



SHAHJALAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

Institute of Information and Communication
Technology

SWE 420

Report of Internship

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Performed At:

Kaz Software

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Letter of Transmittal

July 16, 2022

The Director

Institute of Information and Communication Technology
Shahjalal University of Science and Technology
Sylhet, Bangladesh

Dear Sir,

I am very much delighted to submit a report as a part of my internship program. I am so thankful to the Institute of Information and Communication Technology, SUST for giving me the opportunity to connect my academic knowledge with the latest software development trends in a renowned software industry and to gather great industry experience.

I have been working as an intern at Kaz Software as a part of our course SWE 420, starting from September 1, 2021, to February 28, 2022. This report is based on my learning and experience during my internship time period. And this report covers the technical skills I developed during my internship program as well as my project participation, skill acquisition, and other improvements and issues.

I believe this report will be able to summarize the overall outcome of my internship course. I will be grateful if you accept my report, and your consideration will be highly appreciated.

Sincerely yours,



Shakirul Hasan Khan
Registration No: 2017831034
Department of Software Engineering
Institute of Information and Communication Technology
Shahjalal University of Science and Technology

Letter of Endorsement

To whom it may concern

Subject: Approval of the report

This is to certify that all the information mentioned in the report is accurate and not confidential to the company. Shakirul Hasan Khan had direct involvement in the projects mentioned in the report.

I personally went through and examined every page of the report, and I was unable to locate any information that contravened the organization's privacy policies.

I therefore declare the report to be true and give Shakirul Hasan Khan my best wishes for a prosperous future.

m. H. Hossain

Shawal Siddique Shaon
Chief Technology Officer
Kaz Software

m. H. Hossain

Md. Hannan Hossain
Principal Software Engineer
Kaz Software

Acknowledgement

I am excited to share this report about my internship experience at Kaz Software. I want to express my sincere gratitude to the Institute of Information and Communication Technology, SUST, for providing an opportunity for my internship. I also want to express my regards to Kaz Software for the support and the opportunity to work with a great team.

I'd like to offer my heartfelt appreciation to **Prof M. Jahirul Islam**, Director, Institute of Information and Communication Technology, SUST as well as to my honorable teachers.

I would like to thank **Shawal Siddique Shaon**, CTO of Kaz Software, for his guidance and support throughout the internship period. I would also like to thank my mentors, **Md. Hannan Hossain** (Principal Software Engineer) and **Biswajit Panday** (Senior Software Engineer), who trained and guided me in my internship journey.

I want to take this opportunity to thank **MD. Ibrahim Khan** (currently working as a software engineer at Cefalo Bangladesh Ltd.) for his kind assistance and support. Finally, I want to express my gratitude to my team members, my fellow interns, and every member of Kaz Software for making my internship experience a memorable one.

Executive Summary

The goal of this report is to provide a summary of the work I completed and the experiences I had while working as an intern at Kaz Software, one of Bangladesh's most experienced software company. This report will go over the specifics of my six-month software engineering internship at Kaz Software, which lasted from September 1st, 2021, to February 28th, 2022.

Prior to graduating, students who are studying software engineering at IICT, SUST, must complete a six-month internship program. As long as the company is reputable, students are free to choose where they will complete their internships, although in most cases, teachers at IIC, SUST will submit their students' resumes to potential employers, who will then select interns from among them. This is to ensure that the students will have the opportunity to work in an industrial setting. The purpose of an internship is to expose students to the realities of the workplace, help them comprehend their course material more thoroughly, and offer them the necessary work-related training for the field of software engineering.

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Chapter 1

Introduction

An internship is a professional learning experience that offers meaningful, practical work related to a student's field of study or career interest. An internship gives a student the opportunity for career exploration and development, and to learn new skills. It offers the employer the opportunity to bring new ideas and energy into the workplace, develop talent and potentially build a pipeline for future full-time employees. Internships are usually offered part-time if it is during a university semester, or full-time if it is during a vacation. And in most of the cases, the internship is paid.

Institute of Information and Communication Technology, SUST always emphasizes industry knowledge on academic study. And to give students actual industry experience, IICT provides the opportunity to their students of Department of Software Engineering to work as an intern for six-months in a renowned software company as a part of their academic curriculum in the 7th semester. This opportunity helps to add a great value to personal qualification and experiences of their students.

