

Report on Internship

Course Code: SWE 420

Submitted to:

Department of Software Engineering
Institute of Information & Communication Technology
Shahjalal University of Science & Technology, Sylhet

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Registration No. 2017831040
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Vivasoft Limited



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LETTER OF TRANSMITTAL

September 01, 2020

Director

Institute of Information & Communication Technology

Shahjalal University of Science & Technology, Sylhet

Sir,

It's a great pleasure for me to submit this internship report as a part of my internship program (SWE420) of seventh semester. I have been working as an intern at Vivasoft Limited for six months time period, starting from August 13, 2021 to February 28, 2022.

This report covers my overall experience with the company, which includes both the learning phase and the active involvement with the current workforce. I hope that, this document will exhibit my total experiences, gathered knowledge and outlook based on my observation and learning process. I'm looking forward to your effective feedback on my entire report.

Sincerely yours,

Mehedi Hasan

Registration No. **201831040**

Session: 2017-18

Department of Software Engineering

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Shahjalal University of Science & Technology, Sylhet

LETTER OF ENDORSEMENT

To Whom It May Concern

Subject: Approval of the Report

This letter is to certify that, all the information mentioned in this document is true and not confidential to the company. The projects mentioned here have had successful involvement of Mehedi Hasan Institute of Information & Communication Technology, and Shahjalal University of Science & Technology.

I wish him all the best and hope that he will lead a successful career.

Internship Supervisors


Shafiul Hasan Md Tareq
Managing Director
Vivasoft Limited

Shafiul Hasan Md. Tareq
Co-founder
Vivasoft Ltd.

Biplab Chandra Sarker
Solution Architect
Vivasoft Ltd.

Acknowledgement

At first I would like to express my gratitude towards IICT faculties and officials to arrange this internship program for me. I am also grateful to the Vivasoft Limited for recruiting me as an intern and help me to go through this training as smoothly as possible.

I take this opportunity to express my profound gratitude and deep regards to my Supervisor Biplab Chandra Sarker, Solution Architect, at Vivasoft Ltd. for his exemplary guidance, monitoring and constant encouragement throughout the time of this internship.

I also make this chance to express a profound sense for gratitude to **Prof M. Jahirul Islam**, Director of IICT, SUST and **Fazle Mohammed Tawsif**, Lecturer of IICT, SUST for conducting the industry personnels and offering me the opportunity to take part in the internship such a renowned organization.

I am extremely grateful towards **Shafiul Hasan Tareq**, Co-founder of Vivasoft Ltd. for his constant support and guidance.

I am also thankful to **Mustafizur Rahman Nebir**, **Nayeem Ahmed & Sabbir Hossain**, Jr. Software Engineer of Vivasoft Ltd. for helping me to understand the technical terminologies, procedures and solving problems, which helped me in completing this task through various stages

Furthermore, I like to mention my gratefulness to all the good people of Vivasoft Ltd. for a welcoming treatment and always being keen to hear out any problem I face

I am obliged to all my Team members, people in Technology and Human Resource department for the valuable information provided by them in their respective fields and help me out at any problems. I am grateful for their cooperation during the period of my internship.

Executive Summary

This document highlights author's experiences and contributions towards **Vivasoft Limited** as an intern. It also represents the academic and non-academic acquired knowledge, achievements and challenges during the internship program. The scope of this document is to identify and describe the analysis carried out, projects completed, experience gained and focuses on the achievements as an intern.

Institute of Information and Communication Technology(IICT) of Shahjalal University of Science and Technology(SUST) offers bachelor degree on Software Engineering. According to the curriculum, an entire semester(7th) has been dedicated for internship program which carries total 18 credits. The goal of this program is to avail an opportunity for its student to experience and gain a practical knowledge of the software industry.

Being a bachelor program student of IICT, I was offered to take an internship at **Vivasoft Limited**, a successful local start-up which provides a number of logistics services and technological solutions for different real life problems of our locality to make people's life more easier than ever. After my joining as an intern, I was cordially welcome by **Vivasoft** family and assigned to a team. After finishing a basic learning phase and assignments, I have started to get familiar with their projects and methodologies. While working on these projects, I have learned the software development processes that is followed by the team. The challenges during these projects helped me to be collaborative with other team members and colleagues. I feel really fortunate to have support and mentoring from all of my teammates and team leaders.

During my last six semesters, I have learned many software engineering practices. I found a practical implementation of such as agile process of development, scrum, sprint etc. It really helps me to make the link between my theoretical knowledge with the practical implementations.

The experience of working in real life project helped me to both develop my problem-solving skills and practice the software engineering best practices. This internship program helped me to improve my skills, confidence and provided me an opportunity to be a professional Software Engineer..

This overall experience of working with **Vivasoft** has helped me to think about real life problems and solutions. It also has boosted my confidence as a young developer to get prepared for the next phase of my carrier as a software engineer.

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Chapter 1

Introduction

1.1 Preface

Internship is the process of on-the-job training, which particularly beneficial for students with major in technical courses.

Institute of Information and Communication Technology (IICT) provides that glorious opportunity to their students of having an internship within their bachelor program. The main goal of this institute is to provide more skillful people in our emerging software industry. It also emphasize on industry orientation in academic study. For these purpose industry people are invited to take sessions about their experiences and often conduct the technical courses. Moreover, various competitions is arranged for show-casing the student's projects with good potentials and make a industry-academia collaboration.

