Internship Report

SWE420

Submitted by

Moinul Islam Tanvir
2017831031

Performed at

LEADS

LEADS CORPORATION LIMITED

Institute of Information and Communication Technology
Shahjalal University of Science and Technology

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Prof M. Jahirul Islam, Phd., PEng.

Director,
Institute of Information and Communication Technology
Shahjalal University of Science and Technology

Subject: Letter of Transmittal

Dear Sir,
I am pleased to submit the Internship Report that you required. I have been working as an Intern at **'LEADS CORPORATION LIMITED'** on 4/1 semester as a part of our course, **SWE 420**.
 This report contains my experience in the company. It is my immense pleasure in presenting you this report based on my observation and experience during my internship period, starting from September 01, 2021, to February 31, 2022. During this period, I worked under the supervision of Md Nur Hossain, Senior Software Engineer at LEADS Corporation Limited.

I believe this report will be quite interesting and fulfill your expectations. I have tried to give my best efforts to prepare a comprehensive report. I will be grateful if you accept my report and your kind consideration will be highly appreciated.

Sincerely yours,

Md. Moinul Islam Tanvir
Reg Number : 2017831031
SWE, 4th Year, 1st Semester
Session: 2017-18
Institute of Information and Communication Technology
Shahjalal University of Science and Technology

ACKNOWLEDGEMENT

I am very much delighted to present this report to my internship experience at LEADS Corporation Ltd. I offer my gratitude to the **Department of Software Engineering, IICT, SUST** for giving me the opportunity to complete my internship at LEADS Corporation Ltd.

From LEADS, I thank **Md. Nur Hossain**, Manager at Leads Corporation Ltd, who guided me throughout the Internship.I would also like to thank my whole ultimusNex team for helping & guiding me throughout the journey on my Internship.

Thanks to my InternMates, **Md. Noor Uddin & Sania Rahman** for Helping & supporting me, they made this journey a more pleasant and fun experience. I learned a lot of useful lessons from them.

EXECUTIVE SUMMARY

This Internship report serves the purpose to record the details of my industrial training as an Intern at LEADS Corporation Ltd, Bangladesh, which is one of the leading software companies in Bangladesh and also has great impact globally. This report will cover the details of my journey as an Intern at LEADS Corporation Ltd which began from september 01, 2021 to February 01,2022.

Students enrolled in Software Engineering in IICT,SUST have to undergo Industrial training as an Intern for a certain period of time(six months) prior to graduating. Students are allowed to make their own choices and complete their Internships in any recognized company or audit firms. The main goal here is to expose the students to involve in industrial environment, establish a deep understanding on the path they are taking, and to provide
The appropriate work-related training to them in the field of Software Engineering.

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Introduction

Internship is a work experience offered by a company / employer for a certain period of time. It is often paid and sometimes voluntary. Interns are mostly undergraduates or freshly graduated students. Internships can be both part-time and full-time, depending on the intern and the employer.

In Internship, An Intern learns 'how real life projects work', 'what tools are needed', 'how to handle them'
, 'how to manage these tools and projects'. In most cases, Interns get the precious opportunity to work on main projects of the company. Intern's world of thoughts expands tremendously if they get this opportunity. Internship is the ultimate opportunity to apply what he has learned throughout the entire academic life.

The Curriculum of Department of Software Engineering, IICT, SUST, includes an Internship program of 6 months in 7th semester. SWE emphasizes the fact that students can work in the real life environment at ease. It keeps students up-to-date with latest technologies, best practices and work culture.

1.1 GENERAL OUTLINE OF INTERNSHIP

Outline of an Internship varies from organization to organization. Internships can be generally divided into two types. Which are

1. Part time
2. Full time

Part time Internship is suitable for people who want to gain work experience as a side mission like undergraduate students, people who already work in another field etc.

Full time Internship is similar to full time job as interns have to put in 8-9 hours of effort(same as employees).

Full time Internship is great because the intern gets to focus fully on learning and there are no distractions.

1.2 OBJECTIVES

Some key points on objectives of Internship are discussed below

1. Adapting to various work cultures like Corporate Culture. To boost the adaptability of Interns to work at similar cultures efficiently.
2. Improving proper mindset, attitude, growth and logical judgment of Interns.
3. Experience on many projects which is valuable.
4. To adapt from academic learning to Industrial work.
5. To gain an overview of what the industry's requirements are now and will be in the future.

