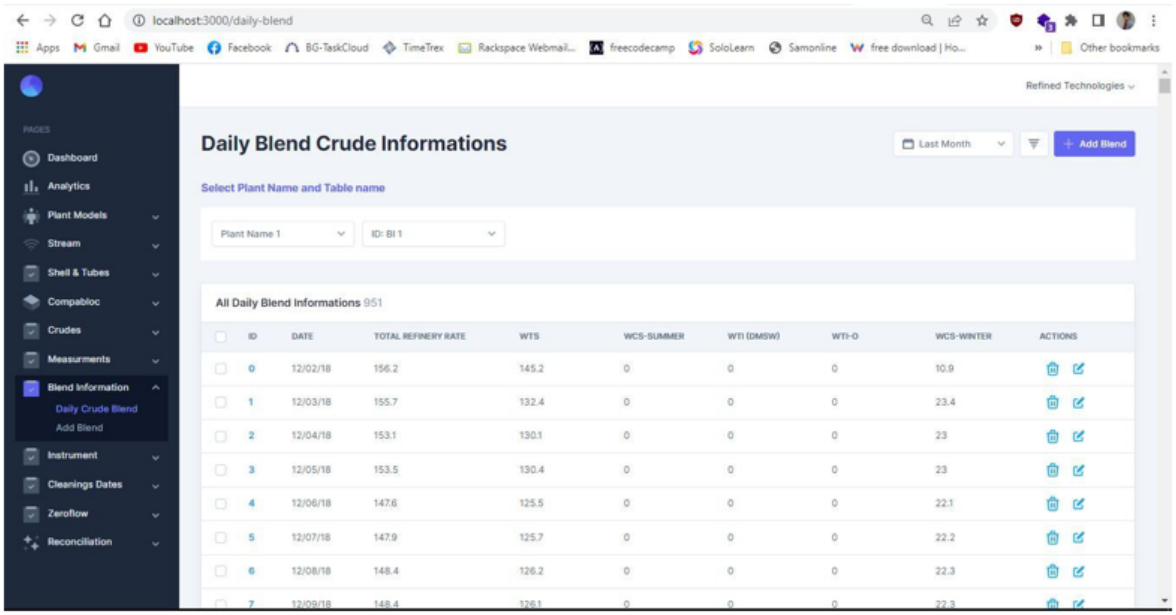

Figure 5.7: This is the blend data output.

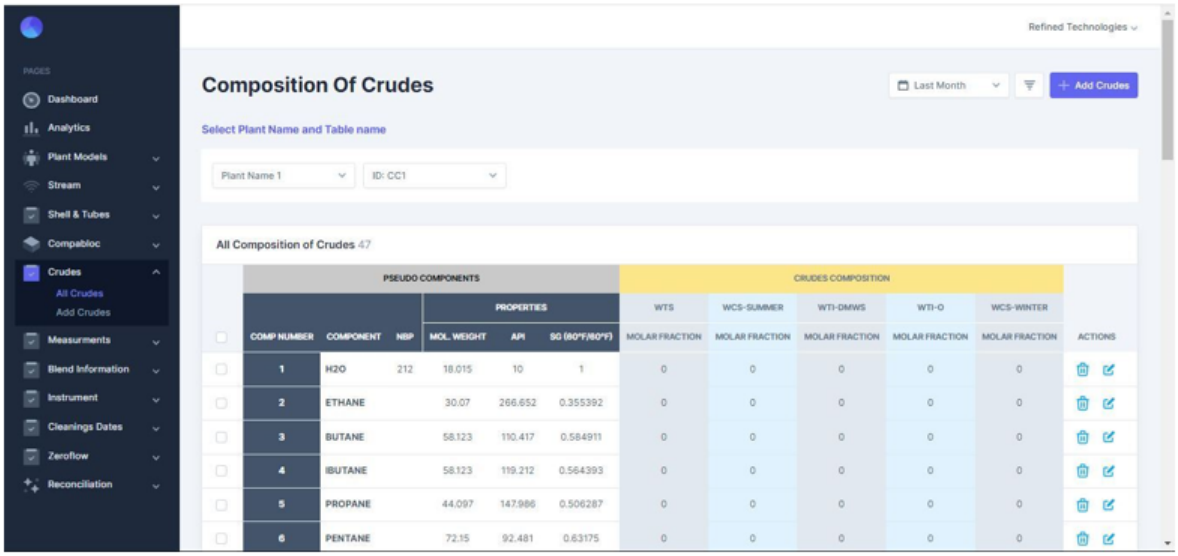

Figure 5.8: A part of crudes data. Shown in the picture.