The six month internship program is another, possibly most effective, way of achieving industry orientation. Internship helps the students to link-up their academic experience with industry practices. I have tried my best to combine the both together and confident enough to get prepared for my future carrier.

The company I was sent for internship is **Vivasoft Limited**. It is one of the most successful and leading Software Development Company in Bangladesh. The internship program helps to apply my knowledge in real life projects. I tried my level best to gain knowledge of the industrial culture and practices so that I may apply this gained knowledge and experience in my upcoming academic courses and career.

1.2 Origin

As part of our evaluation, students must submit a report on their experience with the internship program. The report is created to show the overview of the Vivasoft environment as well as my professional development and project involvements as

an intern. It represents the opportunity for the student to learn from a different perspective in a workplace setting. It helps to provide forthcoming batches with an entire experience and feedback to who would like to take an internship at Vivasoft. Especially it would assist them to develop their selves according to Vivasoft's culture and practices.

1.3 Objective

This report has been prepared as a requirement of the internship program according to the curriculum of department of **Software Engineering, IICT** . The report is intended to reflect my achievements, project involvements and professional growth during the internship period.

1.4 Scope

This report deals with my experiences and knowledge's that I have earned through the internship program. The company profile of **Vivasoft** and its culture are also briefly discussed here. How a team works with a collaborative manner and their software engineering practices, the process of working as a team along with my role and experiences are also summarized. The report concludes by elaborating my technical and professional growth after experiencing the internship program.

1.5 Methodology

I have presented different kinds of information in this report which I gathered during internship period. All the information has been collected from different kinds of written document from Internet or another person.

1.6 Limitations

As company policy is highly sensitive about sharing internal information outside of the company, here minimal information is provided with respect to company policies. Since I have worked on specific technologies and a little number of real life projects, it is difficult for me to give an appropriate overview of other projects development process. Provided information about others project is based on my experience and sharing knowledge with my colleagues. It is important to note that report size is not enough to get a comprehensive and clear picture of the company profile

Chapter 2

Company profile

This Section will introduce the company I completed my internship program in, **Vivasoftware LTD**. Here I will discuss its history, vision-mission, its provided services, policies, and other fundamental aspects. Throughout, I have tugged in my own personal experience whenever it's relevant.

2.1 Overview

Founded in 2016, **Vivasoftware Limited** has initially started its journey with a few resources. It is among the rapidly growing tech startups in Bangladesh. In just five years, Vivasoftware has grown to almost 150 employees.

Vivasoftware works on challenging projects by implementing the latest, most cutting-edge technologies to deliver comprehensive solutions that satisfy all of its clients' requirements. It provides unique and customized solutions covering both web and mobile based arena with MNCs and SMEs located in the Netherlands, Denmark, Switzerland, Canada, UK, USA, Israel, and the Middle East countries all along started operating for the local clients. Vivasoftware also deploys World-Class Agile Product Teams on Demand. Teams that can design, build, space and scale a vision in the most efficient way.

The goal of Vivasoftware is to create digital experiences that will make everyone's life simpler and more enjoyable. It also received **BASIS** outsourcing award in Multiple times. Apart from these, Vivasoftware is one of the Champions in Inter Software Company Cricket Tournament.

The motto of this organization is **Lets Build Our Future Together**.

2.1.1 Mission

- To be a strong player in the Software Solutions space offering a great value proposition to international clients.
- To be State of the Art in our technical Process.
- To implement the best Integrity, Capability & Maturity models.

2.1.2 Vision

Vivasoft Vision is to be the industry's premier service provider company focused to deliver the maximum to our clients. We believe in the simple, not the complex. We are also giving equal importance to innovations. We believe in saying no to thousands of projects, so that we can really focus on the few that are truly important and meaningful to us.

2.2 Services

Based on the its customer roles, Vivasoft provides many internal and external services for its partners and target customers. The main services mentioned here. You May be check this in this [link](#) [2].