Please Note that I cannot share a lot of information about my Internship due to NDA agreement.

1.3 LITERATURE REVIEW

This report is mainly based on my internship at **Leads Corporation Limited.** Firstly, detail description regarding

The company structure, culture, management are discussed. Next, there is discussion about the project I was in during Internship and the skills that I have learned.
This part contains the technical details about my work. Lastly, my personal opinion regarding the whole internship period is included.

1.4 SOURCES OF INFORMATION

This report contains much technical and theoretical information. All the information that is presented in this report is authentic. The authenticity is based on the review of LEADS Corporation Limited. The external information is based on related website links. Information about the company and my internship is reviewed before submitting so that there are not any issues regarding accurate information and confidentiality.

1.5 SCOPES

Scopes mean the area of focus and boundary line of something. The key factors that decided my scopes are stated below…
1. Company Overview and culture without violating the Confidentiality
2. The training i have received from LEADS
3. Growth of my technical skills and experiences
4. My overall experience and opinion about the Internship.

1.6 LIMITATIONS

There are also some limitations that are impactful on this report. They are discussed briefly below:

1. The report is based on my experience from september 1, 2021 to February 28, 2022.
2. A Lot of information about my Internship might be confidential. So I am only disclosing information which I am sure to be non-confidential.

COMPANY PROFILE

In this section, the culture and customs of **LEADS CORPORATION LIMITED** is discussed. The overview of **LEADS,** what it does, employee training, facilities, social activities, customers and partners are discussed in the subsection.

2.1 COMPANY OVERVIEW

LEADS Corporation Limited has been a foremost information technology service provider since 1992 when it became the exclusive distributor for Bangladesh of the global giant **NCR Corporation**, and took over the support service of NCR's then Bangladeshi customers. **LEADS** has come a long way since, to become the leading provider of application software for the financial sector of the country, among its myriad of different products and services.

LEADS is involved in designing, developing, implementing and maintaining business application software for both domestic and overseas markets. **LEADS** provides **Core Banking Solution** (**BankUltimus**) for the Banking industry for both local and global markets. In addition to the banking industry **LEADS** provides products, services and solutions for non-banking financial companies, agent banking, capital market, broker house, life insurance, enterprise resource planning (ERP) etc.

Furthermore, **LEADS** provides complete life cycle of software development services including system analysis, use case development, system

architecture & design, system integration, native, web API development, UI/UX design, database design and administration, functional and system testing, quality assurance and project management. Apart from the above-mentioned services **LEADS** also provides diversified IT solutions and services that support attainment of client's business objectives like building network infrastructure, plastic card personalization, delivery & installation of PCs, Servers, storage and backup solutions, POS, and ATMs etc.

Over the last couple of years, **LEADS** has also moved into disruptive technologies like **BLOCKCHAIN**, Internet of Things (IoT), Artificial Intelligence (AI) etc. Today LEADS is considered as one of the renowned ICT Solution Providers of Bangladesh and has become an IT partner of choice for managing people, process and environment. Continuous thrust for improving quality is the reason behind its success. From paltry 12 individuals, which LEADS inherited in 1992, it now has a core competent team of 300 personnel.

2.2 MANAGEMENT

SHAIKH ABDUL WAHID

MD & CEO

Sadat Anwar

HEAD OF HR

MOHAMMAD AKTERUZZAMAN
HEAD OF FINANCE

MOHAMMED ASHRAFUZZAMAN
Chief Technology Officer

ANISUR RAHMAN KHAN
Chief Marketing Officer

Chairman:

SHAIKH ABDUL AZIZ

2.3 WHAT LEADS DOES

LEADS is a huge company. LEADS have worked on many projects and solutions. LEADS mainly works banking solution, it's core banking solution is **bankUltimus**
LEADS also worked on **VerifID, CenterPoint, LEADSVAT, INSURSOFT, CAPITA, LIA, RecruiteGenie, Blockchain** etc. **LEADS** provide the best services on developing banking solutions such as **bankUltimus**
LEADS practices the idea of iterative development for each of their projects. LEADS ensures the best services by using the latest technologies like **dot net Core**, **vueJs** etc. They have over 15+ partners and 500+ customers.