The company I was sent to for my internship is Kaz Software. It is one of the most experienced software company in Bangladesh. Kaz Software have been successfully operating for more than 18 years.

1.1 Objective

This report is prepared as a requirement of the course SWE 420 at the Department of Software Engineering, Institute of Information and Communication Technology, SUST.

My accomplishments, learning, professional development, achievements, and overall industrial experience from my internship are all included in this document.

If permitted, this paper will also be accessible to other students who will later serve as interns. in order for them to determine whether Kaz Software is a good fit for them.

1.2 Scope

The main scopes of this document are:

- Work environment and culture of Kaz Software
- Experiences I faced as an intern of Kaz Software
- Projects I have worked on during my internship
- The training and guidance I received
- My professional and technical growth
- Description of the technologies I used during my internship
- And my opinion on this internship

Everything is discussed in this document without violating the confidentiality of the company.

1.3 Sources of Information

All of the information reported in this document is true and authentic. Executives of Kaz Software confirm the accuracy and privacy of the company-related information.

This document contains both technical and theoretical information. Because of this, some information has been pulled from different sources; the URLs to those websites are provided at the end of this report so that the reader can manually verify any external information if they have any doubt.

1.4 Limitations

There are some drawbacks to this report. It's not possible to publicly discuss everything I did while I was an intern. This document was checked numerous times by an executive from my company before being submitted. Additionally, certain information was left out of those reviews because it belongs to Kaz Software and is private. This means that this document is not flawless.

Chapter 2

Company Profile

The traditions and culture of Kaz Software are discussed in this chapter. Each section gives an overview of Kaz Software, how it functions, the services it offers, the technology it uses, its important features, the setting, and the activities people engage in for amusement.

2.1 Company Overview

Kaz Software is one of the best and most experienced software company in Bangladesh. It started as a start-up software outsourcing company in 2004 and became a limited company in 2005 and continued to develop year after year. Typically Kaz Software builds software for the clients, but sometime they would be doing something completely different like researching business data or setting up their firewall. Kaz Software has some really talented engineers, designers, and content specialists to give it's clients a well built software.



2.2 Management

An organization will not be able to operate for more than 18 years, if it does not have experienced and passionate people in the leadership roles.

2.2.1 Wahid Choudhury (Founder and CEO)

Wahid Choudhury has more than 20 years of experience in software development. He is the founder and leader of several software companies in diverse industries such as regulatory compliance, eCommerce, legal services and computer games. Wahid has an exceptional technical background, as well as the advantage of having worked with dozens of start-ups during all stages of their technical and business development. He founded his first software company, Kaz Software, in 2004.

2.2.2 Shawal Siddique (CTO)

Shawal Siddique is a technology leader and has more than 15 years of experience in software development space. His strength in technical project is over a wide range of projects in device drivers, enterprise web applications and mobile apps using technologies such as Asp.NET, Asp.NET Core, .NET Core, Xamarin, Angular, Aurelia, Angular JS, Knockout JS, Node JS, Azure and AWS.

2.2.3 Hafiz Choudhury (Adviser)

Hafiz Choudhury is an international tax consultant and entrepreneur. He works with major multinationals on tax policy and business strategy issues; he also advises governments on tax policy and administration through his consulting firm, The M Group, Inc.

2.3 Services

Kaz Software offers software development and content management services to international customers across multiple industries. Kaz understands the challenges that its customers face within and across these industries. Kaz provides practical, pragmatic and powerful solutions to address those challenges.



The services of Kaz Software covers every step of software development, from ideation to delivery.

2.3.1 Ideation, Graphics and Interaction Design

The design team in Kaz software helps the clients through the digital design and strategy maze. They work through every stages of a project with the client and keep brainstorming and create mockups, demos and presentations. And during interaction design, Kaz Software always prefer to create the simplest solution.

2.3.2 Software Development

Teams at Kaz Software assist clients in creating specialized software, including web, desktop, enterprise, mobile, and more. Since 2004, they have been developing software for a range of sectors. During this time, they have worked with numerous technological platforms and numerous teams.

Kazians have worked on web applications, created desktop applications, and built numerous mobile applications. Some of things that they have built:

- Social app with localization
- Desktop based tax optimization tool
- Corporate data management application
- Document repository
- Database driven file system
- Content rich web application
- LDAP management tool
- iPhone/Android/Windows mobile applications
- Online holiday management tool
- Location content service
- Location based social app platform
- Flex based visio like diagramming tool
- Desktop based diagramming and layouting tool.
- Symbian application
- VoIP billing solution
- Mobile content solution
- Stock trading portal
- International trade research and management tool etc.