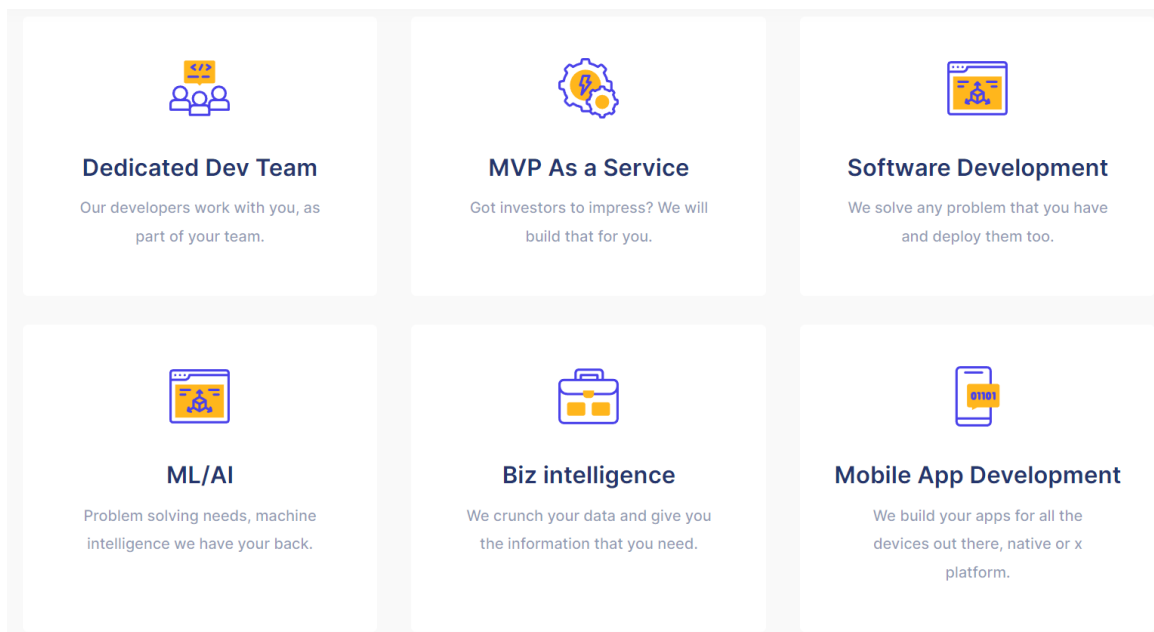


Figure 2.1: Sevices of Vivasoft

2.3 Departments in Vivasoft:

Vivasoft has a very large workforce to complete their day to day goals and provide its user of all kinds, a good experience. The daily operations of Vivasoft takes place by following strategic methodologies combined by the participation different departments as follows:

- Technology
- Operations & Support
- Marketing
- Sales
- Accounting

As I have been recruited as an intern under the technology department, in the next sub-section I'll try to give an overview of **Technology Department** of Vivasoft.

2.3.1 Technology Department:

Vivasoft's Technology department consists of the very best and brightest tech minds of the country. The amazing skill set and vision of each individuals here keeps Vivasoft moving towards its goal.

This department is divided into few individual teams which is called here as **Clan**. These are,

- Java Clan
- C# Clan
- Javascript Clan
- Python Clan
- Mobile Clan
- Devops Clan

Design Team and **SQA** team are in under Management Clan. Every clan has a clan lead.

The friendly yet professional environment of the workplace ensures that every team works collectively to fulfill the requirements and prepare the perfect software solutions for each project and product. Though each team has different type of works and methodologies, their works are interrelated with one another.

2.4 Products of Vivasoft

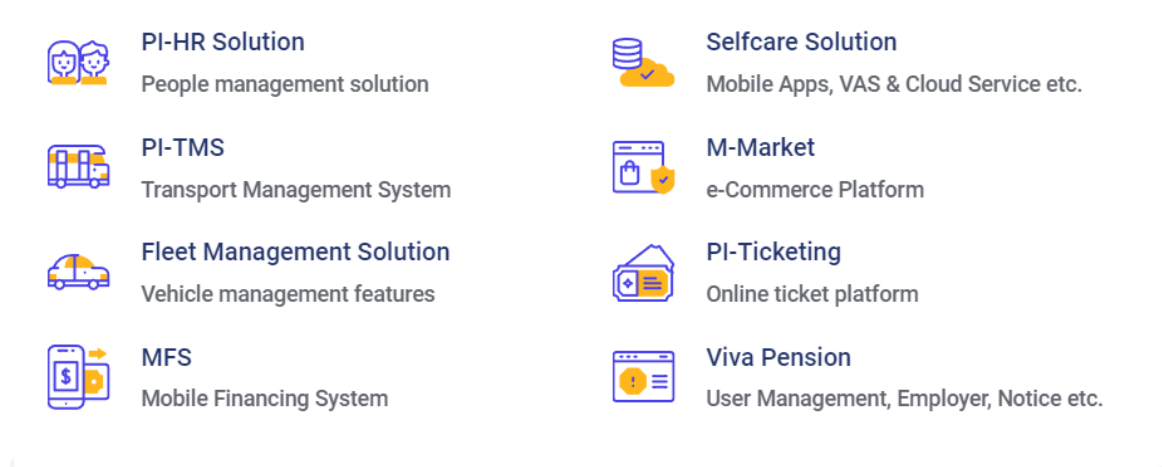


Figure 2.2

2.4.1 PI-HR

Best SaaS Based HR and Payroll Software in Bangladesh, Trusted by 250+ Companies. Transform the way of the HR department works. Manage HR and payroll activities from a single software. This software is used by hundreds of companies across the country – the best HRM software in Bangladesh.

Fetaures

- Shift Management
- Leave Management
- Payroll
- Task Management
- Expense Management
- Employee Management
- Employee Tracking
- Tax Management
- Digital Noticeboard
- Notifications
- Security etc

2.4.2 PI-TMS

Pi-TMS (Transport Management System) offers cost-effective web and mobile application based transport management software.

Upgrade from paper bookkeeping and spreadsheet-based transport management to automated software in the cloud. Achieve preventive maintenance schedule automation, simpler fuel expense tracking, flexible reporting to improve your fleet management operations and decision making.

2.4.3 Fleet Management Solution

Fleet (vehicle) management can include a range of functions, such as vehicle financing, vehicle maintenance, vehicle telematics (tracking and diagnostics), driver management, speed management, fuel management and health and safety management. We have integrated this solution in Gargaar Freighters Limited.

Fetaures

- Vehicle management.
- Driver management.
- Vendor Management.
- Mobile app with GPS Tracking.
- Invoice management.
- and many more.....

2.4.4 MFS (Mobile Financing System)

Running in Somalia, MFS is a full fledged mobile wallet. Enabling the mass to do all sorts of financial operations possible using a platform like this, as a result, improving millions of lives.

Fetaures

- Cash In.
- Cash Out.
- Payment.
- Send Money.
- Interest.
- Buy Airtime.