Since 1992 LEADS has had a strong presence in the Government sector in Bangladesh. LEADS is very much involved in several Governmental projects thus contributing to the goal of "Digital Bangladesh". LEADS provides a complete life cycle of software development services including system analysis, use case development, system architecture & design, system integration, native, web API development, UI/UX design, database design and administration, functional and system testing, quality assurance and project management. LEADS also provides diversified IT solutions and services that support attainment of our Government client's business objectives like network infrastructure building, plastic card personalization, delivery & installation of PCs, Servers, storage and backup solutions, POS, and ATMs etc.

2.4 SOFTWARE DEVELOPMENT PROCESS

Software Development Process is a division of software development work into distinct phases containing with the intent of better planning and management and more efficiency. LEADS follow the Agile Development Process to implement and deliver their products. LEADS follow the Agile Development Process to Support Proper Integration of project requirements.
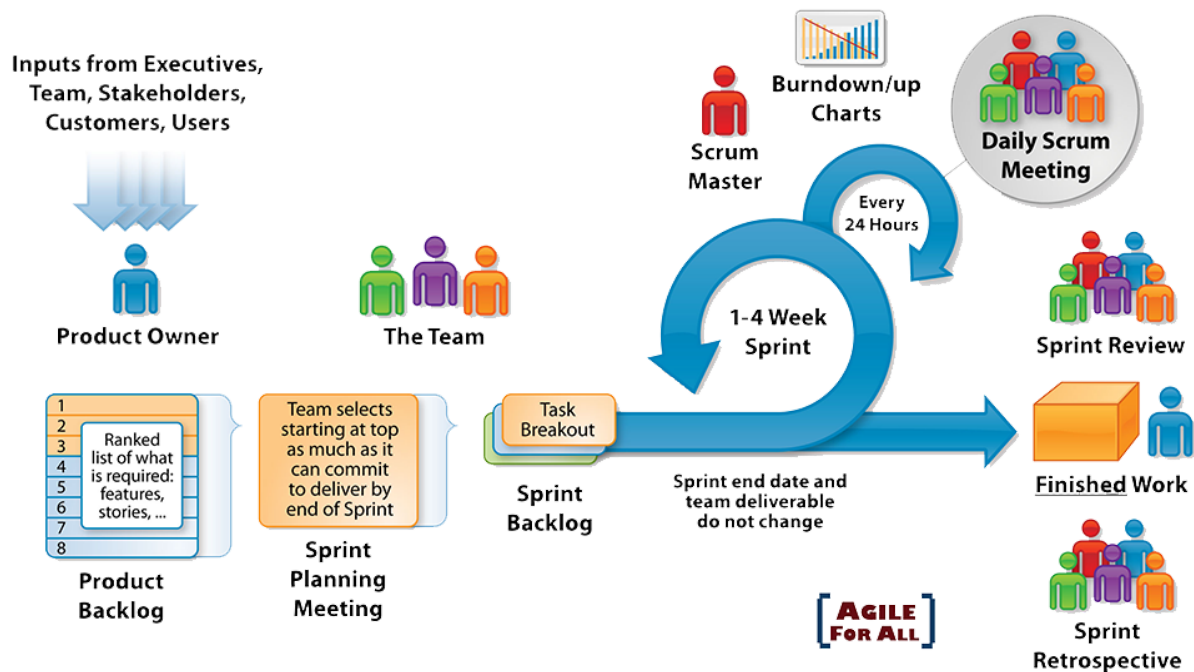

Figure 2.4: Scrum Method

2.5 CUSTOMERS PARTNERS

LEADS is the leading software organization in banking solutions in Bangladesh. But LEADS worked on many foreign projects.