Kazians don't specialize in particular technologies, but they are definitely proficient in a wide array of tools and systems. Every product is unique, and they try to fit the right skills for that particular product.

2.3.3 Quality Assurance

The integrated quality assurance approach of Kaz Software incorporates aspects of agile and lean development with the stability and reliability of traditional SQA processes. They believe software quality assurance is only possible with a mixed set of procedures, which should involve all members of the team collaborating with a dedicated team of SQA professionals. Because of their involvement with all kinds of projects, their SQA teams are exposed to a variety of technology and business domains. Types of testing services Kaz Software provides:

- Product testing
- Performance and Load testing
- Content Validation Testing

2.3.4 Data, Content and Research

Kazian research teams have researched, compiled, and maintained content in diverse fields and for a variety of applications. The research team is supported by our data specialists, who leverage technology to optimize data gathering and ensure that the data is stored and managed efficiently. Services provided on this area by Kaz Software:

Research

- Research and compile information
- Categorize existing content
- Meta tag content
- Search and collect publicly available documents
- Professional domain based translation of information
- Statistical and economic analysis
- News gathering and summarizing

Create and Maintain

- Write, edit, proof read content
- Maintain content in blogs, CMS or other systems
- Translate existing content
- Create and maintain structured content like spreadsheets
- Maintain newsletters/news services

Data Services

- Transformation of existing data to and from various formats such as csv, xml, etc.
- Extracting data from unstructured or structured sources
- "Cleaning" data by removing errors, unwanted information etc.
- Storage solutions - Databases, XML, flat file

2.4 Human Resource

Currently, Kaz has more than 110 employees, and they intend to hire more. Kaz has increased its resources and production every year since its establishment. Kaz doesn't hire developers, designers or QA engineers. Kaz hires people who solve problems. And it hires only the best. Kaz runs regular training and review sessions to keep it on the top.

2.5 Facilities for Employees

The satisfaction of Kaz Software's employees is always given high attention. They offer a lot of amenities as a result to satisfy the Kazians.

2.5.1 Friendly Environment

Kaz Software resembles a large family. Working here is fun. Here, there is a friendly, open, enjoyable, and knowledge-focused work environment. Here, the chain of command is not adhered to. The company is seen as their personal responsibility by the employees.

2.5.2 Vacation and Optional WFH

The annual paid vacation policy for Kaz Software is 17 days. A Kazian may take a full or half-day vacation at any time as long as it doesn't surpass a total of 17 days each year. Employees at Kaz Software have the option of working from home or going to the office, which is a wonderful initiative. And no matter where you are—at home or at work—any form of technical support will be offered. However, due to the fun environment, working from an office is more enjoyable.

2.5.3 Bonuses and Increment

There is no festival bonus offered by Kaz Software. However, they offer bonuses after each anniversary of an employee's hire that are equivalent to their monthly income, and they are also given a raise of between 10% and 15% of their present monthly pay. Depending on the job and performance of a particular individual, this may vary.

2.5.4 Lunch and Snacks

Except for tea and coffee, Kaz Software does not provide lunch or snacks. An employee has the option of making their own tea or coffee or having one made for them by a Shoinik.

2.5.5 Recreation

Kaz has different ways of recreation for employees. Release parties, picnics, Hudai parties, and outings are part of it. Every year in December, Kaz organizes their anniversary party, which usually involves either taking all of the employees on an international trip, or a 7 to 10 day trip inside Bangladesh. And this is fully paid by the office. In spite of being an intern, I received all these facilities and consider myself lucky.



2.5.6 Seminars and Training

When a new technology is introduced or when the employees requests one, Kaz Software may occasionally set up seminars and training sessions for their employees. Shawal Siddique, CTO of Kaz Software, took a four-day seminar and exam on web application software architecture.

2.5.7 Indoor and Outdoor Games

Almost every Kazian is a cricket lover. They play short-pitch cricket every working day after lunch, in the office premises. There is a table tennis board in the ground floor and Kazians can play anytime they want.



Cricket in Office Premises



Table Tennis

2.6 Teams

Kaz Software has more than 10 teams. Each team work differently probably using different tools and technologies. Their clients gets a team of their own. The team adapts to the working process of the client. Each team has their own rules and regulations.

