



An undergraduate Internship/project on
“Agro Management Software for Vai-Vai raw and feed supplier”

By

Syed Anwarul Haque Piash

Student ID: **1630444**

Supervisor

Subrata Kumar Dey

Senior Lecturer

Department of Computer Science and Engineering
Independent University Bangladesh

January 27, 2021

Dissertation submitted in partial fulfillment for the degree of Bachelor
of Science in Computer Science

Department of Computer Science & Engineering

Independent University, Bangladesh

Attestation

I am Syed Anwarul Haque Piash. I clarify that this report is done by me. I don't copy from anywhere. My advisor is Abdullah Munim for a period of three months helped me a lot for the project. I mentioned in the reference section which resource I used in the project.

I am very thankful of my internship supervisor Subrata Kumar Dey.

Sincerely

22/1/2021

Signature

Date

Write Your Name Here

Syed Anwarul Haque Piash_____

Name

Acknowledgment

During COVID-19 I am doing my internship under my honorable supervisor Mr. Subrata Kumar Dey. He is giving instruction about the internship report. It is very helpful for writing the report properly. In this pandemic I was very worried about the internship. I am very thankful to Invento Bangladesh. They give me opportunity for intern in their company. I am very thankful to my supervisor Mr. Abdullah Munim, IT Engineer of Invento Bangladesh and CEO Ashfaq Rahman. I am gathering my knowledge how I can work in team. My teammate is helping me a lot.

I am very thankful to my family member and my parents. They give me support to my study and internship.

Letter of Transmittal

Subrata Kumar Dey

Department Of Computer Science and Engineering

School Of Engineering and Computer Science

Independent University Bangladesh

Sub: **Agro Management Software for Vai-Vai raw and feed supplier**

Dear Sir, It is indeed a great pleasure for us to be able to hand over the result of our hardship of the internship report on Agro Management Software for Vai-Vai raw and feed supplier for Invento Bangladesh. This report is the result of the knowledge which has been acquired from the respective course. We tried our level best for preparing this report. The information of this report is mainly based on agro management software. All of us gave our hundred percent for making this report come together. We, fervently hope that you will find this plan worth reading. Please feel free for any query or clarification that you would like us to explain. Hope you will appreciate our hard work and excuse the minor errors. Thanking you for your cooperation.

Sincerely yours,

Syed Anwarul Haque Piash

ID: 1630444

Abstract

The internship topic has been provided by Invento Bangladesh. They are working a project for a agro firm. They are making a software for this agro firm. The firm is situated in Naogoan. They make food for fish, cow, cock and duck and they serve it to other firm. They have many worker. Some worker are permanent and some are seasonal. They manage their firm in manually. But it is very difficult to manage the system via manual. So they want to make a software for their firm. The software has many features. It calculate the salary of the employee and calculate all the product which is made by them. The software also calculate which product they sell to other companies.

It will web and desktop app. The software based on rural based area. The software saved money and time because manually management system is very difficult. The software help the employee to work easily. The software is very helpful for the agro firm.

Contents

Attestation.....	2
Acknowledgment.....	3
Chapter 1	10
Introduction	10
1.1 Background.....	10
1.2 Scope.....	11
1.3 Out of Scope:	11
Chapter 2	12
Company Profile	12
2.1 Introduction.....	12
2.2 Mission, vision and goals.....	13
2.3 Products and services	13
Chapter 3	14
Literature Review	14
3.1: Introduction.....	14
3.2.1: Global Market	14
3.2.2 Local Market.....	15
Chapter 4	17
Project management and financing	17
4.1 Work-Breakdown Structure	17
4.3 Gantt chart	18
4.4 Resource Allocation	19
4.5 Estimated Costing	21
Chapter 5	22
Methodology	22
5.1 Software Development Life Cycle.....	22
5.2 Why we use agile development method	23
5.3 Agile Implementation	23
Body of the Project	24

6.2 Customer Requirement Analysis	24
6.2.1 Prototype Testing	25
6.2.2 Surveys	25
6.2.3 Document Analysis	25
6.2.4 Gathering from the analysis	25
6.3 System Analysis	27
6.3.1 Six Element Analysis	27
6.3.2 Feasibility Study	28
6.3.3 Problem Solution Analysis	30
6.3.4 Effect and Constraints Analysis	31
6.4 System Design.....	31
6.4.1 Introduction	31
6.4.2 Entity Relationship Diagram	32
6.4.3 UML Diagram	33
6.4.4 Functional and Non -Functional Requirements	37
6.5 Product Features	38
6.5.1 Input	38
6.5.2 Output	39
6.6 Architecture.....	40
Chapter 7	41
Result and Analysis	41
7.1 Result	41
7.2 Testing.....	41
7.3 Testing Strategies	41
Chapter 8	43
Project as Engineering Problem Analysis	43
8.1 Sustainability of the Project/Work	43
8.2 Social and Environmental Effects and Analysis	43
8.3 Addressing Ethics and Ethical Issues.....	44
Chapter 9	45
Future Works and Conclusion	45
9.1 Future Works	45

9.2 Conclusion	45
Reference	46

Table of Figures

Figure 1: Work-Breakdown Structure	17
Figure 2: Gantt Chart.....	19
Figure 3: Entity Relationship Diagram	32
Figure 4: Activity Diagram for Admin	34
Figure 5: Activity Diagram For Employee	35
Figure 6: Activity Diagram for Customers.....	36

Chapter 1

Introduction

The present age is the age of information technology. Now all of the office and industries are using software for their management system. The internet is available all over the world. The software is based on internet. Internet is most essential for the people. The people can use internet easily. The software relieves human suffering. The big or small organization are using software for their business or office. In the agro firm software is very essential. They have many worker and employee. So it is very difficult to manage manually. Internet application is very popular all over the world.

