

Report on
e-Tender : An Enterprise Resource Planning Module for
automated Tender Contract management at Essential Drugs
Company Limited

by

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An internship report submitted to the Department of Computer Science and
Engineering in partial fulfillment of the requirements for the degree of
B.Sc. in Computer Science

Department of Computer Science and Engineering
BRAC University
February 2025

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Declaration

It is hereby declared that

1. The internship report submitted is my own original work while completing degree at BRAC University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Approval

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of Fall 2024 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of B.Sc. in Computer Science.

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Subject: Transmittal of the final internship report on the e-Tender project

Dear Sir,

It is my pleasure to display my project report regarding the e-Tender project as well as my position and responsibilities at Essential Drugs Company Limited. The report has been prepared in accordance to the guidelines provided by BRAC University.

I trust that the report will meet the necessary desires.

Sincerely,
Kazi Asif Shahrier,
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Abstract

Joining the workforce right after graduation can be quite the daunting task, as you are quite literally shoved into a corporate space without really having any sort of former training or experience. But being able to utilize said opportunity to learn from it and become more knowledgeable as well as capable should be ones true motive.

During the past few months, I had gained the opportunity of working at the autonomous government organization "Essential Drugs Company Limited" as an Officer under the department of IT. Though put on different projects initially, soon I was given the task of handling the E.R.P or Enterprise Resource Planning module that was being developed for a specific part of the company. Which among other duties became the main focal point of my contribution. As you are already aware that an ERP module is used to manage the core functionalities of a business and automate said functionalities in order to keep proper track of all records as well as make the whole process more efficient. The module is mainly being developed for the Marketing and Accounts department to automate the Tender Contract processes. Now throughout the report I have explained in extensive detail of each and every step of the whole development process to the project current state at present.

Across the development process, I was constantly faced with new and various sets of problems and challenges. But by trying to come up with solutions to each new challenge gave me the fortitude I needed to push through. Which brings me to say that the past few months have been very enlightening for me to say the least. I have gained invaluable experience and knowledge that will be useful throughout my life.

Dedication

True dedication isn't just about putting in long hours. It is about forming a genuine commitment to learning, growing and contributing to the workforce. It means actively seeking opportunities to expand ones skillset, embracing challenges as learning experiences and consistently striving to exceed expectations. Which is why this dedication not only gives a positive impression onto ones peers but attracts the attention of superiors and garners their priase as well.

This is reason why I am very thankful towards my supervisors as well as my parents and guardians who were able to distill these values into me when it was needed the most.

Acknowledgement

All praise to the Almighty as I was able to land a position at a Government facility and am able to complete this project without any major setbacks.

To my primary supervisor Md Abdur Rahman at Essential Drugs Company Limited, my deepest gratitude for supporting me throughout the entire time since day 1 at the company.

My sincere gratitude to Professor Golam Rabiul Alam for his guidance through the whole process.

Most importantly, to my parents without whose support I would not have made it this far in life. My utmost respect and affection goes out to them.

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Chapter 1

Introduction

1.1 Prologue

university studies provide a strong foundation but, working in a professional setting be it temporary can grant practical experience that is much beyond the traditional classroom. It allows the student to hone their skills and develop expertise in real life scenarios which help them cultivate interpersonal skills by working on real world projects.

Being fortunate enough to join a Government facility as an Officer is a privilege in itself but it is also a necessary requirement for me to complete my graduation from BRAC university as well. Which is why being a recent graduate I barely had any idea as to how a Government Office or any office in general functioned. However, my supervisor being the calm person that he is guided me thoroughly and integrated me into the team perfectly.

I found the past few months to be extremely fruitful as it significantly enhanced my critical thinking abilities as well as my technical skills and being able to work in a team setting grants you different insights as well.

Hence I believe that an internship in the bridge that removes the gap between theory and practice by enabling students to apply their theoretical knowledge in a practical setting.

1.2 Objective

The primary objective of this report is to meet the fulfillment requirements for the BRAC University's internship program. The document has been generated through the data of the past several months I have worked at EDCL and is based mainly of that information. Apart from my personal work experience the document also contains general information about the company, it's corporate structure, work environment as well as products and services the company provides the people of Bangladesh being a Government entity.

In addition to that the document also contains information regarding my accomplishments, project work and professional development during this time.

1.3 Overview

The document contains extensive information regarding my work experience at Essential Drugs Company Limited. The documents main focus is the project that I have been a part of at the company. The whole development process of the project, the current state of the project. Challenges or difficulties related to the project and such.

Other than delving into detail about my contributions, the document also contains information regarding my daily tasks and activities during work hours, work culture and not to mention my achievements as well as my leanings during this time.

1.4 Modus Operandi

The data that has been used to create this report is mainly comprised from two main sources.

1.4.1 Primary source

The primary source of data is my own work experience and first hand knowledge that I have gained through working at the institute.

1.4.2 Secondary Source

The secondary source of data is the Official website of EDCL as well as some reputable websites that I have collected information regarding the company through.

Chapter 2

Company Overview

Essential Drugs Company Limited is a successful joint stock company for the Government of Bangladesh. It's financial performance over it's years of operation is praiseworthy in private and public segment.