I was a member of Team Artisan. More about this team later on personal experience section.

2.7 Clients

Kaz Software is a outsourcing company. Kaz has built or enhanced more than 150 software projects for more than 100 companies around the world, from startups to Fortune500, in more than 18 years. Some of the renowned clients are:

- The World Bank
- Unicef
- রাবি
- Japan Tobacco International
- Thomson Reuters
- Aarong
- QFC
- Global Blue
- Swisscontact
- World Vision etc.

2.8 Tools and Technologies

Kaz Software is not specialized or stuck within specific tools and technologies. They try to keep up with rapidly changing technology trend. And they always try to use technology that will be best for any particular project. Following these are some of the used tools and technologies:

.NET World	ADO.NET EF, ASP.NET MVC, WCF, Silverlight, LINQ, LINQ To SQL, PRISM, Microsoft Enterprise Library, Sorry, Nhibernate, Sprint.Net, MEF/Unity, Sharepoint, Spring.net, WPF
Java World	JSP, JSF, JPA, Hibernate, CDI, JAX-RS, RESTEasy, Spring, Seam, Maven, GWT, Wicket
Javascript World	jQuery, jQuery UI, Node.js, ReactJS, AngularJS, Ext JS, Knockout.js, Redux, RequireJS, jQuery Mobile
World of Web	HTML5, CSS3, CSS2
Python World	Django, South, Celery, Tornado
Servers Etc.	JBoss AS, Tomcat, Nginx, IIS, Endeca, Jitsi
Third Party Frameworks	Selenium Webdriver, Various PDF frameworks, Various control libraries, OCR SDKs, CrystalReports, WebRTC
Cloud	Amazon AWS, S3, Rackspace, Heroku, Microsoft Azure
Mobile Space	Objective-C, Cocoa, Cocos2d, Titanium, Phonegap, jQuery Mobile, HTML5, Android, Windows Mobile
Database and NoSQL	MS SQL Server, MySQL, MongoDB, Couchbase, Neo4j

2.9 Helping The Community

Kaz is involved in many efforts to help the community around us. One of its big long term project is a partnership with an organization called "Prothom Shurjo" that helps street children in the area near us by arranging education, food and shelter for them. They also run various training programs for them to teach them skills that they can use.





2.10 Location and Office Structure

Kaz Software office is located at **35/5, Shantinagar, Dhaka**. The office consists of ground, first and third floor. There are a table tennis room, dining room, prayer room, conference room in the ground floor. Rooms in the first and third floors are given to different teams. There is a kitchen in the first floor.

2.11 Achievements

Kaz Software celebrated their 18th birthday this year. They achieved a lot over these years including Basis Outsourcing Award 2020, GoodFirms Top Web Development Company and GoodFirms Top Software Development Company etc.

Chapter 3

Personal Experience

From interview to the end of my internship and beyond, I passed a great time at Kaz Software. In this chapter, I'll go through those experiences.

3.1 Interview

I had a phone interview with Shawal Siddique (CTO, Kaz Software). It was not a formal interview. He called and asked me questions about in what technology I worked on, questions about ReactJS, how I like my work environment etc. He confirmed my internship in that call.

3.2 Team Artisan

As an intern, I joined the Team Artisan in Kaz Software. It is a team with some talented and friendly members. I worked for six months as an intern in that team, and joined as an Associate Software Engineer later.

3.2.1 Members

Team Artisan consists of some great members, who are talented, friendly and helpful at the same time. Currently there are nine members, including me, in Team Artisan.

- Md. Hannan Hossain (Team Lead, Principal Software Engineer)
- Mohammed Jubayer (Principal Software Engineer)
- Biswajit Panday (Senior Software Engineer)
- Tulshi Das (Software Engineer)
- Ashiqur Rahman Rijvy (Associate Software Engineer)
- Saikat Sen (Associate Software Engineer)
- Souhardya Saha (Associate Software Engineer)
- Siana Rizwan (Intern)

Four more ex-members of the team I must mention are:

- MD. Ibrahim Khan (currently working as a software engineer at Cefalo Bangladesh Ltd.)
- Md Masum (changed team)
- Abdullah-Al Foysal (changed team)
- Abdullah Al Jahid (internship period is over)



3.2.2 Office Hours

Kaz has different office hours for different teams. Team can choose office hours according to their ease. But each team should work for 8 hours, 5 days a week with one hour of lunch break at 2:00 PM. Team Artisan starts working at 11:00 AM and ends at 7:00 PM.