2.4.5 Selfcare Solution

Telesom is a private telecommunication company which was established in the year 2002 by local entrepreneurs in Hargeisa Somaliland. We have integrated the Selfcare product in Telesom company. We have integrated this solution in Telesom Selfcare.

FEATURES :

- Mobile Apps
- VAS Services
- Cloud Service
- Internet Packages Management
- Vehicle Tracking System and many more....

2.4.6 PI-Ticketing

PI Ticketing is an online ticket platform. You can purchase your ticket through this platform. There are several types of ticketing systems implemented in this platform. You can purchase your tickets through this platform.

FEATURES :

- Choose origin, destination, journey dates and search for buses.
- Select your desire trip and choose your seats.
- Pay the tickets via Debit/Credit cards.
- Safe and Secure online payments.
- Cash on delivery.
- Dependable customer service.

2.4.7 Viva Pension

Viva Pension is a product designed to cater the need of employers and employees in the national level. As its name suggests it is a product to handle the pension of a country.

FEATURES :

- User Management
- Member Management
- Investment
- Profit Distribution
- Chart of Account
- Sales & Purchase
- Reports and many more. . . .

2.5 Major Client and Partners



Figure 2.3: Major Client and Partners

2.6 Tools And Technologies

Vivasoft Is not Specialised or stuck within specific technology.I works with different Technologies and Frameworks.

C#/.NET	Asp .NET MVC, Web Api, Entity Framework, SharePoint, WPF
JAVA	Spring, Hibernate, JSP etc
Python	Django, Fast Api, Flask etc
Javascript Universe:	React js, Aurelia JS, Vue JS, Ember JS, jQuery, jQury UI, Node.js, AngularJS
Databases:	MS SQL Server, MySQL, Mongo DB, Oracle, Post Gres, Amazon Dynamodb, Time series Db etc
Mobile	Flutter, Android, Swift, Objective c etc.
WEB3	Block-chain,NFT, Distributed Finance etc
Devops & Cloud	Kubernetes,Docker, Jenkins,Azure, Aws,Helm etc
Others Languages	Go, Rust, PHP & Lua etc

2.7 Office Environment:

According to two factor theory of job satisfaction, salary is just a hygiene factor. Motivation factors are important for high productivity. Vivasoft offers the employees several facilities.

2.7.1 Domestic Environment:

Vivasoft provides an excellent working environment with all necessary facilities. People of Vivasoft works in a collaborative manner and everyone wants to give there best. The shared mission of solving different problems and challenges each day boosts the employee productivity and help to deliver a better product to the customer, as well as building their own skills.

Moreover, to persist a good grip on market and for continuous growth Vivasoft team is always focused on cutting edge technologies and have a flexibility to adapt better methodologies. This characteristics made Vivasoft a good place to learn new things.

2.7.2 Communications and Meetings

Vivasoft uses **Mattermost** and **Skype** as their initial communication tool. Each employee has an company email account created by the administration after recruitment. This communication channel helps to reach out anyone in the company at anytime. Moreover, **Google Meet** is mostly used for meetings and one-to-one conversation.

2.7.3 Daily Stand-ups

On the other hand, a daily stand-up meeting is conducted at the very beginning of the day by each team, where each team member briefs about the tasks he has been

completed and his plan for the following day. This helps all team members to be updated about the daily status and progress of the team.

2.7.4 Office Schedule

Employees have to work for 45 hours per week as per company policy. Office hour starts at 10:00am and ends at 7:00am, from Monday to Friday. There is break for lunch and other activities. However, Company provides a flexible working hour for its employees.

2.7.5 Dress Code:

There is no specific dress code in Vivasoft. Most of the employee come with semi formal or casual dress up. But no one is allowed to reach office with inappropriate dress up. Dress that contains logo of other software firms or competitors is also allowed in office space.

2.7.6 Fine System(Star Board)

Vivasoft has strict fine system in case of breaking official rules. Every Fine is counted and kept recorded in Digital board. The unit of fine is called as **Star (*)**. These fines are collected and used for small parties or events.

There is a fun fact that if anyone dose a good job star also be deducted.

2.7.7 Admin support & Technical Support

The admin support takes care of food management, training sessions/seminar management, official complaints, logistic support etc. All the employees have to do is inform to admin support and they'll take care their needs.

The tech support team is always there for solving hardware and network related issues. They'll also provide engineers with the necessary software related support and take care of the software licensing issues.

2.8 Facilities For Employees

2.8.1 Mentoring

Every new junior employee at Vivasoft is assigned a mentor. They will continue training under their mentor for about 1 to 1.5 months. In this time period they develop mini projects which prepares them to work at live projects afterwards. The guidance of the mentors is very crucial here.

2.8.2 Vivasoft Learning Session & Bootcamps

Vivasoft arranges Learning session regularly. In Banani Office one sound proof room is prepared for recording Video and Audio tutorials, podcasts etc.

Vivasoft also prepares **bootcamps** for Learners. Links are given here:

- [JS Bootcamp \[3\]](#)
- [TypeScript Bootcamp \[4\]](#)

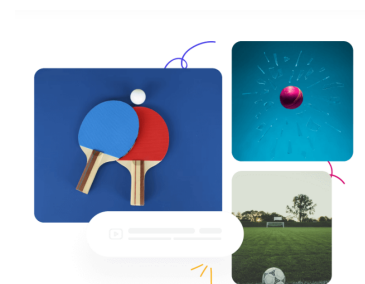
Docker, Kubernetes, Python, C# bootcamps will coming soon.