Chapter 6

Results & Analysis

The fact of our system is not to lose any data. Only the crude company owner will be administrator and when he create user data in data-base only those people can access the system. Those user can able to input data and import excel file. Also able to edit or delete data for their on purpose. So in starting the system only for some specific employer based. As we can see picture in (5.7 Output). Also it can generate report and graph when a user click on Reconciliation option. There are have same pictures too:

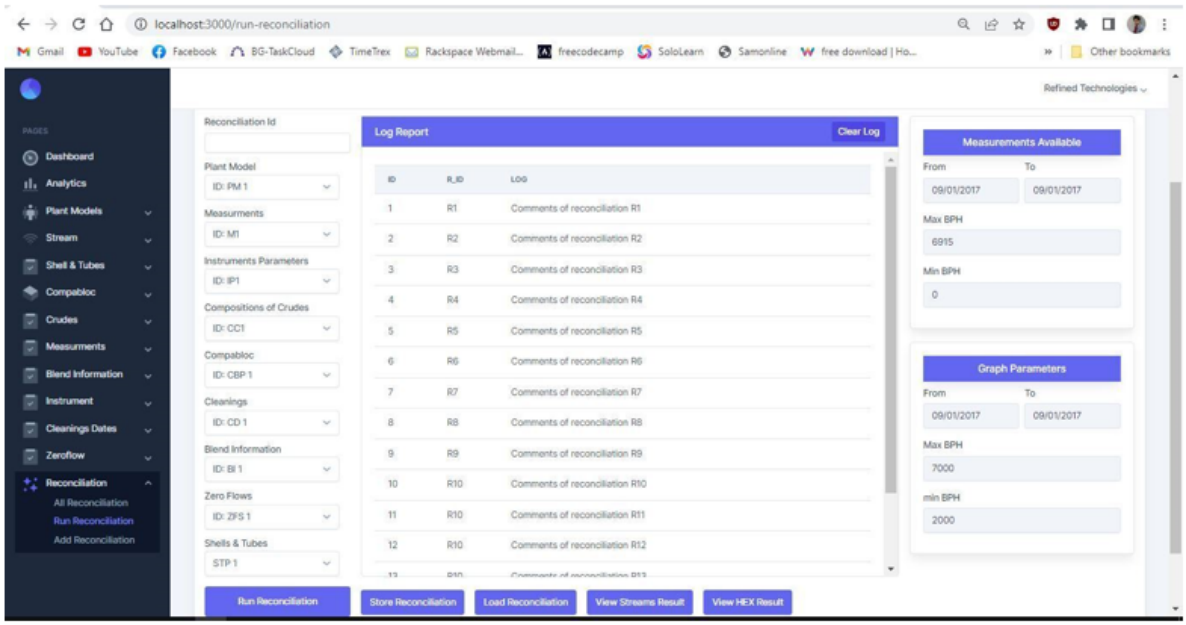

Figure 6.1: Report logs with Reconciliation

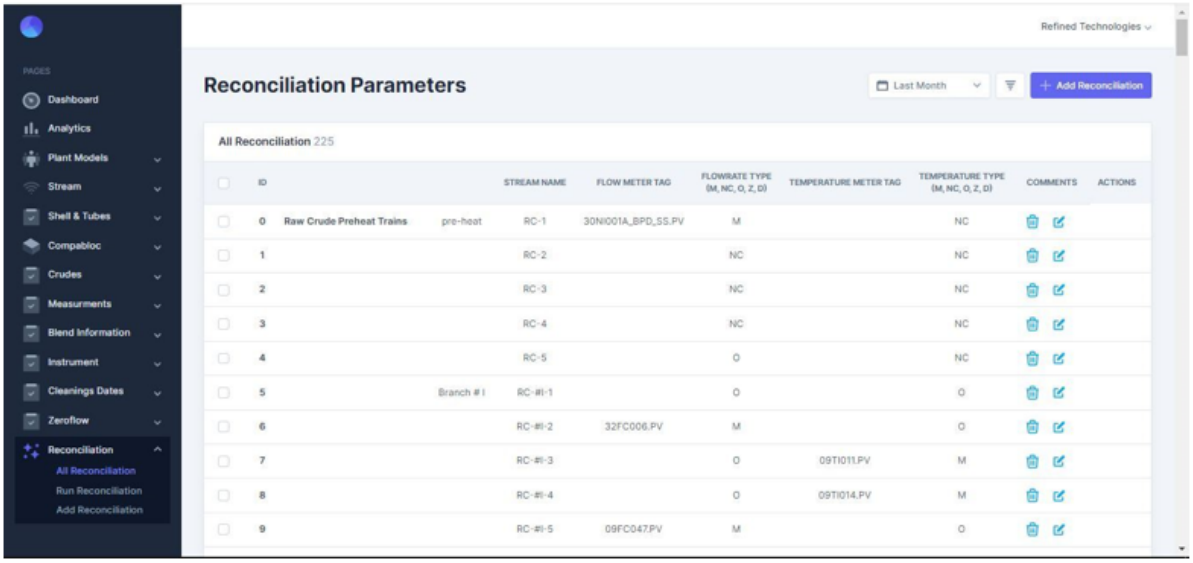

Figure 6.2: Reconciliation Parameters with barrel's name.

Chapter 7

Project as Engineering Problem Analysis

7.1 Sustainability of the Project/Work

The ability of the product to be updated and maintained is referred to as sustainability. Every newly published program in the modern era needs to be maintained and regularly updated for its user base. The projects are expected to bring in money for the business.

This project is based on data management. A crude oil company has many sides or sectors. Every side has particular data, different kinds of measurement and scale. It's very difficult to handle all the data for humans. Also they have lots of daily data for all sectors. If somehow a data or data sheet gets missed then the all day's data/ a month data can be wasted or can't be handled. So if the company uses the system for uploading data there are no data losing issues also their data gets safe and saved. For that they have to maintain the system for every 15days or a month.

7.2 Social and Environmental Effects and Analysis