2.1 About EDCL

Essential Drugs Company Limited (EDCL) is a 100 percent state owned Pharmaceuticals Company in Bangladesh. In the year 1962 it was functioning under the Central Government in the name and style of Government Pharmaceuticals Laboratory (GPL) and subsequently it was renamed as Pharmaceuticals Production Unit (PPU) in the year 1979. In the interest of Public Health and smooth running of the organization, it was registered as a Public Limited Company under the Company's Act-1994. The Ministry of Health and Family Welfare of Bangladesh is its controlling authority. It was established in 1983 with the main objective of setting up an advanced pharmaceuticals industry in the country for the local production of medicines and to supply these products inside the country for public health and for Export. EDCL has developed a strong position in Bangladesh in Govt. Sector and is well positioned to sustain its growth and have a sound platform to serve export markets. Presently authorized capital of EDCL is Tk.200.00 Crore and paid up capital 100.92 Crore Tk.10/=each per share. It's main objective is to manufacture quality drugs at an affordable price and supply to the Government Hospital and other Health Institutions. Since the inception of its production the company has been supplying Essential Drugs to the Government Hospitals, Civil Surgeon's Offices, Health Institutions of Government, Non-Government and International (Non-profit makings) Organizations like UNICEF, WHO, ICDDRDB etc.

2.2 E.D.C.L Production Plant's

Essential Drugs Company Limited currently has four production plants that are operational as we speak and the fifth and final plant titled as the "Manikganj Project" has been proposed and is currently undergoing negotiations.

EDCL Dhaka

The EDCL Factory Building at 395-397 Tejgaon Industrial Area, Dhaka is about 45 years old structure and was established in the year 1960 is currently the head operating facility of the entire institute.

EDCL Bogura Plant

In the year 1985 another unit by name Essential Drugs Company Limited, Bogura was established at Japanese Grant. It has also been supplying Essential Drugs to the Government Hospitals, Civil Surgeon's Offices in Northern and Southern Districts of the country. This Company has been expanding very rapidly to serve Health Sector. Cephalosporine Project- it's another unit in Bogura will go for commercial production soon. Its production capacity per hour is 18,000 Vials.

EDCL (3rd Plant), Gopalganj

The 3rd Plant of EDCL went into operation in July of the year 2018. The aimn of this plant was to be able to supply contraceptive pills and Injectable, different types of I.V Fluid as well as to produce Penicillin and related Products following cGMP guidelines.

Khulna Essential Latex Plant (KELP)

Khulna Essential Latex Plant is an established manufacturing Company that produces quality Latex Male Condoms for the domestic and export market. The factory and office complex is located at Mattomdanga, Gilatala, Khulna, Bangladesh. The factory complex consists of the manufacturing, stores, quality control, engineering, purchase, sales and marketing and an administrative wing.

EDCL Manikganj Project

Proposed project to set up a new factory for Essential Drugs Company limited in the state of Manikganj.

Employees Empowerment and Development

EDCL acknowledges its employees and their role in accomplishing its goal and in its growth, therefore, it is committed to recruit and appoint individuals as per Service Rules, Recruitment, Promotion Criteria and Revised Organogram with high qualifications. It is committed to motivate and train its staff to improve their knowledge, skills, and abilities and empower them to provide outstanding services to the company and the nation. In return, it expects employees to perform effectively with outstanding professionalism and loyalty for the betterment of the company and the national health.

Team Spirit

EDCL realizes the importance of teamwork for the growth of the company. It works continuously to improve organizational performances. EDCL's strategy was based

on developing business relationship with most of the existing players in the pharmaceuticals market. This is aimed at capitalizing their strengths, and specialization.

2.2.1 Mission and Aim

EDCL'S Mission

EDCL is committed to provide high quality pharmaceuticals products of international standards that earn the confident of the nation through internal development and strategic alliances to benefit its employees, the society and the nation as a whole. Finally the Company wants to improve the quality of human life by enabling people to do more, feel better and live longer.

EDCL'S Vision

EDCL envisages to rank among the top performers locally and strengthen its network of global operations to export.

Continuous Quality Improvement

EDCL believes in its responsibilities towards patients, health care providers, and the society where it operates. It is committed to apply highest quality standards on its products during all phases of development, production, warehousing and marketing always takes initiative to exceed the standards.

Customer Satisfaction

EDCL values customers and cares for their needs, therefore, it is committed to work with its customers directly to understand consumer's needs and requirements. Customer satisfaction is one of its top priorities.

Distribution

EDCL caters the requirement of even remote areas very effectively through Govt. Hospitals, Civil Surgeon offices and Community Clinics.

2.2.2 Recruitment Process

The recruitment process for Essential Drugs Company Limited is just like any other Government Institute. The job circular notice is usually published by Essential Drugs Company Limited on their official website www.edcl.gov.bd . There are different positions requiring different educational qualification based on which one may apply to the post best suited for them. After which depending on the position an applicant must sit for an exam depending on which the applicant is either accepted for the position or rejected. However, one thing the applicants must oblige by is the fact that an applicant must be a citizen of Bangladesh.

Chapter 3

Department and Employment Details

My employment at Essential Drugs Company Limited started on the 1st of September 2024. However, I received my employment letter on the 5th of June 2024. I am a full time employee at the company working under a temporary position as a Junior Officer in the Department of IT. As of February 2025 I have begun my sixth month of employment at the Government facility.

3.1 Personal Experience

The experience to work as an intern at a firm is a huge step forward in one's academic life as well as their career. Being able to obtain work experience is a huge benefit nowadays when the rivalry for jobs in today's world is fierce. It also helps us students to transit easily into the professional world when we eventually complete with our academics. Applying theoretical knowledge in real life is a challenge on its own. But coping up with the challenges and gaining valuable work experience through the difficulties is what it's really about.

Being lucky enough to join a Government facility as an Officer is a privilege in itself but it is also a necessary requirement for me to complete my graduation from BRAC university as well. Which is why being a recent graduate I barely had any idea as to how a Government Office or any office in general functioned. However, my supervisor being the calm person that he is guided me thoroughly and integrated me into the team perfectly.