2.8.3 Lunch & Snacks

The employees are provided lunch and evening snacks from the office. Also, there is tea, coffee and biscuits available all the time.

2.8.4 Sports

Vivasoft are just crazy about sports, like Cricket, badminton, table tennis, ludo etc. Every year Vivasoft arranges inter sports tournaments of badminton, table tennis, ludo, and caroms. Vivasoft features an exceptional game room to bring out the inner sporty in employees!



2.8.5 All Facilities in a nutshell

Anyone May also Check the list from the website of Vivasoft Limited [Career](#) [1].



Figure 2.5: Employee Facilities in a Picture

2.9 Culture

2.9.1 Cooperation

All the employees are co-operative and helpful. It is not necessary only team members help each other. If any employee is stuck at any stage, he/she can ask for help of any senior or expert of other team too. The help is not limited to project work but also blood donation and others.

2.9.2 Friendly Environment

I have almost spent 6 and half months as an intern and 6 month as a Jr. Software Engineer in Vivasoft. All the members did not differentiate us from other employees. They were very friendly. They help us to adapt with the new changes and challenges. And this friendly environment helps us to refresh our minds while working for hours.

2.9.3 Inspiration

The environment of Vivasoft is really inspiring. Especially my team lead inspired me after each completion of every small task. This inspiration helps to become more focused to my work. Upper management also inspires the full team after successful client demos. Specially Tareq vai always guides us about career, study & life etc.

2.9.4 Flexibility

Vivasoft provides flexibility to employees. It provides flexible working hour. Anyone may get flexibility for his important works. The teams are really helpful with this.

2.9.5 Gifts

Most Common Gifts are:

- **Rokomari.com Coupon:** For writing blogs, Submit review about projects etc.
- **Eidee** during Eid
- **Good Bye Gifts**



Figure 2.6: Vivasoft ltd gifted new fathers and their families small tokens of appreciation.

2.10 Miscellaneous

Vivasoft provides monthly allowance for each Clan to organize a team lunch/dinner. This helps team members to know each other and create a good bond among them.

Besides, Vivasoft celebrates every occasional day in a colorful way. It celebrates the New Year by offering wonderful gifts to the employee. Pahela Falgun, International Women's day was also celebrated with great enthusiasm. Vivasoft plan to offer internships every year. We were warmly welcomed with lovely gifts by the Vivasoft family. It should be mentioned that Vivasoft provided us with **accommodation** options inside the office. This was really beneficial for us.

Chapter 3

Software Methodologies & Cultures

This chapter briefly emphasize on the software development methodologies that is generally followed in software development processes in Vivasoft.

3.1 Development Process Management

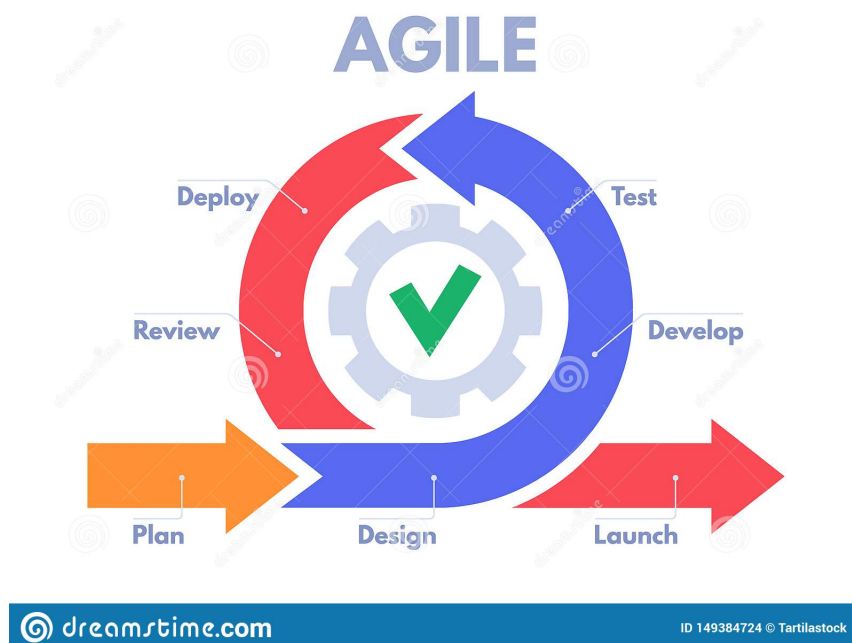


Figure 3.1: Agile Methodology

Vivasoft follows the Agile software development process. Software development methodologies based on the concept of iterative development are referred to be agile, where requirements and solutions evolve through collaboration between self organizing cross-functional teams. The ultimate value in Agile development is that it enables teams to deliver value faster, with greater quality and predictability, and greater aptitude to respond to change. As multiple teams collaborate at Vivasoft, it is the most suitable process here. **Scrum** and **Kanban** are two most widely used Agile framework in Vivasoft.

Scrum is a subset of Agile. It is a lightweight process framework for agile development. Scrum is most often used to manage complex software and product development, using iterative and incremental practices.

Kanban is a popular framework used to implement agile software development. It requires real-time communication of capacity and full transparency of work. Work items are represented visually on a kanban board, allowing team members to see the state of every piece of work at any time.

Another term we want to mention here is **Sprint**. Sprint is one time boxed iteration of a continuous development cycle. Within a Sprint, planned amount of work has to be completed by the team and made ready for review. As soon sprint starts after planning session, team work together to complete planned work effectively and make it ready for review by the end of that period.

