REQUIREMENT ANALYSIS FOR WEBSITE DEVELOPMENT AT COMMUNICATION NETWORK

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Internship report titled "Report of Internship in Requirement Analysis", submitted by Tahmid Ali Fahim to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on June 3, 2021.

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DECLARATION

I hereby declare that, this internship report has been done by me under the supervision of **Narayan Ranjan Chakraborty, Associate Professor, Department of CSE** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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Finally, with due respect I acknowledge the constant support and patients of my parents.

ABSTRACT

The act of requirement analysis is one of the important aspects of software engineering, which deals with the end products ensuring end user satisfaction. I was keen to learn about requirement analysis. This internship was the golden opportunity to learn about requirement analysis. The job of requirement analyzer starts with taking the project requirements from the client. Making analysis of the requirements and after that making pictorial representation that is flow charts for various actors in the project. The goal is customer satisfaction. So each step requires the involvement of the client. Which I found challenging sometimes. Because initially the client came up with his raw ideas and asked for few features. When we show the flow charts they come with changes instantly that they have not asked for earlier. I was the middle man to conduct communication between client and developer. So delivering the requirements correctly through the user story was essential. I really got the opportunity to communicate with people which I enjoyed. Many a time I faced problems, people working there helped me. And suggested me while conducting any task. Internship is a great opportunity every student should take. As it helps to brush your skills. That enables one to perform well in their future job. One can also see if a job is suitable for him or not through internship. The challenges and hardship during internship are the best outcome and gaining. Because it is directly related to critical problem solving and real life is all about real problems. Where one can implement his bookish knowledge but can't mimic a book's solution to any problem. Internship prepares one for a future job. So I took the internship. And furnished my interest for my dream job.

I have discussed my tasks and activities during the internship in this report. Included the snapshot of client work. And finally concluded with my internship findings.

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Introduction

1.1 Introduction

Internship opportunities create a scope to graduating students to learn and gain knowledge relating to the student's major and understands the competitive job environment in an organization. To facilitate the learning, Daffodil International University offers a 06-credit course taken as internship with curriculum and guidelines for a student to be exposed to real life situations & applications for delegating a graduate's skills and theoretical knowledge into organizational-level learnings. The job market being highly competitive, an internship allows graduates to understand the implementations of theoretical knowledge and uplifts the confidence for a swift step up from education to professional sector. Hence, the internship is more of an opportunity than a course that shapes a graduate to a dynamic leader and an efficient service holder in the job market. I will be discussing my experience as a requirement analyst intern at Communication Network in this chapter. The duration of my internship was 12 weeks long, starting at 01.01.2021 to 01.04.2021. In my internship I was exposed to a client's briefing to launch two different dynamic websites. I was serving as the rapporteur of the senior requirement analyst and my works were ranging from taking briefs, making them execute and sharing them up. The development-centric environment of Communication Network has tactfully empowered me to pull all from books to desk and implement all of them up.

1.1 Motivation

I am pursuing my bachelor's degree in Computer Science and Engineering of Daffodil International University, Dhaka. During the period of education, courses of system or requirement analysis excited me more than courses in development. And later I came to know the great necessity of a precise and organized project manager in the technological sector and decided to choose the career path [1].

Hence, I decided to get myself into an internship where I can learn about executional knowledge along with my theoretical knowledge. Through the internship, I found the

Internship to be the most uplifting and empowering experience in terms of my aspired profession.

1.2 Internship Objectives

Students are supposed to finish the internship beforehand of graduation. The internship opportunity is designed for young graduates to get hands-on knowledge of how theoretical knowledge functions in professional life. Moreover, internship opportunities allow graduates to explore through an industrial environment and knowledge. Through the learning process, a student should gain work process efficiency, problem-solving mindset and boost confidence to apply theories in real life. Not just that, internships are applicable to students who have a strong desire to learn and are confident enough to survive through a rigorous environment of the learning process. But the outcome of the internship turns out to be fine if the intern intends to improve himself by exercising the earned knowledges in real life.

1.3 Company Introduction

Communication Network is an IT and Digital Services Solution provider. Being established in 2011, Communication Network has successfully secured a significant place in a multi-sectoral service providing firm. Having three wings Communication Network can serve clients in versatile ways which have earned the company a one-stop solution for Clients of all sectors. The company has been providing web solutions, digital industrial- grade systems, marketing data analysis as well Digital Marketing. The company has three wings IT solutions, Data & Marketing solutions, and Digital Marketing wing. Spanning service and operations of all sectors, Communication Network serves clients & companies across the nation.