Figure 2.5: SOFTWARE OUTSOURCING SERVICES

Among many clients **LEADS** have some of them are:
1. IPDC Finance LTD
2. BRAC EPL
3. LankaBangla Finance
4. Murphy Systems Co. Ltd(japan)
5. Wanderly INC(USA)
6. KIMIK IT (Denmark)

7. CocaCola Bangladesh LTD
8. LIC Bangladesh LTD
9. H&M Bangladesh
10. SouthEast Bank LTD
11. Premier Bank LTD
12. Meghna Bank LTD
13. NRBC BANK
14. NBP Bangladesh
15. Probashi Kallyan Bank
16. Shahjalal Islami Bank Ltd
17. First Security Islami Bank and many many more

2.6 EMPLOYEE FACILITIES

LEADS has a very wonderful environment for Work. Which really sets the mood to work with deep focus.
The whole Area was fully air conditioned and their electricity backup so that no Work gets hampered or wasted. Employees and Interns have to work for 7 hours from 9:00 am to 6:00 am. 1 hour is for Lunch. The working days for employees are 5 days per week, Friday and Saturday are off days. **LEADS** also maintains all government holidays. **LEADS** has a very friendly environment. Clean Drinking Water and Tea are also provided free of costs. **LEADS** also have their own Building now.

2.5 TOOLS & TECHNOLOGIES

LEADS is not stuck with specific languages and boundaries, they adapt to new languages and technologies as needed by their customers .

FrontEnd: VueJs, JavaScript, HTML5, CSS, JQuery

C#/ASP.NET: C#, ASP.NET, ASP.NET CORE, MVC, web API

Mobile: Android, windows

Others: PISQL**,** GIT, DEVOPS, Swagger

Some of these tools and technologies are frequently used depending on the project entirely.

2.6 ACTIVITIES

LEADS won several prestigious awards throughout the years. For Example, **LEADS** won **accolade** in **The BASIS National ICT Awards 2020 for "AidTrust**: **Blockchain** for **Humanitarian Aid Distribution**" in the category of **Inclusions and Community Services** (HC – ICS) – Community Services. **LEADS** was also awarded with the prestigious BASIS National ICT Awards 2018. Etc…

2.7 HUMAN RESOURCE

Leads is a family of 300+ expert professionals. **Leads** is a home to a diverse set of certified personnel like Microsoft MVP, MCP, MCTS, CEH etc.

1. Project Managers
2. Software Architects
3. Software Engineers
4. QA Experts
5. UI/UX Designers
6. Blockchain Experts
7. ML, AI Experts
8. IoT Experts
9. Web Developers

2.8 Trainings

LEADS provides various internal and external training programs to enrich the knowledge of their associates which help them to increase their output.**LEADS** focuses on the growth of their employees, so there are many hours dedicated to internal knowledge sharing sessions. During my internship, some of the knowledge sharing sessions were about TYPESCRIPT basics, VueJs Tricks, OverView of VueJs etc.

INTERNSHIP ACTIVITIES

LEADS has a well structured training plan for Interns.

3.1 My Work and deeds at LEADS

I performed a lot of deeds during my Internship at LEADS. To simplify this, I divided my activities into 3 phases.

1. Learning new Technologies & Tools
2. Adapting to LEADS culture
3. Finishing Test Project of LEADS
4. Working on Project UltimusNex

3.1.1 Learning New Technologies and Tools

Firstly, I learned some new technologies I was not familiar with. They are Discussed Below.

Technologies:

1. **Vue.Js:** Vue.js is an open-source model–view–viewmodel front end JavaScript framework for building user interfaces and single-page applications. My TeamLead **Md. Nur Hossain** Bhai wanted us Interns to work at project **ultimusNex**. **UltimusNex** frontend is based on javascript framework "Vue.js". So I Started to learn more about components, props, slots, event handling, routing etc. I had not worked on anything similar to this before. So Learning VueJs was a challenge for me. I followed Some Udemy Courses and Vue.js Documentation. Also many knowledge sharing sessions were held which also discussed Vue.js in brief. Which helped me along the way.

2. **C#:** C# (C-Sharp) is a programming language developed by Microsoft that runs on the .NET Framework. C# is used to develop web apps, desktop apps, mobile apps, games and much more. **BankUltimus** is the core project of **UltimusNex. UltimusNex** is basically all features of **BankUltimus** but built with latest technologies & more user friendly UI. I Surfed some online tutorials sites like tutorialspoint and w3Schools. And It was pretty easy to get familiar with this language. Because I had worked on java and c++ languages before which are pretty similar to c#.