3.2.3 Scrum

Each working day at 11:00 AM, all of the members of Team Artisan have a scrum meeting. Every member must join the meeting unless they are on leave. In this scrum meeting members discuss:

- What did they do the last day
- What will they work on today
- Issues and blockers they are facing

3.2.4 CTO Meeting

On Tuesday 3:00 PM of every first full week of a month the members of Team Artisan have a meeting with the CTO. In this meeting they discuss about the

progress of the projects the team currently working on, the wellbeing of the member and the members' real life events. Every member of the team must join this meeting.

3.2.5 Fine Driven Development

FDD is a fun terminology, but it is strictly followed in Team Artisan. There is a fine if a member misses the scrum meeting or CTO meeting. There is fine for committing code with silly mistake or deploy a buggy code to the production. And there is a rule book for the team, and if a member break any rule, s/he might get a fine. There is also a fee for a Kazian when s/he joins or leave the team. The fine amount is small and the fund created from these fines are used for recreation of the team, like a party or a tour.

3.3 Pair Programming and Collaboration

Pair programming is an agile software development technique in which two programmers work together at one workstation. One, the driver, types in code while the other, the observer (or navigator), reviews each line of code as it is typed in. The two programmers switch roles frequently.

From the second day of my internship I started pair programming with MD. Ibrahim Khan bhai and Md Masum bhai. As I was new to the Orbitax ecosystem, I always had a lot of questions. Therefore, I could clear my confusion while talking with the seniors and gain knowledge about the platform. And later when Abdullah Al Jahid and Siana Rizwan joined Team Artisan, we started pair programming as we worked on the same project.

While working as a pair, we used to work in a way, when my partner was typing I was assisting him, giving him ideas and checking for mistakes; when I was typing my partner was giving me instructions. It is easier to find bugs and corner cases during development and write efficient code when two or more people write code together.

The best thing about Kaz Software is, people here never hesitates to ask for help. Whenever I got stuck, could not understand a legacy code or had trouble understanding what to do, I asked for help from my seniors. No matter whatever the problem was, they always helped me and this made my internship period a lot smoother.

I tried to help others too. As for using ReactJS for a long time for web development, I was able to help my fellow interns and even my seniors who had confusion about ReactJS. Although every team of Kaz Software works separately, anyone can ask for help from anyone from any team.

3.4 Recreation

Kazians always works in a fun way. The recreations in Kaz Software are already discussed in the Company Profile section. I was lucky that I could

join almost every tour, outing, and party even when I was an intern.

3.5 Remuneration

Although this internship was a part of our undergraduate curriculum, I was given a salary of a good amount. I am not allowed to share the exact number of my salary but it was enough to cover my basic needs as a student. Later they offered me a full time job, with more than 250% of the monthly salary I used to receive during internship.

3.6 Full Time Job

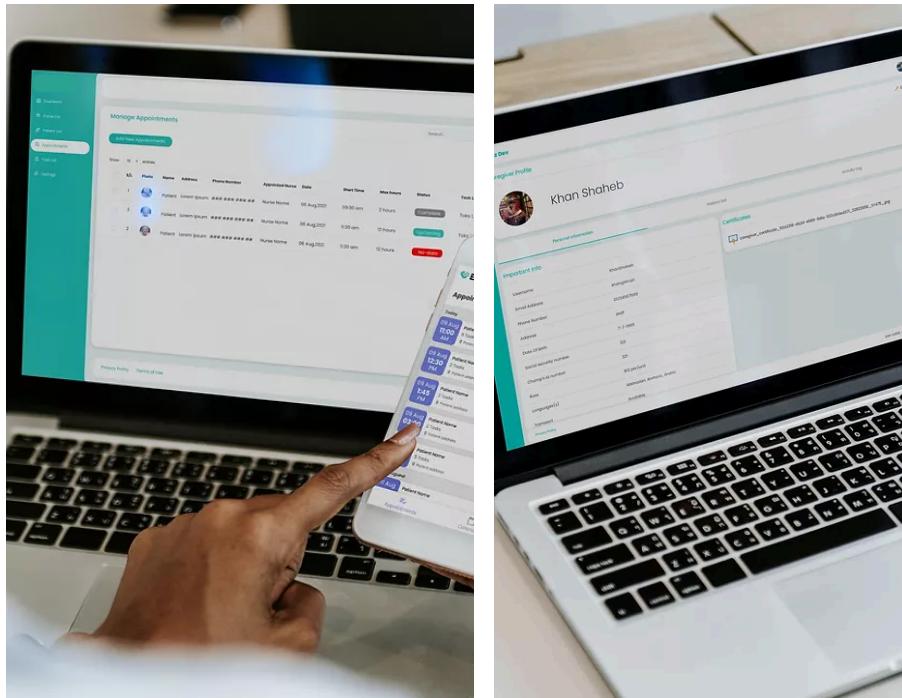
After completing my internship I had a long free time before my university class started. So, Wahid Choudhury Bhai and Shawal Siddique bhai proposed me an offer to join as an Associate Software Engineer at Kaz Software. I accepted the offer without any hesitation as he offered me flexibility to take leave when my university classes start. I was happy to join the team I completed my internship in.