1.4 Report Layout

This report is a partial overview of Communication Network and my Internship experience at the IT Solutions Dept. of Communication Network. The first chapter expresses the introduction of the Company, Motivation, and Objective of the internship.

And, the following chapter exhibits the product-services of the company, organizational structure, and SWOT & SMART analysis. Also, the rest of the report shows about the 4 month-wise learning & training followed by requirement analysis, development stages flow charts & diagrams and required time analysis.

CHAPTER 2

Organization

2.1 Introduction

Communication Network is a multi-sectoral service providing firm, with 3 functional sectors; Tech solutions, Data & Marketing solutions, and Digital Marketing wing. The company has been in business for 10 years. Being started as a national company, it has now expanded its operations overseas. Having a clientele of 27, Communication Network, provides multi-dimensional solution to clients ranging from data to digital marketing & tech solutions[10]. Creating a firm reputation in the market, Communication network fosters young professionals come and build career confidently in the professional arena. Hence, Communication Network accepts internship in various sectors and with impactful responsibilities for the intern to grow and learn more into highly competitive professional environment.

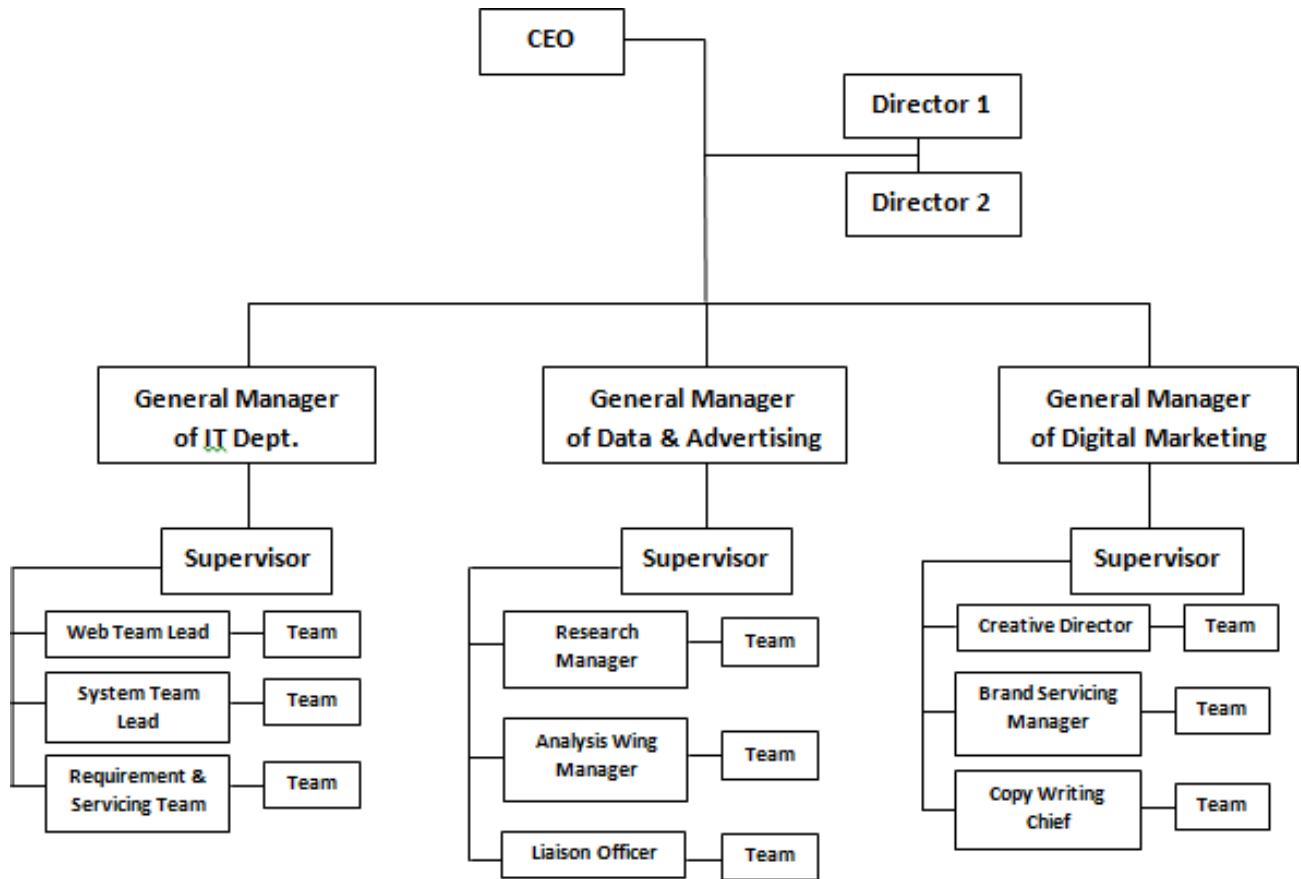## 2.2 Organization Structure:

Figure 2.2: Organizational Structure

2.3 SWOT Analysis

Analysis of SWOT is an incredibly simple, yet powerful tool to help me develop my business strategy, whether I am making a startup or guiding a present company. Companies should use it as a guide and not extremely as a pointing. Identifying core strengths, weaknesses, opportunities, and threats lead to fact-based analysis, fresh perspectives and new ideas. The primary objective of a SWOT analysis is to help organizations develop a full awareness of all the factors involved in making a business decision.

2.3.1 Analysis of Strengths

- A unique technology, loyal customer base, strong brand, strong balance sheet and so on Working from home with no difficulty [5].
- The work environment is friendly. So learning was not so difficult.
- They maintain good relationships with customers and partners. Thus the organization can finish projects with coordination of employee and customer.

2.3.2 Analysis of Weaknesses

- Mismanagement occurs due to not educating employees properly about the project execution and partial project overview.
- Execution time is a big factor, many a time organization without calculation takes huge responsibility and the result is extra burden on the employee [6].
- Lack of resources is an issue that employee's face sometimes. They often need to find themselves and this hampers the project execution period. That implies they end up doing late for the project termination.

2.3.3 Analysis of Opportunities

- Use of social media sensibly is the new way of success.
- As business is being in social media. Availability and response can be made more frequent in order to win SEO or make organizations hyped in the market [7].

- There are upcoming online events that my company may be able to take advantage of to grow the business and expand their partnership.

2.3.4 Analysis of Threats

- Use of social media sensibly is the new way of success.
- As business is being in social media. Availability and response can be made more frequent in order to win SEO or make organizations hyped in the market.
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CHAPTER 3

Task, Project and Activities

3.1 Daily task and activities

3.1.1 Month 1

- Learned and gathered information about a resource management tool: Airtable.
- Came to know about software development methodologies (Agile, Non-agile).
- Gained knowledge about data flow diagrams (DFD) [2].
- Learned about Use Case Diagrams.
- Learned about User stories.
- Learned about activity diagrams and other flow -charts required during software development.

3.1.2 Month 2

The second month of internship I was assigned for meeting with clients. The real task began and implementation of what I learned the previous month got in action.

- Conducted a meeting with the client to gather information about the product.
- Documented the requirements of the product.
- Reorganized information for drawing data flow diagrams.
- Made use case diagrams keeping user stories in mind.
- Before going to first sprint with developers made activity diagrams and other flow charts
- Went for the first sprint with the developers providing them required information that helps them to select product specification. There they figured out the features of the product modifying the use case and activity diagram, to start the development process [3].

3.1.3 Month 3

This month was full of meetings with clients and sprints with developers. Began and implementation of what I learned the previous month got in action.

- As the product was in the development phase the developers developed the website keeping the theme and guideline of the client [4].
- The design of the product was made by the developers and went for client approval after they designed it.
- After the key features of the website were added scheduled meetings with clients. To figure out if these features meet their demand and are useful for the end user.
- Informed changes of the product to the developers in the next sprint. And they showed adding editing features in the next few sprints.
- After testing the functionalities and assuring security of the product the developer provided an incremented version which was shown to the client on the next meeting.
- On getting confirmation and verdicts from the client went for the last sprint before the deployment.

3.1.4 Month 4

This month the task was to go for deployment and inform client about our maintenance policy for the service

- As the product got deployed went for client meetings to show the end result of the development.
- The client was found satisfied so we handed them our maintenance policy of the site.

3.2 Events and Activities

- I do meetings with clients to collect information.
- I go for sprints with developers virtually to know the work progress.
- The developers after incremental development reach me to know customer satisfaction.

3.3 Project Tasks and Activities

3.3.1 Use Case Diagram

Use case diagram is the most known diagram type. A use case diagram is the simplest representation of a user's interaction with the system that shows the relationship between the user and the different use in which the user is involved. A use case diagram can identify the different types of users of a system. Use case diagrams give a graphic overview of the actors involved in a system, different functions needed by those actors and how these different functions are interacted [8].