3.2 Familiarizing with EDCL

Being a Government owned facility and a Pharmaceuticals and Drug manufacturing plant on top of that, it is no secret that this facility has a lot of moving parts. Which is why it is unsurprising to state that EDCL is comprised of a total of 15 separate departments which all work cohesively to run and maintain the entire institute. The facility is spread across three buildings and is considered one of the largest facilities in the industrial area.

It was a bit overwhelming in the beginning but I was able to slowly familiarize myself with everything to a point where I am now able to maneuver within the

facility quite easy now. It isn't all known to me yet but I know enough to go by on a day to day basis.

3.2.1 Departments of EDCL

There are a total of 15 departments in EDCL. They are as follows:

1. MD Secretariat
2. Administration and HRM
3. Accounts and Finance
4. Company Affairs
5. Planning
6. Engineering
7. Information and Technology
8. Sales and Marketing
9. Project Development
10. Production
11. Internal Audit
12. Procurement
13. Product Development
14. Store
15. Quality Assurance

3.3 Department of I.T.

Granted it being the department that I joined, it would be the first I would have the chance to familiarize with. The department of IT is a fairly new wing compared to the rest of the departments. The IT department was formed around 16 years ago and the current Deputy manager who is the one in charge of the whole department as well Mr. Hassan ur Rashid was the one who proposed the idea of it being a separate entity.

3.3.1 Members of the Department

Being relatively new the department of IT is comprised of only 19 members including myself. The team consists of deputy managers, officers of various ranks, computer operatives and office assistants(peon's).

3.3.2 Department Hierarchy

Being a Government Office hierarchy is maintained quite strictly in the office. Which is why I felt the need for this to be mentioned. The departmental hierarchy is as follows, the ranks are given on a descending order:

- Deputy Manager (Department Head, Officer in charge)
- Senior Officer (Acting head in absence of D.M)
- Officer
- Assistant Officer
- Junior Officer (Current rank)
- Computer Operator
- Technician
- office help/assistant

3.4 Training Supervisor

My training supervisor was Mr. Md. Abdur Rahman sir, who is currently working as an officer of IT. He has been an employee of EDCL since 2016. He has been very kind and patient with me since the very beginning and has helped me get familiarized with the facility as well as all the departments and its people. I honestly could not have asked for a better supervisor.

3.5 Commence of Training

Being the large facility that EDCL is, my task initially for the first few days was to get to know all the departments and the layout of the facility.

3.5.1 Layout of EDCL

Familiarizing oneself with the layout of EDCL is a separate challenge in itself as the facility is divided into three main buildings. There is the main building where the MD secretariat wing is located. It is also where the admins and accounts sections as well as the other book keeping sections are situated. Then there is the factory wing where the raw materials and storage units are located. Finally there is the Engineering and QA wing where the labs and engineering teams reside.

3.6 Workplace Facilities

Being a Government facility there isn't an abundance of workplace commodities but there are few. Some of them have been detailed below.

3.6.1 Morning Tea

Being a drug production plant the company is not able to provide unlimited tea due to the sheer number of employees it houses. Which is why the company offers Tea as a refreshment during morning hours from 9:00 AM to 10:00 AM and it is available for all employees.

Other than this the company does not provide any sort of refreshment at any hours.

3.6.2 Company Lunch

The company does provide lunch for all employees and it is prepared by the company's own in house cafeteria staff. The company has a fixed menu for everyday of the week which is served in portions. The cafeteria usually starts serving lunch from 12:00 PM and serves till 3:00 PM.

3.6.3 Company Medical Care

Being a drug production facility it is no secret that the company has access to its fair share of medication. Which is why it is comparatively easier for employees at EDCL to receive medical attention. There is a team of two doctors and three nurses available at any time of the day in the med bay of the company. Any medical services received by employee are of course free of charge.

3.6.4 Company Transport

Any and all members employed by EDCL receive the benefit of signing up for free transportation provided by the company. However there are prerequisites that need to be fulfilled before an employee is eligible for that option. But it usually tends to be the issue of availability.

Chapter 4

Integration into workforce

Within the first couple of days, through the guidance of my supervisor I was able to start the process of finding my place into the work force of the team. Though it started slow but I was able to complete my tasks and gain notoriety of the higher ups which granted me enough recognition to be a part of something substantial.

4.1 Initial tasks

My tasks initially were mainly comprised of troubleshooting, system failures and bug fixes. It isn't necessarily troublesome work but what made the tasks daunting was the fact that most of the facility was running outdated software on older machines which don't really have proper patches to bugs anymore. But I tried doing what I could and the users were mostly satisfied.

4.2 Main Project

After a couple weeks of joining I received the news that the framework was complete for the e-Tender ERP which was going to replace the current analog setting. At that stage the module still lacked all the necessary information regarding our employee and plant details. Thus it would need weeks if not months of curating.

4.2.1 Getting selected

hearing about this project and it's future aspects I was already interested in being a part of it as I would be able to contribute greatly to it. Luckily enough alongside another full time employee my department head also asked me to be a part of the project as well.

4.2.2 Project Details

Due to the new module still being under construction I cannot go into extensive details about it. However I am able to share some details such as it contains extensive details about the company as well as the companys financial logs an details.

The main focus of this project is transparency. To be able to have all records centrally is the ultimate goal of this project.

4.2.3 Project Hurdles

Projects, no matter how well-planned, often encounter challenges that can hinder progress and on top of that being a project of a Government run facility, thus it is safe to say that this project was bound to run into troubles along the way.

In spite of having the backing of the department head, due to the project being so extensive, the curating of the information needed to complete the project just kept getting more and more difficult.

An explanation is required to properly grasp this part, due to the facility being a state owned entity it is required to have written records of every transaction on multiple stations. This is also the case for information regarding the facility as well as any pictures of the facility whether it be of the facility itself or it's employees.