Each business/organization needs to preserve safe records for its own benefit and utilize these data to estimate the statistics of its current status and to draw up a better plan for the future. Now, there are databases that can be simply handled to save the data in a safe way but which do not fill in the other unique needs and you will not have the possibility to modify those systems. This database system is built such that the company has better visualization and high security instead of building up Excel sheets and collecting the scattered data.

7.3 Addressing Ethics and Ethical Issues

Strong ethical concerns have been raised about database design due to a number of factors, including the growth in data size, the sophistication of access mechanisms, the ease of access, the increase in invisibility, the circulation and excessive global sharing of information, the interaction with other databases and applications, the growth in the amount of personal information being shared, the increase in information merchandising, and the lack of or inadequate security for database owners. Ethics is a body of rules for moral behavior, a theory, or a collection of moral standards. Morality and ethics govern and come first in a civilized society. Individual moral behavior is not governed by any legal regulations. Nevertheless, to preserve the data gathered in databases, legal and moral principles must be followed.

• Limit data access or stop unauthorized access to all or a portion of a data set.

• Maximize the abilities needed for understanding and using the data in the current system.

• Implement complete data transparency, i.e., include elements that give the user the impression that they are the only ones using the database, or conceal all the extra distributional complications, leading users to believe they are dealing with a single centralized system.

• Include the idea of informed consent given voluntarily.

• Address security and data protection concerns.

• Make sure copyrights are safeguarded.

• Follow copyright regulations.