3.2 Steps of the Development Process:

I learned and watched very closely how the a new application's features are developed and launched. The whole development cycle can be divided into individual steps:

3.2.1 Gathering Requirement Specification:

This is the initial phase of the development workflow. In this phase, requirements of the features that should be implemented are gathered. Collaborative meetings are arranged with developers, design and quality assurance teams to analyze the requirements. After a through analysis of the requirements, Software Requirement Specification(SRS) document and User Story is prepared and the requirements become locked and ready to be implemented.

3.2.2 Design:

As soon as the requirements are set up, Design team starts to make the UI/UX design of the features. The designs are then shared with other teams and they give their feedback on the designs. After a few mock ups, the design is finalised. The designs

are merged with the other documents and the product is ready to be implemented by the developers.

3.2.3 Development Cycle:

During the sprint running, from developers perspective, back-end and front-end developments are gone through concurrently.

Back-end Development:

Back-end development starts as soon as Sprint begins. Web team develops the project API or creates an API gateway by fetching data for other services, based on the project requirement.

Front-end Development:

Front developers implements the interface according to the design approved by product team. During this process developers have to keep in mind about the smoother customer experience.

Daily Stand-ups:

Daily stand-ups meeting are held during sprint cycle, where developers says about,

- What is done so far by yesterday.
- What is the plan for today.
- What are the obstacles each one is facing.

3.2.4 Testing:

At the end of the sprint, **EOD** (End of the Day) is declared by scrum master or product owner. Where development teams demonstrates the goals that have been achieved throughout the sprint. The portion of the code is frezzed and SQA team starts testing the developed featured. the issues and bugs are reported.

3.2.5 Bug Fix & Staging:

Bug fixing is started after these are found by SQA team. After bug fixing is completed, the application is then launched on stage for more scrutiny. On stage, the application is run on use cases from real life scenarios. If there are any issues found at stage, they are solved by the development teams.

3.2.6 Production Deployment:

After several sprint, when the application is at a stable state, the product owner comes to a decision about application release. The **DevOps** team deploys the application for production.

3.2.7 User Acceptance testing:

At Vivasoft, before any application is released publicly, an user acceptance testing is performed. This is called UAT release, where application is used as beta tester by Vivasoft employees from top to bottom level. This process not only discovers the technical issues, but also figures out the marketing and operational facts and loop-wholes which are to be fixed.

3.2.8 Final Release:

After UAT, all the issues reported are solved and the application goes for final release moment. Still the application is under development, as the market needs, technologies are continuously evolving and there are many edge cases emerged from time to time. Another scrum process is being followed afterwards.

3.3 Development Tools

Vivasoft use many tools for maintaining and managing their projects. Based on working experience some are mentioned below:

3.3.1 Bitbucket

Bitbucket is a Git-based source code repository hosting service owned by Atlassian. Bitbucket offers both commercial plans and free accounts with an unlimited number of private repositories.

3.3.2 Jira

Jira is a proprietary issue tracking product developed by Atlassian that allows bug tracking and agile project management. Vivasoft uses Jira board for breaking down the tasks, assign them to the developers and maintain the sprint.

Few other important features of Jira software are Scrum boards, Kanban boards, GitHub integration, Disaster recovery, Code Integration, Portfolio Management, Sprint Planning, Project Management etc.

3.3.3 AWS

Amazon Web Services, Inc. is a subsidiary of Amazon that provides on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered pay-as-you-go basis. These cloud computing web services provide distributed computing processing capacity and software tools via AWS server farms.

AWS is architected to be the most flexible and secure cloud computing environment available today. Its core infrastructure is built to satisfy the security requirements for the military, global banks, and other high-sensitivity organizations.

3.3.4 Kubernetes

Kubernetes is an open-source container orchestration system for automating software deployment, scaling, and management. Google originally designed Kubernetes, but the Cloud Native Computing Foundation now maintains the project.

3.3.5 Plesk

Plesk is a web hosting platform with a control panel that allows the administrator to set up websites, reseller accounts, e-mail accounts, DNS, and databases through a web browser). Plesk integrated support for Content Management Systems (CMS), which includes but is not limited to, WordPress, Joomla, and Drupal.

3.3.6 Taiga

Taiga is an open-source project management software that supports teams that work Agile across both Scrum and Kanban frameworks.

3.3.7 Figma

Figma is a vector graphics editor and prototyping tool which is primarily web-based, with additional offline features enabled by desktop applications for macOS and Windows. The Figma mobile app for Android and iOS allow viewing and interacting with Figma prototypes in real-time mobile devices.

Vivasoft uses figma for hosting interface designs. Design team, product team and front-end developers collaboratively uses this application.

3.3.8 Miro

Miro is the online collaborative white-boarding platform that enables distributed teams to work effectively together, from brainstorming with digital sticky notes to planning and managing agile workflows.

Chapter 4

Internship Activities

4.1 Overview

As mentioned earlier, I have been assigned in C# team. The main task of this team is to manage and develop .Net based projects, which includes different In-house products and client projects. This team is also responsible for developing different tools and libraries for development purpose.

My teams works with following tools and technologies:

1. **ASP Dot Net** for back-end development.
2. **React Js,VueJS** for front-end development.
3. **MS SQL Server** as database system, based on the project and its goal.
4. **Docker** for containerization.
5. **Jenkins** for CI/CD.
6. **Redis** for caching.
7. **Jira** for Issue tracking.
8. **Postman** for create, test and document APIs.
9. **Chrome Developer Tool**
10. **Bitbucket** for version control system.