In addition to this, as the facility is made up of an array of different departments, all of it's details must also be signed off on multiple occasions in order to be used on the module. Which hinders the process even further.

4.2.4 Progress

Any project whether it be public or private is not without it's own set of shortcomings. Which is why regardless of all the problems along the way taking the project to completion is the goal one should strive for.

Attributed to this I can safely claim that even through all the challenges the module is in it's final stages of development and should be actively deployed by the next physical quarter of the calendar year. That is the date set forth by the department.

Chapter 5

Project Details and Contributions

e-Tender is an Enterprise Planning Module (ERP) specifically designed for the purpose of streamlining the Tender Contract bidding process for Essential Drugs Company Limited. The project was mainly developed by the company WEBNS through a government mediated contract and is based on their own developed module the Steps ERP. The module has been in development for 8 months and is almost ready to be deployed. I am currently working on behalf of EDCL with WEBNS to ensure that the module is deployed on time and will be up and running by the next physical quarter of the calendar year.

5.1 Contextual Overview

An Enterprise Resource Planing Module or ERP is a highly specialized software component that is designed to manage and boost efficiency of certain business functions or streamline processes. These ERP modules are able to integrate seamless-ness in the areas of data sharing across platforms or in between workflows to provide a holistic view of an organization's overall operations.

The e-Tender ERP is also a similar function. It was mainly proposed for the purpose of streamlining a very basic but rudimentary task of our organization, the tender bidding process. As it is very inefficient and create a large amount of paper waste. Thus to tackle this the module was mainly proposed.

5.2 Objectives

The project is subject to a multitude of objectives that must be fulfilled by the time of it's completion. Due to the fact that it is a Government project extra caution must be maintained as any sort of mishap may result in the termination of the entire project. Also another fact to that requires to be mentioned is that due to the project having multiple overseers and not all of them being agreeable to the specifications entirely, minor bumps during the workflow like delay in paperwork or lack of response by certain figures is to be expected. But the key aspect to be noted is that the project did receive positive remarks and did receive the green light to proceed into development. Thus the completion requirements are as follows:

- Creating a proper channel to keep records of all data regarding tender contracts.

- Data transparency across all departments
- Streamline Tender bidding process
- Automation resulting in cost effectiveness
- Expanded market reach

5.3 Project Responsibilities

As mentioned earlier the development of the ERP module was being handled by the company WEBNS. I was mainly tasked with overlooking each and every aspect of the software to ensure proper delivery.

When I joined the company the project was already under development. After my joining my department chief showed me the ropes and tasked me with overseeing different aspects of the project.

Initially my task was to conduct requirement analysis for the project. Which meant going to all 15 departments of EDCL physically and spend countless hours with the department representatives to go over all the aspects of the module and what the key specifications of each departments were.

After specifications were collected they had to compile and checked to see if there were any cases overlapping specs. This was done so that there wasn't any repeat of functions. This was done so that seamless transitions can be made from each department without doing any extra work.

Then came the process of checking every function of the module in case of malfunctions. This was exceptionally difficult as it had to be done from our end and then reported to the developing company in order for them to make the changes as we(the officers at EDCL) are not authorized to make any changes to the software until we take complete delivery. I managed to make a fix to this where I used to call the developers from WEBNS to our office and have them do the editing in front of me with my guidance but due to conflicting schedules this wasn't always possible which is why I couldn't get around to doing that much too often.

Due to the project having ties to several departments, testing had to be done manually and from multiple user perspectives which made the task even more extensive than it preexistingly was.

5.4 Work Flow

The Waterfall model is a linear, sequential approach to the software development lifecycle (SDLC) that's popular in software engineering and product development. The Waterfall model uses a logical progression of SDLC steps for a project, similar to the direction water flows over the edge of a cliff. It sets distinct endpoints or goals for each phase of the development process. Those endpoints or goals can't be revisited after their completion. Dr. Winston W. Royce at the Lockheed Software Technology Center introduced the concept in a paper published in 1970 on his experience developing software for satellites. However, Royce didn't use the term Waterfall; instead, he referred to the downstream value of documentation. The Waterfall model continues to be used in industrial design applications. It's often cited as the first software development methodology. The model is also used more generally as a high-level project management methodology for complicated, multifaceted projects.

As the e-Tender ERP was outsourced for development, it can be said that the work-flow resembles that of the Waterfall methodology. As the progress and development is quite linear in nature, with the requirements for this project being extremely detailed and the steps leading up to deployment are well defined with minimal changes in between.

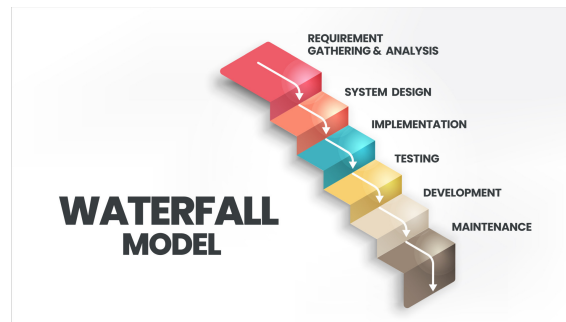


Figure 5.1: Work flow based on the waterfall model

5.5 Project Development

The task of developing the e-Tender module was given to the company WEBNS Technology Limited. They are currently in the process of completing it's development based on their own steps ERP module. The Front-end design and development utilize Developer 6i/12c and VB .Net technologies for creating dynamic interfaces. Also the Software development is powered by Oracle APEX, utilizing Oracle Database versions 10g and 12c, alongside MS SQL Server 2012 and MySQL. Based on the Waterfall model, the different phases of the development for the e-Tender ERP have been stated below:

5.5.1 Phase 1 : Gathering Requirements and Specifications

As stated before in my Pre Thesis 1 report, EDCL is a Government owned entity with a lot of moving parts and an astounding 15 departments with many other sub divisions in between to boast. Consequently the task of gathering requirements that benefited all the departments was monumental. Additionally the fact that the list of requirements had to be signed off by all the department heads was a daunting task of itself. Which is why unsurprisingly the gathering of the requirements alone took nearly 3 months to complete. However, it should be mentioned that I was not present at the company during this task as I wasn't employed there at the the time but I have seen the stack of documents the task produced and it's safe to say that it was a daunting task indeed.