3.3.2 Activity Diagram

Activity diagram is basically a flowchart to represent the flow form one activity to another activity. The activity can be described as an operation of the system. It can be used to describe business workflow or the operational workflow of any component in a system [9].
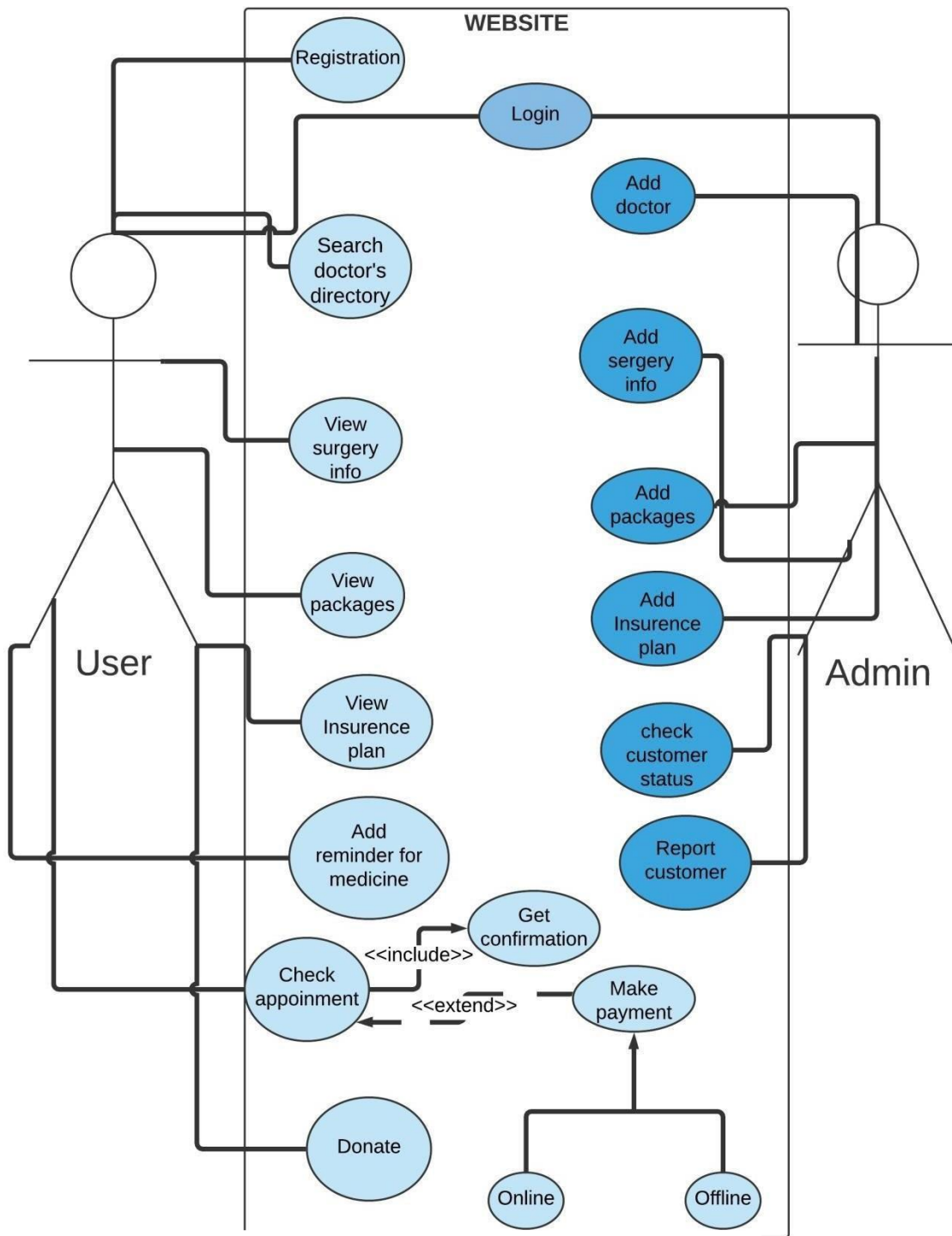
Figure 3.3.2: Activity Diagram

3.3.3 Activity Diagram for Admin

Activity diagram for admin shows how tasks of admin are done on login as admin.