Chapter 4

Project Involvement

4.1 Electronic Visit Verification

It was the first and only project I worked on as an intern in Kaz Software. It has both Mobile and Web application. I worked on the web application, on front-end. The design team in Kaz Software made the mock design of the application and I with my teammates brought the design to live.



4.1.1 Project Overview

It is a Web and Mobile based application to verify home healthcare visits to ensure patients are not neglected and to cut down on fraudulently documented home visits. The application is developed around the vendor who can set-up multiple company with each having separate patient and caregiver management.

Due to the 21st Century Cures Act, all care visits provided in the home must be verified electronically — no more pen and paper. Each state has unique

requirements for electronic visit verification which can cause stress and confusion for providers. This application implement a solution to help the agencies operate more efficiently and advocate for beneficiaries, all while keeping their staff safe.

This application offers the most efficient scheduling and EVV capabilities on the market, saving coordinators time, eliminating errors, and making it easy for caregivers to clock in and out. Using this web-based solution, one can enable more effective workflows across an entire agency environment and automate time-consuming manual tasks.

4.1.2 Functionalities

This application has built-in scheduling and electronic visit verification. Other system features address HIPAA compliance, documentation, reporting, and billing. Other features of this application are:

- Capture Documentation at the Point of Service
- Single-Swipe Check-In or Out on Android and iOS devices
- Voice or Signature Verification Functionality
- GPS and Cellular Visit Tracking
- Electronic Attendance Verification
- Secure In-Office Messaging
- Automated Paper Timesheet Processing
- Live Scheduling View
- Employee Time and Attendance Management

4.1.3 Tools and Technologies

Tools and technologies used to develop this application are:

- **Back-end:** .Net Core 3.1, AWS Cognito, Push Notification, Firebase
- **Front-end:** Typescript, ReactJS, Redux, SWR, Axios, RsuiteJS, Bootstrap
- **Database:** Amazon DynamoDB
- **Mobile:** Flutter, Dart, Push Notification

4.1.4 My Contribution

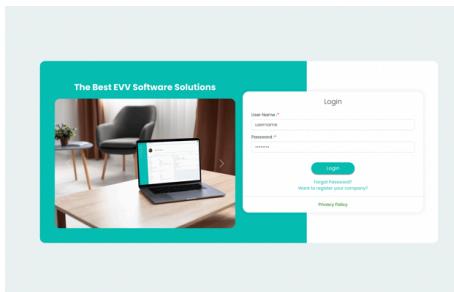
From the first day of my internship I started working in this application. At first I started working with Ibrahim Bhai and Masum Bhai on the front end using ReactJS and Typescript. They gave me an overview of the application in the first week and gave me mock design of the application. And I started working right away.

There are two user classes in the front-end web application. One is for Company admin, another is for Super Admin. There is one more user class for the mobile application for Caregivers. In total there were almost 50 pages in the web application and I either designed, implemented, refactored, updated or reviewed each one of them.

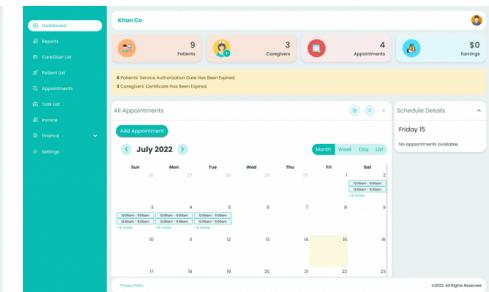
Later both Ibrahim Bhai and Masum Bhai stopped working on the front-end, I started working with Abdullah Al Jahid and Siana Rizwan, two interns from Dhaka University and Islamic University of Technology respectively. And during the whole time Pandey Bhai along with Tulshi Bhai, Ibrahim Bhai, Souhardya, developed the backend of the application and Abdullah-Al Foysal developed the mobile application.