5.5.2 Phase 2 : Requirement Analysis

Requirement analysis is the crucial initial step in the development process, laying the groundwork for the entire software project's success. It demands continuous communication with the stakeholders and their end users. This allows one to set expectations, manage application errors or issues, and document all critical needs. In the software development process, the requirement analysis is the main phase that allows understanding, documenting, and defining the expectations of the users and other stakeholders related to the software application. While developing software, aligning with the business and software requirements is essential. It is essential to have detailed information on the requirements of the software application before initiating its development so that everything is clear between the needed product and the final result.

Following the task of gathering the specifications from all departments was completed, it was then handed over to the company WEBNS for analysis. Fortunately this part of the process was not drawn out as the requirements were within range of their own Steps ERP module. Which is why they were able to swiftly get on the task at hand and started developing the project as soon as they were able. Within weeks we had proper results worthy of showcasing.

5.6 System Designs

5.6.1 System Design: Flow chart

Based off the requirements the initial system design was described as a informative dashboard show casing details about the company's tender contract details as well as a multi authorization system requirement for a contract to go live. Depicted better in the flowchart below.

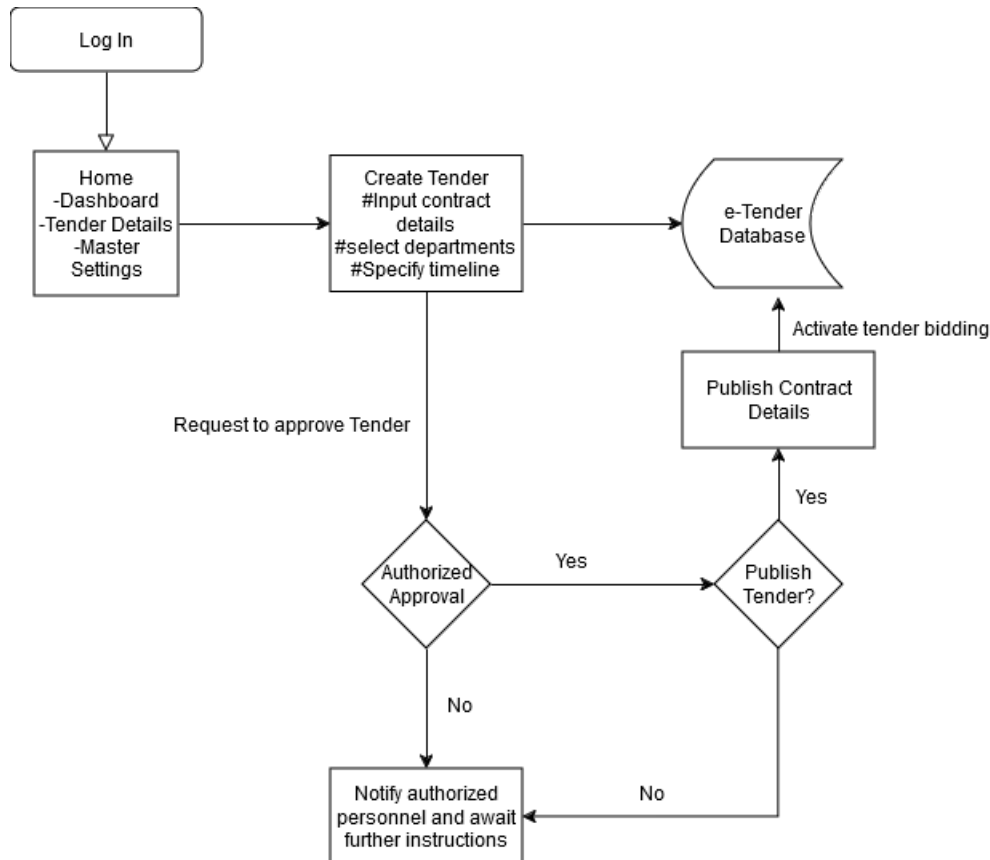


Figure 5.2: Initial Flowchart

5.6.2 System Design : Use Case

On account of the system being used by multiple departments a hierarchy must be put in place for the workflow to be sanctioned and authorized through the proper channels. The different operations of all the classes available within the system are best described through the use case diagram given below.