Activity diagram for Admin: Admin on logging in as admin will get features:

- Add doctor: Doctor will be added by admin along with their details.
- Add package: Package of surgeries can be added by admin.
- Add Surgery: Information pricing about new surgeries are added by the admin.
- See appointments made by user: Admin see the request made for appointment by the user and provide them with a form. Which then makes them eligible for appointment.
- Report user: They contact user online or offline to give them updates
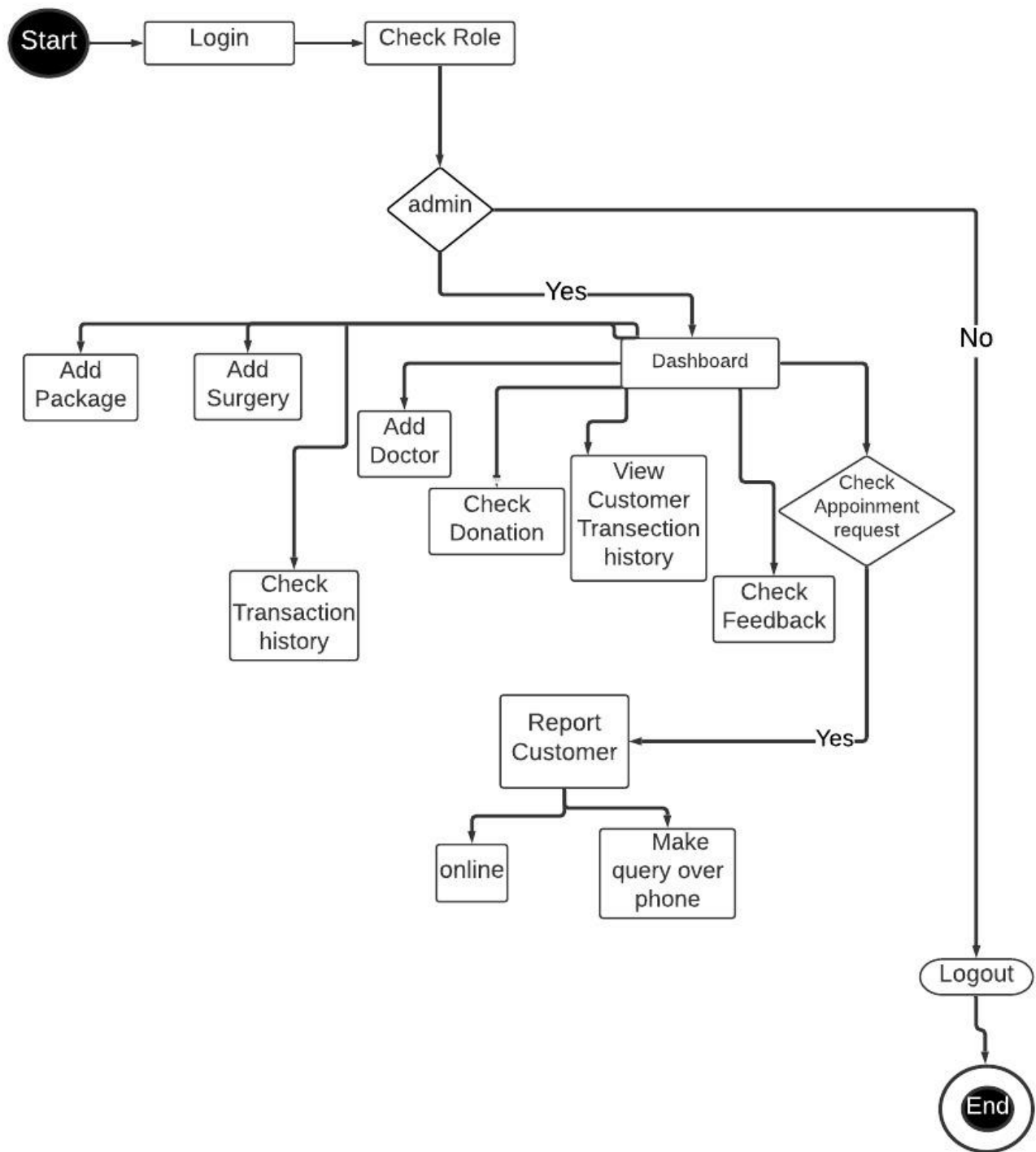- Check the transaction made: Overall transaction made by user is viewed by admin,

Figure 3.3.3: Activity Diagram for Admin

3.3.4 Activity Diagram for User:

Activity diagram for user shows how tasks of user are done on login as user.