• Learn and abide by relevant regional and/or international rules when expanding globally.

• Safeguard IPR and IP.

• Do not violate another person's patents or intellectual property.

• Keep thorough records of everything to guard against potential claims of improper behavior or misconduct and for future reference.

Chapter 8

Lesson Learned

8.1 Problems Faced During this Period

Taking into account my experience as a student with a major in computer science and engineering from academic years, I could learn a lot about theoretical implementation and planning. I didn't have any concept about business life. But when I joined Bglobal IT farm an intern, I had a chance to work and deal with real-world concerns and encourage the problem to be resolved. Although this is not an accurate IT firm representation, we require much more information to set up our team's systems and partnership projects. I have insight into the practice. An internship is a terrific chance to make this experience a reality. The Bglobal is a IT company that debuted in 2006 and brought corporate customers for a long time. Throughout the entire time, I learned a lot I couldn't do in my academic life. I know how to work with the team in the software sector and how to deal with other team members with time limits. The most intriguing aspect I have appreciated and loved to do is to meet customers and meet criteria. I faced a lot of troubles and problems throughout my internship as an intern and as a new employee, and I'm not familiar with it because the region has been completely new to me. Below I have highlighted some of my significant problems:

• The main issue was to be timely in the office

• Secondly, coping with the company's senior members.

• Thirdly, to learn more about corporate norms and regulations.

• Fourthly, to understand more about existing projects that have previously been developed and analyzed.

• Fifth, meet new customers and turn their talks, words, and wishes into a recorded demand, and then entrust them to it.

As The Bglobal is a IT based organization I had to attend customer's meeting through zoom meetings at any time. I still struggle in understanding x bugs; I usually try my

best to repair it until I realize it is time-consuming so take aid from my team's senior developer, but most of the time I was unable to do so as my firm used to create a project with a language not taught during my academic year. Finally, it was a bit concerning to me to be a junior developer as there was a pressure that needed to be properly executed.

8.2 Solution of those Problems

In my academic years, I have indeed been taught theoretical problems and mini-projects. Unfortunately, I had to handle real-world situations that were relatively difficult for me throughout my internship. For the project in my office was a significant milestone that had to be done in a small amount. It must be of the highest quality. As I listed just a couple of problems above, I could address those challenges in order to make myself real. In embracing and implementing protocols as punctual in my work submission I have transformed some of them into a resolution in myself, only then will I be able to handle my regular work on time. Although I was a newbie web developer, I tried to talk more with the company's members to learn and comprehend the burden. I thought coping with them was a really crucial part, as tasks are carried out on schedule without proper communication. There was an existing project that was developed before I joined. It was difficult for me to comprehend them. Sometimes I seek support from my project manager or team leader who is the company's senior developer. Meeting corporate clients was a major issue because there was a chance of delivering inaccurate information but in due course, I improve the methods for correct and correct execution in the meetings. Falcon was a new frame-work for me, but throughout my internship, I couldn't find out more, but YouTube, stack overflow and git helped me a lot. Besides all the issues that were resolved afterward, I believe that I had a wonderful internship at Bglobal company.

Chapter 9

Future Work & Conclusion

9.1 Future Works

The project is still being developed and more updates will be added every day. As a discussion by the organization, there are more features will be added on this website. The system is going to connect to good cloud computing, which also ensures safe and secure data. We will then add the AI Data Analysis tool to provide a correct report and to show statistics on the costs or the level of management system.

9.2 Conclusion

This was a very successful internship for me. I've acquired new knowledge, know-how and met so many new people. I got to work and have professional practice in my field. An internship is a great opportunity to achieve this experience. The internship was good to explain my strengths and weaknesses. This helped me determine what skills and knowledge I must improve in the next time. I learned Python with falcon frame-work, Data-base system, JavaScript etc, during my internship. Now I understand how a website could be made. As has, I have worked in Refine technology with a developer team. Now I know how to work with the team in a software company and how to communicate in conjunction with other staff members in the project. The most interesting part I liked to do was talking to clients and successfully meeting their requirements.

Bibliography