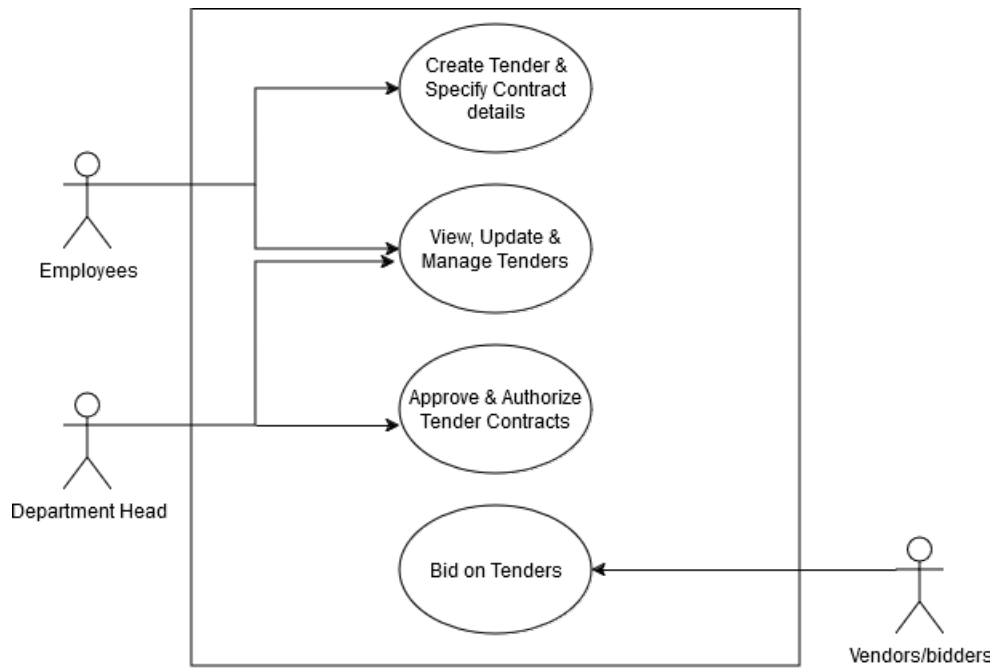


Figure 5.3: Use Case Diagram

5.6.3 System Design : Class Diagram

Due to the project having a very complex relationships and a variety of users, the class diagram below should be able to depict all the user relationships and define the class hierarchy. Diagram given below:

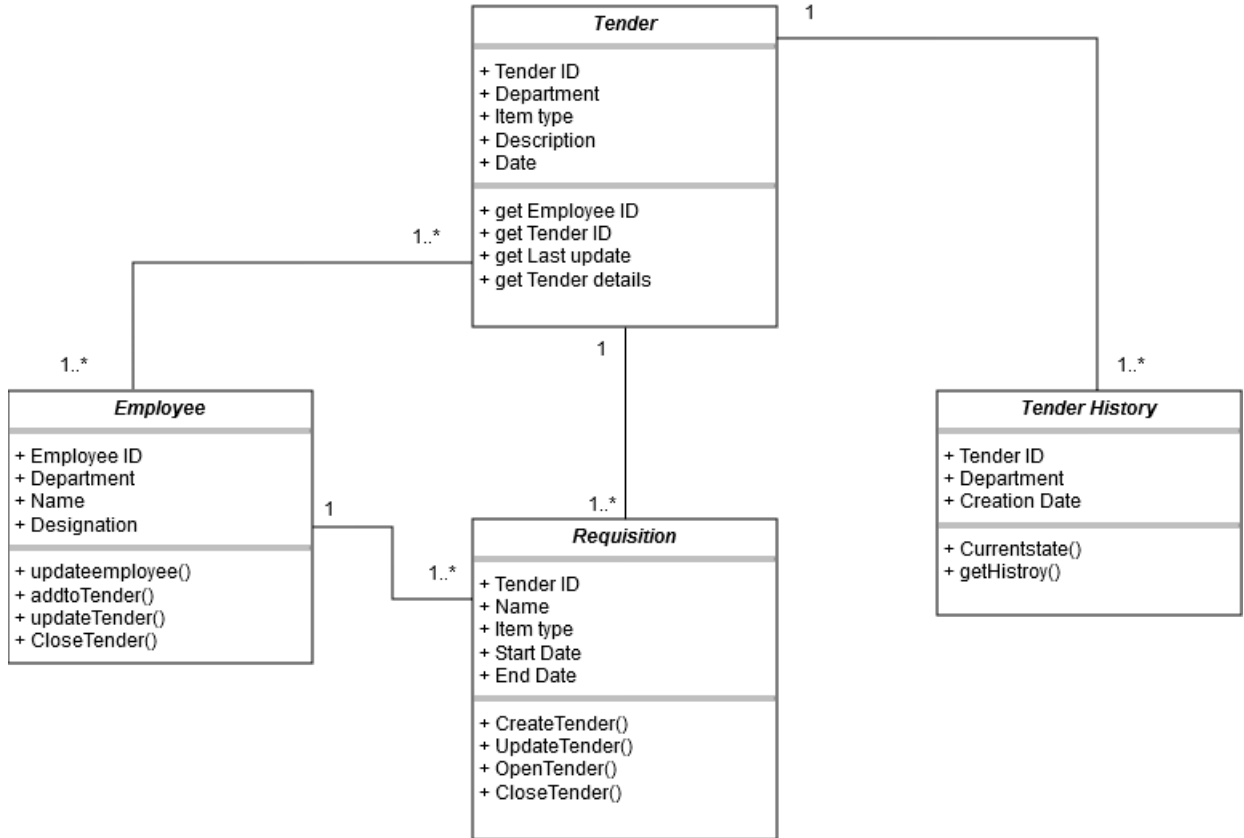
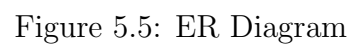


Figure 5.4: Class Diagram

5.6.4 ER Diagram

An Entity-Relationship (ER) Diagram is a visual representation of how different entities relate to each other within a system. It's a powerful tool used in database design to model the structure of a database. But as it stands the company this project has been outsourced to has yet to deliver the final version of the module. Which is why at this moment I am unable to provide a proper ER diagram. However, due to me spending countless hours testing and helping redesigning the module I was able to create a good enough representation of the Entity Relations within the system. Which is depicted in the following diagram:



5.6.5 Current State

The module is at a near complete state and is currently being tested thoroughly by me. It is in the process of being tested at a semi live state as the module is being tested with actual live contract details and information with real time entries and bids.