4.1.5 Project Preview

Here are some screenshots of the pages I designed:



Login Page



Dashboard

A screenshot of the 'Admin Panel' showing a 'Manage Company' section. It lists companies with columns for ID, Company Name, M/F Doctor Number, Users, Insurance Type, Status, Auto Check, GPS Checked, and Actions. A sidebar on the left includes 'Dashboard', 'Reports', 'Caregiver List', 'Task List', 'Appointments', 'Test List', 'Invoice', 'House', and 'Settings'.

Admin Panel

A screenshot of the 'Reports' page. It shows a 'Caregiver Count By Task' chart with 12 categories and a 'Caregivers Report' table with columns for Name, Missed Check In & Out, Missed Check In & Out, and Ongoing Shift. Both sections show 'No Data Available'.

Reports Page

Patient List

Settings page

Add Caregiver Page

Add Patient Page

4.2 Other Involvements

Beside working on this application, sometimes I solved some problems in other applications and did some research too.

4.2.1 Upgrade RegAnalytics

RegAnalytics is a software and services for regulatory compliance. It is a combination of more than 6 web applications. We had to upgrade ReactJS version from 16 and 17 to 18 two parts of the application, TPA and WTA. I worked with Abdullah Al Jahid during this task. We had to upgrade the version of ReactJS to 18 then test full application on the new version. And fix if something does not work properly.

4.2.2 Design Nest Publisher

Nest Publisher is a part of the RegAnalytics application. It was previously built on a different platform and had a backdated design, and we had to design this application using ReactJS. The mock design of the application was provided by Design Team in Kaz Software and we had to implement those design. I worked with Abdullah Al Jahid during this task too.

4.2.3 Research and Development

During my internship did some Research and Development too. I had to research about how does micro-frontends work and create a proof-of-concept using a javascript package called Single-SPA. I also had to research about Kubernetes and how to deploy docker containers on Kubernetes.

Chapter 5

Professional Growth

5.1 Technical Aspects

During my internship period I did work in two different projects. Both of the projects used industry standard tools and technologies, that I had a much less knowledge before. In this section I will discuss the tools and technologies I have improved my knowledge on.

5.1.1 Typescript

TypeScript is a programming language developed and maintained by Microsoft. It is a strict syntactical superset of JavaScript and adds optional static typing to the language. It is designed for the development of large applications and compiles to JavaScript.

I used JavaScript in the projects I developed before my internship. But it is harder to debug Javascript code during development. So I had learn and use TypeScript to write my code during my internship.

5.1.2 ReactJS

React is a free and open-source front-end JavaScript library for building user interfaces based on UI components. I used ReactJS before my internship too, but I could do it in a professional way following the best practices. During my internship I used to read my seniors' code and understand how they worked. That gave me good insight into how ReactJS works and how to write better code using ReactJS.

5.1.3 Redux

Redux is an open-source JavaScript library for managing and centralizing application state. It is most commonly used with libraries such as React or Angular for building user interfaces. Although it is a little complex to use, it is a great tool for managing state in a complex application. My seniors guided me through how does it work, I used it with ease.

5.1.4 Git

Git is software for tracking changes in any set of files, usually used for co-ordinating work among programmers collaboratively developing source code during software development. I used Git before my internship for my personal projects. But during my internship I learned how to use Git in a professional way. I learned about several Git commands that I didn't know of before and sometimes use tools like GMaster, GitLense in VS Code etc to make my work easier.

5.1.5 Visual Studio Code

Visual Studio Code, also commonly referred to as VS Code, is a open-source IDE. This has features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. I wrote most of my code in Visual Studio Code during my internship period. This tool have made writing code easier and more efficient using the existing features and extension.

5.1.6 Others

I have learned and used so many new technologies during my internship. Sometimes I had to do research about new technologies like Docker, Kubernetes, Micro-Frontends, Single-SPA, Cypress etc. I did research about how to increase performance of a existing front-end. I also learned how to use Docker to run my projects on a Docker container. I learned about unit and integration testing using Jest and Cypress.