Activity diagram for user: The user with his credentials (email & password) will login to the website, on login he has got options:

- Search Doctor's directory: Users can search for their nearby doctor. As they input locations.
- View package, surgery types: Surgery mtf, ftm other types are displayed. They can view details about the surgeries
- Get Appointment: If a doctor is available. They will get notified and they can make online and offline payments.
- Transaction history: They can look for previous transactions that they made earlier.
- Appointment Made: They can check status for the appointment they made already
- Add medicine reminder; they can add reminders about medicine(s).
- Give Feedback: Can give good or bad reviews.
- Donate: If anyone wants to donate for this website they surely can donate online and offline.
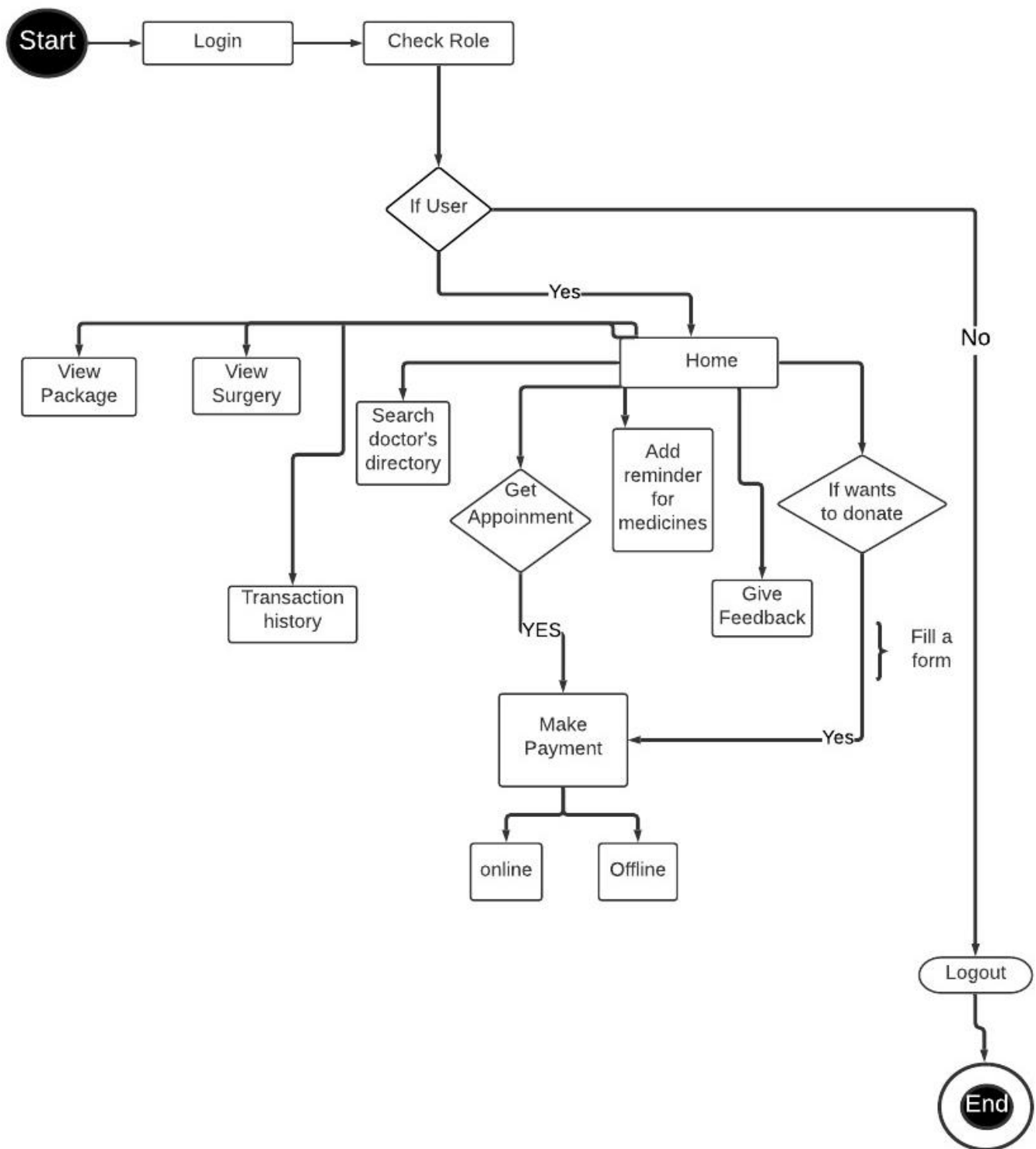
Figure 3.3.4: Activity Diagram for Users

3.4 Website Overview

3.4.1 Homepage:

This is the homepage of the website. User will see this on entering the site.

Figure 3.4.1: Home page of website

3.4.2 Menu:

This is the menu user will choose from the various options of surgery and also know about the website. Female to male, male to female and non-binary. These will navigate them to their process of getting the desired service. People can change their gender. A male can wish to change his gender that is wants to be female. A female can wish to be male. Anyone who is gender neutral can get treatment to be any gender they choose to.