However it should be noted that an official payment gateway is still yet to be incorporated into the module. As being a Government entity all transactions must be done through the Sonali Bank and negotiations are still underway. Thus until the negotiations are complete and the payment gateway is set the project cannot be complete.

After the payment gateway is in place and functional the project will enter it's final testing phase and soon will be ready for deployment.

Just for reference some pictures of the interface of the module in it's current state have been given below:

5.6.6 User Interface

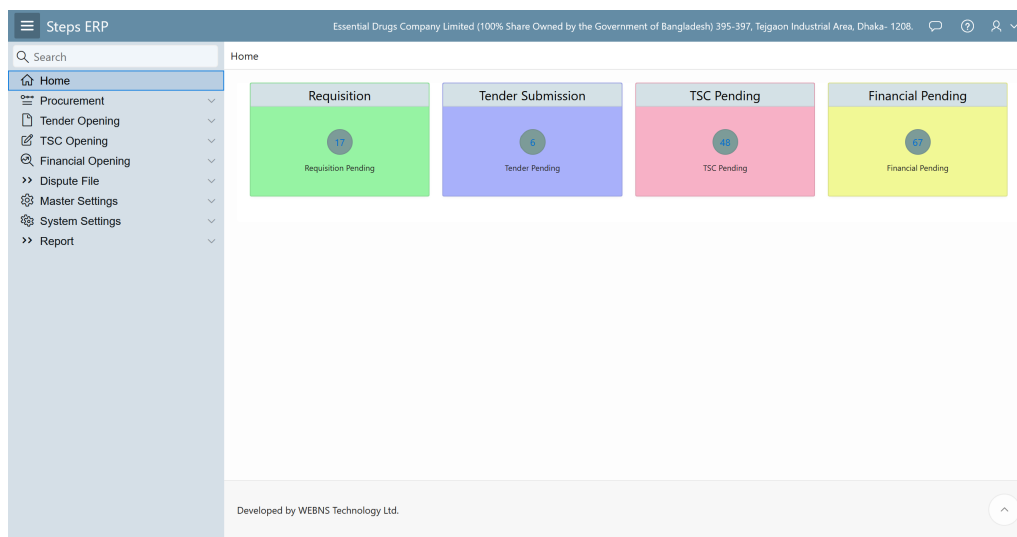


Figure 5.6: User Interface

Log In page

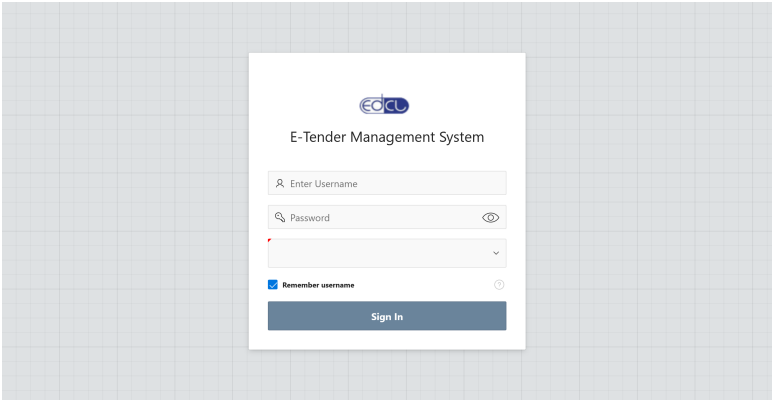


Figure 5.7: LogIn Page

Requisition Page

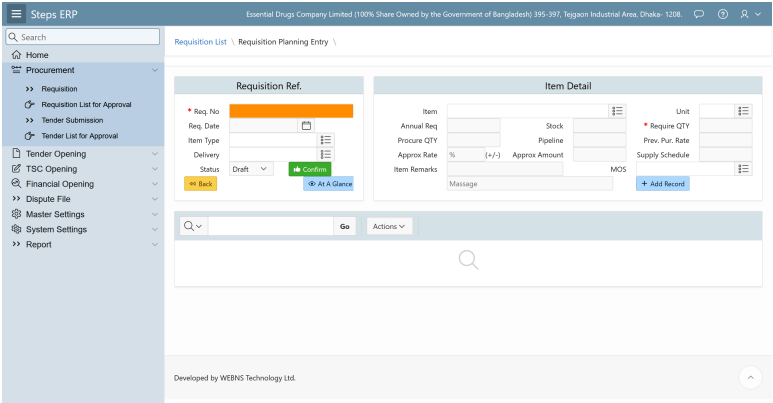


Figure 5.8: Requisition Page

Tender Submission Page

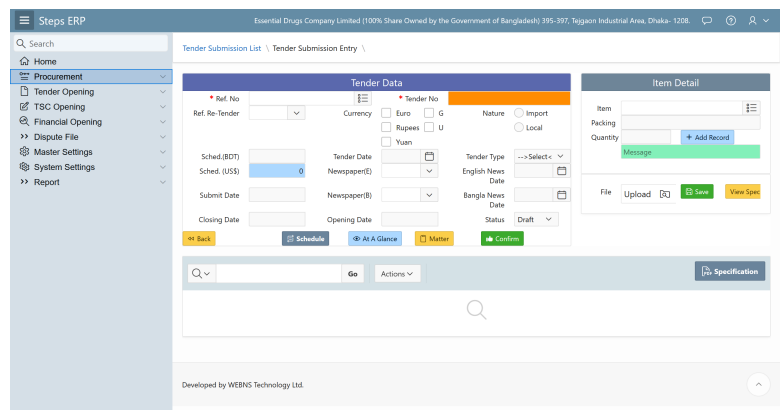


Figure 5.9: Tender Submission Page

Bidder Registration

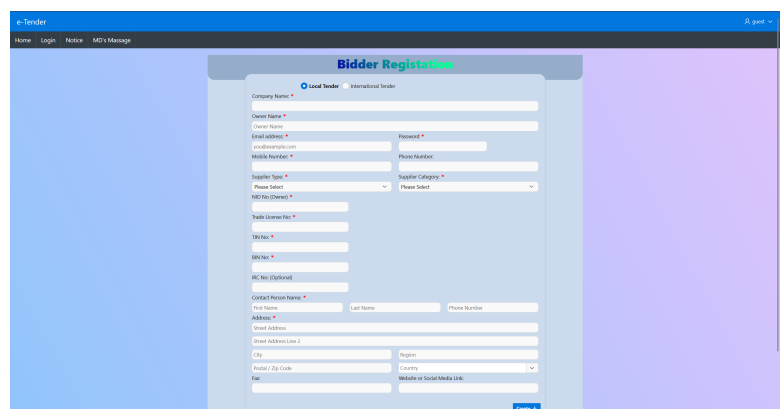


Figure 5.10: Bidder Registration

5.7 Contributions

I was deeply involved with the requirement analysis phase of the project where I was tasked with physically going to each department and collecting specifications. As well as the Designing phase where I contributed greatly to increase the efficiency of the whole system.

Lastly the testing and debugging of the software which is the most grueling task is still being done by me and one other member of the department. We spend countless hours each day checking and rechecking each and every aspect of the module to ensure everything is running correctly.

5.8 Future Aspects

The e-Tender ERP Module is only the first stage of a company wide revamping project. It is only the beginning of a long but necessary step for the company's future to gain complete autonomy. Thus for that goal to be achieved the module must perform well. Because if the module performs as expected, there is a high possibility where of a company wide ERP module project to handle the company's system centrally might be approved. The system must of course be housed under one single central hub from where the system will then branch off to multiple sectors of each department but that is a discussion for a later date. For now the one and only main concern is to have the e-tender module debugged and tested to perfection before it's deployment. If we are able to finalize the module and deploy it within the specified time frame the chances of further expansion for the project under different departments go up exponentially.

Chapter 6

Growth

Personal growth at the workplace is a continuous process of self improvement, expanding knowledge, developing useful skills and focusing on enhancing ones professional abilities. It is about actively seeking opportunities to broaden ones horizons to advance in their career.

6.1 Settling into the Workplace

Prior to joining EDCL I did not have any experience regarding a workplace environment whatsoever. Also studying at a private organization to then joining a Government office had it's own revelations. But these are all experiences that helped me learn more about how an actual work force functioned which in turn lead me to learning more about how the real world actually functions.

Settling into the office was no easy task but being able make my own place to a point where I am now noticed by my superiors on a positive light is an accomplishment in itself.

6.2 Working in a Team Setting

The take on how teamwork works in a Government office is slightly different than how it is normally viewed. Rather than working with a group of capable people it is more about forming alliances. But regardless of any sort of set backs, being amicable to the members around in order to finish a project should be ones true motive.

6.3 Time Management