3. **ASP DOT NET CORE:** ASP.NET Core is a free and open-source web framework and successor to ASP.NET, developed by Microsoft. It is a modular framework that runs on both the full .NET Framework, on Windows, and the cross-platform .NET. However ASP.NET Core version 3 works only on .NET Core dropping support of the .NET

Framework.The framework is a complete rewrite that unites the previously separate ASP.NET MVC and ASP.NET Web API into a single programming model. After having a good grasp on c# I moved on to ASP DOT NET CORE. I learned new concepts like MVC, dependency injection, WEB API.

4. **HTML & CSS:** The HyperText Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript. Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript. Although I was already familiar with HTML & CSS I went through a quick recap on them. They are the base of any web projects and kind of basic knowledge to know.

5. **JavaScript:** JavaScript, often abbreviated JS, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS. As of 2022, 98% of websites use JavaScript on the client side for web page behavior, often incorporating third-party libraries. As Vue.js is a JavaScript framework, learning JS will give me a better understanding on a deep level, so I started learning JS. Learning JS was comparatively easy.

6. **PLSQL:** PL/SQL is Oracle Corporation's procedural extension for SQL and the Oracle relational database. PL/SQL is available in Oracle Database. Oracle Corporation usually extends PL/SQL functionality with each successive release of the Oracle Database. I Learned to write Stored Procedure and how to debug with plSql too.

TOOLS:

1. **VS CODE:** VSCode is an editor developed by Microsoft which combines the simplicity of a source code editor with powerful developer tooling, like IntelliSense code completion and debugging. VScode is pretty lightweight compared to other editors and very good for debugging. So I used VSCode for coding in Vue.js.

2. **VISUAL STUDIO 2017:** Visual Studio guides one with live assistance as one writes code, no matter what language one uses, from C#/VB and C++ to JavaScript and Python. I used Visual Studio 2017 to develop API endpoints and to debug. Although Visual Studio is pretty heavy and sluggish, its debugging feature outweighs that.

3. **POSTMAN:** Postman is a very useful tool to design, build and test your API. Postman makes it easy for us to debug. It saved me a lot of time during debugging. Also saving Postman collection is a good habit for later use, and frontEnd developers can work Without knowing much about the database. When I developed API points, I always used Postman to test each API. After testing and delivering API endpoints, I also uploaded the Postman Collection so that if someone needs it, they can use the postman data to test the APIs or get some more info about how the API works.

4. **GIT:** Git is software for tracking changes in any set of files, usually used for coordinating work among programmers collaboratively developing source code during software development. Its goals include speed, data integrity, and support for distributed, non-linear workflows. Git makes it easy to work simultaneously on the same project. I did have some ideas about git, but didn't know about branches and merging. After working with the team a few days, I got the hang of it.

5. **DEVOPS:** DevOps is the combination of cultural philosophies, practices, and tools that increases an organization's ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes. Leads uses Devops to develop and deliver more efficiently.

6. **CHROME DEV TOOLS:** Using Chrome Dev Tools is a must to debug and understand the UI more easily. Sometimes one cannot find the bug or error in the project by simply looking at the UI. Dev Tools gives us an overview of that, So debugging becomes much easier. It was a goto tool for me, everytime I developed an UI I checked the console with Dev Tools to check for errors and warnings. It's a great way to develop bug free webpages.

3.1.2 Adapting to LEADS culture:

As LEADS is a Corporate organization and works mainly on providing Banking Solution, it was very new to me. Their workflow was very organized and systematic. What was troublesome for me at first was the unknown Banking Terms. For example, debt, loan, Account Freeze, Account Block, DPS account and many more. ThankFully, my team was really helpful, they answered beautifully whenever I asked the meaning of these terms.

3.1.3 Finishing Test Project of LEADS:

Although I learned a lot in the 1st month, I had no real work experience. So Our TeamLead provided a test project which provides every task that we will face in UltimusNex project. So I Started Working on this project. It was a CRUD site with table views, Modal Views etc. This test Project pretty

much covered basic tasks which was very helpful for us to work on the UltimusNex project.