My internship period can be divided into two phases. Each phases are described below:

4.2 Phase One: Initial Learning Period

During this Phase I studied various topics and implement them in code. Based on Supervisor suggestion, I have been advised to gain concrete skill specifically for back-end development. The total timeline of this period was One and half months.

This phase can be divided in these Section

- **Reading:** -My supervisor first recommended me some books, documentation, and tutorials to me. I used these sources to learn the concepts, which I subsequently implemented in my code.
- **Discussion:** I discussed the topic with my mentor and asked which points I was unclear about.
- **Reporting:** Everyday I have to give a quick report about my progress and the topics i have completed.

In this time I've learned basic technologies that is used in this team. They are:

4.2.1 C#:

C# is a general-purpose, multi-paradigm programming language. C# encompasses static typing, strong typing, lexically scoped, imperative, declarative, functional, generic, object-oriented (class-based), and component-oriented programming disciplines. The C# programming language was designed by Anders Hejlsberg from Microsoft in 2000.

C# is used to develop web apps, desktop apps, mobile apps, games and much more.

4.2.2 ASP .Net:

ASP.Net is a web development platform provided by Microsoft. It is used for creating web-based applications. ASP.Net applications can also be written in a variety of .Net languages. These include C#, VB.Net, and J#. The ASP stands for Active Server Pages, and .NET is Network Enabled Technologies.

Recent version .NET6 is an open-source and cross-platform framework for building modern cloud based internet connected applications, such as web apps, IoT apps and mobile backends. .NET6 run on .NET, a free, cross-platform and open-source application runtime. It was architected to provide an optimized development framework for apps that are deployed to the cloud or run on-premises. It consists of modular components with minimal overhead, so one retain flexibility while constructing your solutions.

4.2.3 Structured Query Language or SQL:

SQL is a domain-specific language used in programming and designed for managing data held in a relational database management system, or for stream processing in

a relational data stream management system. Most of the projects uses MS SQL Server for database Management System .

4.2.4 Bootstrap:

Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains HTML, CSS and JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components.

4.2.5 JavaScript Basics:

JavaScript is a lightweight, interpreted, or just-in-time compiled programming language with first-class functions. It is most well-known as the scripting language for Web pages. But many non-browser environments also use it, such as Node.js, Apache CouchDB and Adobe Acrobat. JavaScript is a prototype-based, multi-paradigm, single-threaded, dynamic language, supporting object-oriented, imperative, and declarative styles.

4.2.6 jQuery:

jQuery is a JavaScript library designed to simplify HTML DOM tree traversal and manipulation, as well as event handling, CSS animation, and Ajax. It is free, open-source software using the permissive MIT License. As of May 2019, jQuery is used by 73% of the 10 million most popular websites.

4.2.7 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.

4.2.8 Clean Code:

I recap some common design patterns. My supervisor also give me the access to some repository which help me a lot to learn about the best practices.

4.3 Phase Two: Live Project Involvement

After acquiring some basic knowledge about C#, .NET, SQL I have been advised to look through some real time projects those are under development process. By following the companies confidentiality policy, an brief overview of each projects is given below. **Note that, the real name of these projects are restricted to reveal on any publicly disclosed document.**

4.3.1 Progress Tracker:

This product will make it easier for management to monitor organizational tasks and milestones. This is a Vivasoft in-house product. Fortunately, I took part in the entire life cycle. We first gathered the requirements, analyzed them, and then came up with the final requirements. Then, we design our database in accordance with the requirements.

Design team shared the Approved design. I worked in both Api creation The Approved design was shared by the design team. I was involved in both API development and front end development. My seniors have been extremely helpful to me during this time.

Finally, I was assigned to deploy this in local server. I deployed it using docker.

Technologies used for this project are:

- Asp Dot Net Core 3.1 for API implementation.
- VUE JS For Frontend
- Bootstrap for responsive design
- MS SQL Server for Database
- Dapper For optimized Query
- Docker as application container
- Clean Architecture for seamless development
- Postman for create, test and document APIs

My Responsibilities:

- Develop API For Mailing section, task details, user dashboard and team module etc.
- Design responsive web page for landing part, task and team sections.
- Integrate with API for Frontend Pages
- Helping in DB design

- Deploy the product in local server using docker
- Testing and Bug fixing

4.3.2 Custom Management Information System(CMIS)

This is a client project of Country.It assists the custom officials in managing tasks linked to customs.**It should be noted that** this project is confidential.So information about this product is restricted to reveal on any publicly disclosed document.

Technologies used for this project are:

- Asp Dot Net Core(MVC) 3.1 for Backend implementation.
- Bootstrap & JQuery For Frontend
- MS SQL Server for Database
- Dapper For optimized Query
- Clean Architecture for seamless development
- Rotativa for PDF Report generation
- EPP Plus for Excel Report Generation
- EDI Captcha For Handling Captcha

My Responsibilities:

- The full report section was completed by me including both PDF and excel report.
- I have implemented Captcha in login page using EDI Captcha ,a package for handling captcha in .net base applications.
- Implemented logging of user activity.
- Bug Fixing and testing
- Refactor the code base for keep the project readable and controllable.

4.3.3 Pi Sales

It assists our client organization in controlling its sales cycle. They can manage a product's entire lifecycle, from top to bottom like Quotation to Shipment. **Note that**, project details is restricted to be published on any public document. Thus, the objective of this project has been discussed in short.