Figure 3.4.2: Menu of Website

3.4.3 Search Doctor's directory:

This option will allow users to search for the doctor according to their selected location. Which was added by admin the search option will take them to the details of the doctor : Number photo, etc. If they are satisfied after seeing the info they can take an appointment.
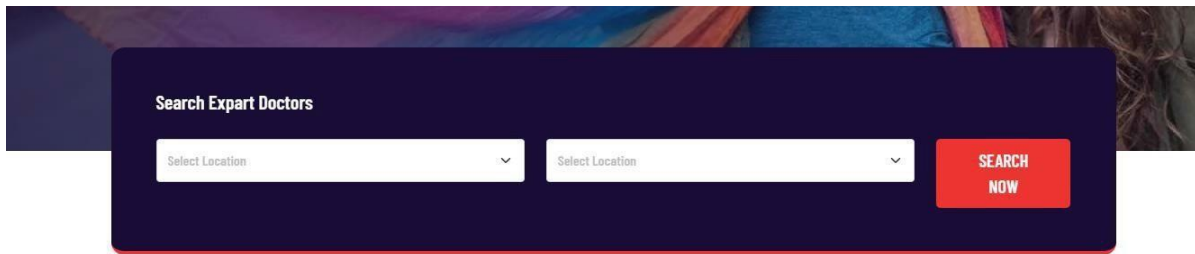
Figure 3.4.3: Doctors' Directory

3.4.4 User Login:

Users will login to the site with the email they have registered with. And type the correct password in order to login. If the credential matches they will be logged in and can fix appointments or take any service. The fields email and password can't be left empty.

3.4.5 Donate:

People finding this website can donate if they wish to. Payment will be checked by the admin. They will be given a form to start the donation process. Admin will reach before making transaction.
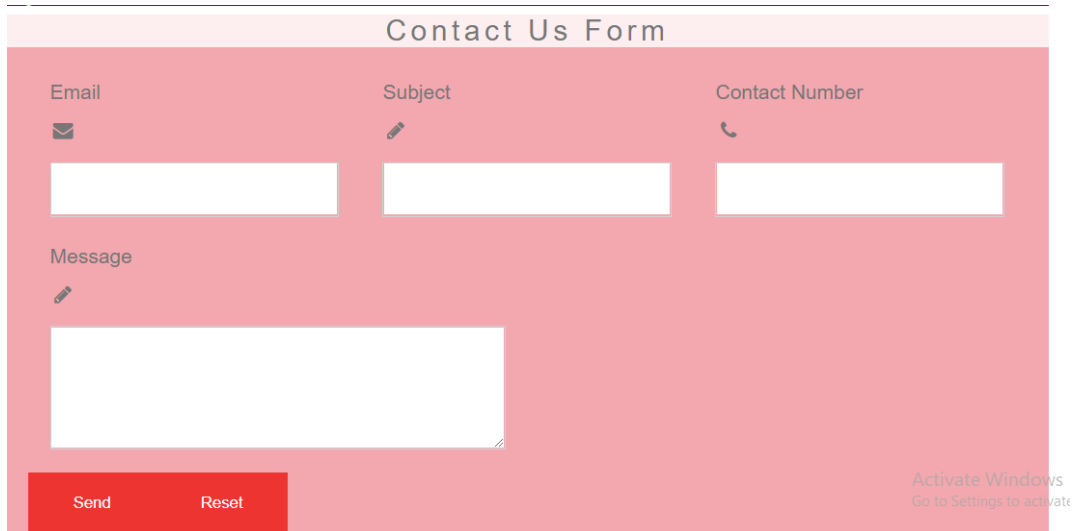

Figure 3.4.5: Donate

3.4.6 Contact us:

The contact us button of the website will take you to contact us form. You can send your opinion or complain. Or ask for a query. You will also have to provide a contact number.

If required, the admin will reach you through email or direct call. In the input pox you can write your issues regarding appointment, donation or other.

Figure 3.4.6: Contact us

3.4.7 Subscription:

People subscribing with an email to the website will get news on updated packages, insurance and new technologies of transition of gender. They can also connect with us through Facebook, Twitter, and LinkedIn. And subscribe to our YouTube channel.

3.5 Challenges:

The challenges were more in my workplace as I had to work as a rapporteur .I had to coordinate with both entities outside and inside the office.

- .Working as a middle man for the project execution was hard.
- Engineers would misinterpret and make changes in functionality and this would lead to small problems. And for that we had to call for a meeting more than the scheduled ones.
- Clients change their mind and this results in a change in functionality of the product. But they would expect the end product within the given deadline what they set initially.
- Many a time a product works fine in our place but when it gets delivered a problem arises in the client end. This leads to amendment of the project and hampers the product delivery.