5.2 Non Technical Aspects

The non-technical skills can be acquired by interacting with the others. Some of the non-technical or soft skills I have improved are discussed in this section.

5.2.1 Code Quality

In Kaz, they always encouraged us to write beautiful and simple code. Kaz follows a great standard of pure software engineering and their product quality is very high. My seniors always reviewed my code, and suggested if it can be better. And I tried to maintain the standard of work from my side.

5.2.2 Professionalism

Professionalism is the conduct, behavior, and attitude of someone in a work or business environment. It is the way that a person shows respect for the rules and expectations of the organization he or she works for. The environment for universities is very different from the environment for companies. In Kaz, people are quite smart and they always knew what they were doing and talking about. These type of attitudes always persuade me to be aware of what I am doing and encouraged me to learn more about things.

5.2.3 Team Work

In university, we used to build projects in small groups of either two or three people. But during my internship, we had to work in a much larger team. I learned how to work in a big team, communicate with them, help others and get help from them.

5.2.4 Punctuality

Punctuality is a important issue in professional life. In Kaz Software, we had to attend meetings within a certain time to prevent late joining fees. I was always on time to attend the meetings.

5.2.5 Communication

Communication skill is one of the basic skills that is required to perform effectively in a professional environment. In Kaz Software, I learned how to approach people with a clear and concise manner, more importantly how to ask anything or get help.

5.2.6 Planning

Planning is the key to do a job more efficiently. In certain times I had to give a time estimation of a project. That helped me to plan my work more efficiently.

5.2.7 Knowledge Sharing

In Kaz Software, I could ask anything at any point to anyone. Everyone always helped us providing proper content and direction and encouraged me to learn more. And we used to had chat with others inside the team sharing knowledge about something we learned.

Chapter 6

Conclusion

I view this six-month internship as the most important part of my undergraduate education. Thanks to the internship program, I learned a lot about the software industry, its culture, workplace, and everything related to software development. My knowledge was expanded, connections between my academic and professional experiences were made, and my room for progress was identified. I became familiar with the professional company culture and the technology they use through the internship program. My internship taught me the importance of professionalism and patience.

It also taught me about the software life cycle that is employed in the software industry and motivated me to work hard, be accountable, and have confidence in myself. My ability to work in a team and communicate effectively, as well as my respect for the opinions and suggestions of my teammates, have all improved as a result of the internship program. I was able to identify and resolve a number of problems that would not have been possible without team discussions and brainstorming sessions.

Despite the fact that I did work as an intern at Kaz Software, most of the time I was treated more like a full-time employee. I received all the benefits of a full-time employee. Interns typically receive mock assignments and are prohibited from working on real life projects, at least for a time. As opposed to myself, who began working on a real-world project on the first day of my internship. And on occasion, I was required to research a new technology or problem. These, in my opinion, helped me learn more and stoked my desire to study more.

From my perspective, I would suggest Kaz Software for both internships and full-time jobs if you want to learn and develop in a fun and happy way. I would like to express my gratitude to the Institute of Information and Communication Technology for giving me this wonderful opportunity and to my teammates for making me feel at home even when I was at work. Undoubtedly, it is a significant accomplishment that will aid in my progression toward a professional life.

Appendix A

References

- Kaz Software: <https://kaz.com.bd/>
- Our Services: <https://kaz.com.bd/services/>
- Our Culture: <https://kaz.com.bd/company-culture>
- Typescript: <https://www.typescriptlang.org/>
- ReactJS: <https://reactjs.org/>
- Redux: <https://redux.js.org/>
- Git: <https://git-scm.com/>
- Visual Studio Code: <https://code.visualstudio.com/>
- Single SPA: <https://single-spa.js.org/>
- Cypress: <https://www.cypress.io/>
- Docker: <https://www.docker.com/>
- Kubernetes: <https://kubernetes.io/>
- Prothom Shurjo: <https://www.facebook.com/ProthomSurjoBD>
- Micro-Frontends POC: <https://github.com/KhanShaheb34/react-microfrontends/>

Appendix B

Glossary

Word	Meaning
SUST	Shahjalal University of Science and Technology
IICT	Institute of Information and Communication Technology
Kazian	An employee of Kaz Software
Shoinik	A peon of Kaz Software
Hudai party	A Party without any reason
EVV	Electronic Visit Verification