Technologies used for this project are:

- Asp Dot Net Core(MVC) 2.1 for Backend implementation.
- Bootstrap & JQuery For Frontend
- MS SQL Server for Database
- Entity Framework Core As ORM
- Rotativa for PDF Report generation

My Responsibilities:

- Implement the Backend and Frontend methods to avail services for different features.
- Redesign the PDF reports according to the client requirements
- Bug Fixing
- Design responsive pages with Bootstrap

4.3.4 Pi Accounting

It assists the accounting department of our client organization. **Note that**, project details is restricted to be published on any public document. Thus, the objective of this project has been discussed in short.

Technologies used for this project are:

- Asp Dot Net Core(MVC) 2.1 for Backend implementation.
- Bootstrap & JQuery For Frontend
- MS SQL Server for Database
- Entity Framework Core As ORM

My Responsibilities:

- Implement the Backend and Frontend methods to avail services for different features.
- Bug Fixing
- Design responsive pages with Bootstrap

4.4 Leanings during Project Development:

I have learned a lot of technical and abstract terms during this phase. The key points are mentioned below:

4.4.1 Reading Code Base:

Reading codes developed by others is a key skill. I had to go through all the documentations and list out the features. Then I have drafted the flow of the project and learned about the conventions of writing readable codes, following the design pattern and file structuring.

4.4.2 Postman:

Postman is a software development tool. It enables people to test calls to APIs. Postman users enter data. The data is sent to a special web server address. Typically, information is returned, which Postman presents to the user. I had to use Postman for maintaining payload convention and testing.

4.4.3 Docker:

Docker is a set of platform as a service products that use OS-level virtualization to deliver software in packages called containers. Containers provides an unique environment for all machines.

4.4.4 CI and CD

CI and CD stand for continuous integration and continuous delivery/continuous deployment. In very simple terms, CI is a modern software development practice in which incremental code changes are made frequently and reliably. Automated build-and-test steps triggered by CI ensure that code changes being merged into the repository are reliable. The code is then delivered quickly and seamlessly as a part of the CD process. In the software world, the CI/CD pipeline refers to the automation that enables incremental code changes from developers' desktops to be delivered quickly and reliably to production.

I have used **Github Actions** and **Jenkins** for creating pipeline.

4.4.5 VUE JS

Vue.js is an open-source model–view–viewmodel front end JavaScript framework for building user interfaces and single-page applications.

VueJS is primarily used to build web interfaces and one-page applications. In saying that, it can also be applied to both desktop and mobile app development thanks to the HTML extensions and JS base working in tandem with an Electron framework – making it a heavily favoured frontend tool.

4.4.6 Version Control Management and Code Review:

I had to learn basics of version control system and also maintaining feature and fix tasks for project development. After each task and issue solving, a merge request is performed and code is reviewed by project owner.

4.4.7 Focus on Documentation:

For any kind of development, documentation is the ultimate key. So, reading and understanding the documentation is a key skill to fulfill the required task with perfection.

4.4.8 Keep Updated About the Upcoming Changes:

I have always tried to keep myself updated for any changes in the project. Reading and understanding the upcoming changes helped me to figure out and being prepared to and the obstacles easily.

Chapter 5

Non-Technical Skills

Although technical learning is important, professional learning is the sole purpose of an internship. Vivasoft has been an excellent place to work and learn simultaneously.

5.1 Professionalism

Professionalism is the conduct, behavior and attitude of someone in a work or business environment. The environment in universities and software farm is quite different. In Vivasoft, people are quite smart. Everyone I worked with were really friendly and professional. These types of attitude always persuade me to be aware of what I am doing and encourage me to learn more about the things. This also helps me to change my perspective and teaches me that there is always more to learn and more to know.

5.2 Knowledge Sharing

In Vivasoft, I could ask about anything at anytime to my mentors. They are always keen to our interests and help us providing proper direction. They always encourage us to discuss about the things we want to know and show us that if we discuss and share more we can actually learn more. Also, various sessions are conducted both in office and online where team people shares something new they've learned about.

5.3 Punctuality

Punctuality is an important factor in professional life. In Vivasoft, we had to attend office premises and gave our attendance within a certain time. We also had to attend a status meeting daily in a certain timestamp. Every single work in the office premises happened in a very timely order.

5.4 Communication

Communication skill is very important to succeed in a professional environment. Internships provide the best chance of improving students' communication skills. At Vivasoft, I have worked with people of different teams. I have learned how to approach and seek for a help to anyone. Besides, recreational sessions, employee welcoming parties, team lunch, farewells helped me to know and communicate with many people.

5.5 Responsibility & Quality of work

Each task in Vivasoft helped me to realize the responsibility of this kind of work. What I have done, may have a good impact on other people ranges from developer to root level customers. So, it is very important to preserve the working ethics and try the best to maintain it's quality. I have learned how to maintain the code quality, the conventions and rules, so that my contribution to the projects has a good remark.

Chapter 6

Conclusion

Getting an opportunity to work in Vivasoft is probably one of the best experience in my academic and carrier life. It helped me to shape my thoughts and perspective in various way. I have been able to learn a lot not only the company itself, but also some people with great mindset. This pleasent experience will help me to be confident enough about myself and take a healthy mindset in the future carrier.

The working environment of Vivasoft is truly wonderful. Everyone is really friendly and helpful. The co-operation among the employees was really amazing. Also, everyone was really professional about their work here.

Finally , I want to thank everyone affiliated with this internship program and I wish this experience will help me greatly in future.

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