Working at a Government office for the past few months has taught me a great deal about proper time management, as regardless of how the office may function, working hours are strictly maintained here. It helps your settle into a fixed routine in day to day life. By adhering to these rules I was able to fix my sleep schedule as clocking in on time is a big part of any office. Also working diligently helps keep after office hours mostly free.

6.4 Technical Development

Since joining I have been able to gain experience about the technical aspects of things that up to that point I had only read about in books or in classrooms. So, finally being able to form a connection with the theoretical aspects to the actual thing was a great learning experience.

For example, after the initial few weeks of joining my supervisor had me accompany him to different departments in order to get me familiarize with the whole company's network and infrastructure. Physically witnessing all the switches, Hubs and internal wiring and how it all was being maintained taught me great deal about how things actually functioned as well as how the simplest of things can cause the greatest obstacles.

Also when the project is complete and we have taken final delivery of the module, there will be an official training period the main goal of which is to learn the inner workings of the module for inner maintenance and upkeep. The training will be conducted on company grounds and will be on Oracle APEX which the module is based on.

6.5 Interpersonal Development

Prior to joining EDCL I had a very rudimentary view on how an office functioned. Call it naivety on my part, but that view has since changed as now I have gained more knowledge as to how an office truly functions.

Up to this point I have faced enough challenges and setbacks which have taught me a great deal about the real world aspects of things. Which is why it would not be too bold of me to claim that working here has not only been a good opportunity for technical growth but it has helped me gain knowledge that far outweigh the technical aspect of things.

Chapter 7

Conclusion

The position I received at Essential Drugs Company Limited has been enlightening to say the least. The technical knowledge and awareness I have gained over the period of working here is quite invaluable to say the least. The opportunity of gaining knowledge through practical examples and approaches have played a pivotal role in my experience.

Whilst working there I gained new experiences about dealing with different challenges in multiple ways. Which has also helped me improve my instant and critical thinking abilities to a great deal.

Due to being a key part of such a big project for the company, I have also learned a great deal about project management. In addition to that, by conducting and taking part in multiple meetings with the departmental chief I have also learned a great deal about client-vendor management and negotiations.

One of the most significant takeaways from my experience till date has been the importance of being able to overcome hardships and push backs. Being a Government facility it is no secret that bureaucracy is deeply integrated within the system. But regardless of those restraints being able to work diligently to achieve ones goal is highly rewarding.

The mentorship and guidance I received from my supervisors were instrumental in my growth. Their insights and feedback have shaped my professional perspective and motivated me to strive for excellence. I believe this whole experience has better prepared me and has lead me to be more capable to advance towards my career goals in life.

If all goes well there is a high chance of this becoming a permanent position at the company in the recent future.

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