3.1.4 Working on Project UltimusNex

In this phase, I had to work on **ultimusNex** websites. During this time LEADS started to shift their workplace from BanglaMotor to Mirpur. Thus the last 2 months of my Internship was work from home. BankUltimes has over 700 fast paths. When I put my hands on the ultimusNex only like 50-60 fast paths were developed from BankUltimus. These fast paths at first were simply CRUD sites but certain mechanics were special. And during every sprint the whole team discusses the fastPaths of next sprint and we get directions from senior developers and team leader about how the fastpath should work. During this period, I faced many technical bugs. But LEADS has a dedicated IT team who helped me in such cases. Like VPN connection, Remote Desktop Connection. I also got stuck on many bugs which really improved my oversight to fix bugs. For me Working on UI was relatively easier than Backend. So I took a lot of help from the members of my team, especially from other Interns and other Software Engineers.

I didn't have permission to merge, senior Software Engineers took that role, First we have to get our work reviewed by other Engineer and if he/she finds that OK, I get to request it for merge, otherwise I get feedbacks on my work which I solve and then again request for merge.I mostly worked on Config Parameter Pages on UltimusNext.

One valuable thing I learned is that "coding is easy, Debugging is hard". So it's better to code patiently and thoughtfully at first rather than debugging forever and forever.

Also I couldn't understand others' code before this Internship but during this Internship I improved upon this skill.

Now Understanding others' code is not that bad. I must say working on real life projects is completely different than working on personal projects. My Social skills and teamwork drastically improved.

3.2 NON TECHNICAL IMPROVEMENTS

PROFESSIONALISM
LEADS is a corporate company and has over 300+ employees. And each of them shows extreme professionalism in both their behavior and work. Employees were professional about any situation they were thrown in. I also grasped it slowly during my Internship. Leads also prefer formal dress code, which really sets in a working mood environment.

PLANNING

LEADS follow Agile Development methods, and sprint planning, Scrum meetings are the most important thing for a successful sprint in my opinion. I had to participate in this so I learned the hard way. I had to plan how much time I was gonna invest in what pages. This increased my efficiency to deliver in time.

KNOWLEDGE SHARING

LEADS always emphasizes knowledge sharing. In every sprint planning there is a dedicated time allotted for knowledge sharing. I learned about vueJs 3, TypeScript, MVC, workflow, IIS, publishing API projects by knowledge sharing. I even went out of my way to gain some insights about my error from other employees. Regular Sessions were held for knowledge sharing.

COMMUNICATION

Communication skills are very very important. Sometimes we just assume things instead of communicating which often results in disaster. At first I felt kind of uncomfortable to ask for help, or to ask about something but later I realized I had to do a lot of extra work and debugging because I didn't ask those questions. If I asked those questions many hours of my life would have been saved. Lesson Learned. I learned this the hard way. At the end of my Internship, communicating with everyone became easier for me. I dont always just

CONCLUSION

In the end, the overall remark about my Internship at LEADS CORPORATION LTD is very good. I did not work physically and did not have much time at LEADS because of COVID19 and also because of LEADS shifting. But it was somehow enough for me to get to know LEADS employees. I also was present in one of their BUFFET parties. Here are some key points about my overall experience.

The working environment is very beautiful. LEADS prioritizes the efficiency of their employees. Also the team I was in ultimusNex, was pretty friendly and cooperative. Team Lead Nur Bhai was very flexible and understandable
About how we want to complete our work, new ideas. So there was always room for creative ideas to pop in my head. Time is very strictly valued at LEADS. Everyday I had to report how many hours I have put in what activities. Which made me to not procrastinate and waste much time. Also every event/important news was shared in their whatsapp group and outlook Mail.

LEADS treats their Interns no different than full time employees. So they were very helpful when we wanted to learn something which might not be necessary for us(Interns) to learn. So LEADS also put me in the ultimusNex project, and gave me tasks according to my capacity. I am really grateful I had the opportunity to work on this project, which is really rare nowadays.

During work from home, I faced many difficulties but Rafiq Bhai and Selim Bhai from the IT team were always there to help me through it. LEADS gave me a windows domain and upon connecting through VPN, I could easily connect to my remote desktop. Which was really fast and smooth so coding was a pleasant experience during work from home(**WFH**).

LEADS is a perfect environment to learn new technologies, to grow, improve and hone their skills in software engineering. Has many Career Opportunities which are beneficial in the long run. LEADS culture and practices is second to none among any of the Bangladesh software industries. Leads has a good understanding of standard corporate life. Leads is a very good opportunity for Internship to learn and also for continuing career as a Software Engineer.