CHAPTER 4

Competencies Earned and SMART Plan

4.1 Competencies Earned

Internship is a great opportunity as you need to implement your bookish knowledge earned so far in your academic years to solve real life problems. Communication Network helped me to step out of my comfort zone and use my critical thinking ability to solve issues. As I really like to communicate with people, this internship exposed me to ample opportunities to communicate with people. I have learned to work independently within the organization. Which will be a great experience for my future workplace? The adaptability of the situation through critical thinking and analyzing different situations and asking questions against the situation is what I learned working as an intern .I can work independently with a little guidance .The art of describing a brief for the project execution is crucial and that I learned to deal with this tactfully. All these skills will act as great asset for my future career.

4.2 SMART Plan

The motive must be specific, what I want to achieve or for what. It is essential to measure the goal for progress throughout the work and how it will be accomplished. The technology adaptability is the demand of the time. Because technology tends to change within a short time. So learning it within a short time and adaptability is the key in this era of technology. Determine whether this achievement is achievable or to what extent it is accomplished. . It is the way relevant in pursuing the achievement. And finally fix a time bound to finish it within time.

4.3 Reflection

Overall I had good internship experience. I could have learnt more techniques to draw flow charts efficiently. The advice I would like to give to future interns is to utilize internship fully so that they get adapted to new things in this short span of time. Taking opportunity to finish a task with small advice given, using critical thinking to solve problems will enable scope of oneself to bloom throughout their career.

The employees are not comfortable to get adapted with new things. They find it as a burden. But adaptability is key to bloom in this competitive world where learning new things is the key. And facing fearful things will help to boost confidence and remain on the track of goal.

CHAPTER 5

Conclusion and Future Career

5.1 Discussion and Conclusion

I attended office six days in a week either from home or physically. I went for client meetings. During internship in Communication Network everyone helped me to work smoothly and gave me scope to grow my skills by working on various projects. They also showed me working as a team is the key to solve big tasks. When I get stuck at something I go and read blogs or watch videos from YouTube. That helped me a lot. Communication Network provided me with a friendly environment and helped me to grow the mentality to accept challenges which is a great lesson for my future career.

5.2 Scope for Further Career

Task of an analyst doesn't remain within a boundary. For a project to be executed or a product to be built adapting new challenges daily and solving them wisely is a big task. Sometimes one needs to solve problems which he is not being assigned to. Customer satisfaction is what we need to ensure at any cost. Our ways to satisfy, convenience and deliver products will make us different from the others. Technical and non-technical things should be learnt so that nothing hinders the project from being executed. Because of availability of resources anyone anytime can pursue any job .Thus there is no way to overlook any skill let it be any soft skills or any hard skills.

References

[1] Gunawardhana, L.P.D., 2019. Process of Requirement Analysis Link to Software Development. Journal of Software Engineering and Applications, 12(10), p.406.

[2] Demirel, S.T. and Das, R., 2018, March. Software requirement analysis: Research challenges and technical approaches. In 2018 6th International Symposium on Digital Forensic and Security (ISDFS) (pp. 1-6). IEEE.

[3] Byrd, T.A., Cossick, K.L. and Zmud, R.W., 1992. A synthesis of research on requirements analysis and knowledge acquisition techniques. MIS quarterly, pp.117-138.

[4] Sommerville, I. and Sawyer, P., 1997. Requirements engineering: a good practice guide John Wiley & Sons. Chichester, England.

[5] Namugenyi, C., Nimmagadda, S.L. and Reiners, T., 2019. Design of a SWOT analysis model and its evaluation in diverse digital business ecosystem contexts. Procedia Computer Science, 159, pp.1145-1154.

[6] Osita, I.C., Onyebuchi, I. and Justina, N., 2014. Organization's stability and productivity: the role of SWOT analysis an acronym for strength, weakness, opportunities and threat. International Journal of Innovative and Applied Research, 2(9), pp.23-32.

[7] Hill, T. and Westbrook, R., 1997. SWOT analysis: it's time for a product recall. Long range planning, 30(1), pp.46-52.

[8] Youtube.com. 2021. Use case diagram \ use case diagram tutorial in Bangla. [Online] Available at: <https://www.youtube.com/watch?v=IyiCfWqor_I> [Accessed 20 March 2021].

[9] Youtube.com. 2021. UML Class Diagram Tutorial. [Online] Available at: <https://www.youtube.com/watch?v=UI6lqHOVHic> [Accessed 23 February 2021].

[10] Network, C., 2021. Conet BD website. [Online] www.conetbd.com. Available at: <https://www.conetbd.com/index.html> [Accessed 10 April 2021].

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