1.1 Background

During pandemic the world suffering a lot. Our software is for a agro firm. The agro firm manage their system manually. So they want to make a software.

The software has admin panel and user panel. They can login and logout to the software. There are about form, sign in form, login form, logout form. In about form they have some information's about the agro firm. In sign in form there are 2 options login admin and login user.

In login form there are admin panel and user panel. Admin panel can only change the management of the software. They can make salary for the employee and worker. User panel will calculate the product which they sell to other company. The customer can see the product and order the product.

If the software had some problem Invento Bangladesh give their support. We fix the problem as soon as possible.

1.2 Scope

- Login of the software.
- Add employee and worker.
- View sell product.
- View production
- Generating salary
- Logout

1.3 Out of Scope:

- Internet connection in rural areas.
- Training to the employee.

Chapter 2

Company Profile

2.1 Introduction

Invento Software Limited have started their journey in 2013. We design and build custom software's, web applications, Mobile applications and custom E-commerce solutions. Our ERP solution and Retail POS system has 100+implementation all over Bangladesh. We have a strong and dedicated team of software developers, IT specialists and digital marketing experts and branding experts, design geeks. Our digital team is working for more than 5 years in respective field and already launched so many successful campaigns which includes launching and managing digital competition for international organizations, launching consumer products, launching and promoting multiple international hospitality brands, branding and promoting international RMG brands in global events and news mediums, executing several content marketing campaigns for various brands etc.

Invento Software Limited strongly familiar with modern technologies and software. They are very sincere about their service and client. They want to give proper service to their client.

2.2 Mission, vision and goals

Invento Software Limited Vision and Mission both are inspiring our employees to accomplish goal. To grow current position and get a larger market as well as to provide the simple IT solutions to client. We understand the client's requirement, analyze it and provide the best IT solutions. We satisfy our clients by our services and implements it with more effective software solution strategies. Our Vision is to be a leading Web Solution company in IT sector and progress in our current position in market. We know that Customer's growth is our growth, so we commit our customers to help in achieving their business goals. We believe in work with the accuracy and best quality. We want to be known as the reliable, innovative and user friendly software service provider in IT industry.

2.3 Products and services

Web Application

Mobile Application

POS (Point Of Sale) system

ERP system

Chapter 3

Literature Review

3.1: Introduction

A literature review is a summary of studies related to a particular area of research. It identifies and summarizes all the relevant research conducted on a particular topic. It is important that your literature review is focused. Therefore, you should choose a limited number of studies that are central to your topic rather than trying to collect a wide range of studies that might not be closely connected.

3.2: Market Analysis

Now a day's software is essential for all organization. In agro farm the software is very popular. Maximum agro firm is using software for their management. Globally it is very popular now. Now a day's tech is advancing day by day. Governments of various countries are extending support to farmers to implement the technology to enhance productivity. Increasing use of virtual fences is expected to aid the farm management software market growth.

3.2.1: Global Market

Worldwide deployment of farm management software is trending at rapid pace. The software is extensively utilized for planning, monitoring, and analyzing every farm activities. Some of the well-

known farm activities analyzed by the software are harvesting, crop protection, planting, irrigation, fertilization, and tillage, among others. The farm management software market is segmented on the basis of agriculture type, delivery model, service provider, application, and region. Based on agriculture type, the market is majorly classified into smart greenhouse farming, precision farming, fish farming, livestock farming, and others. Livestock farming segment is estimated to register notable growth rate during forecast time frame. Forestry, horticulture and orchid are included in others segment of the market. Delivery model segment of the market include cloud based, and local/web based. Platform as a service, and Software as a service together are sub-segments of cloud-based solutions. Services provider segment is further categorized into maintenance, up gradation, and support services, and assisted professional services. Farm management software is implied for diversified applications such as livestock monitoring applications, precision farming applications, smart greenhouse applications, fish farming applications, and others.

3.2.2 Local Market

There are many agro farm in Bangladesh. They are using software for their system. I find out some companies.

- **Basicgroupbd.com** - Basic Agro Farm Ltd. to produce quality agricultural products based agro farm in Bangladesh, using improved production, value addition and marketing innovations for multiple benefits. They have dairy farm, fisheries, poultry farm and others.
- **Assuregroupbd.com** - Other agro based business units include seed business, feed mill and a fish project. The agribusiness wing is experiencing gradual expansion due to our robust efforts in taking it to the next level.
- **Agagro.com** – They produce milk, premium quality Poultry feed, Fish feed, Cattle Feed and Day Old Chicks (DOC). The product brand name of AG Agro Industries Ltd.

Chapter 4

Project management and financing

Project management is very essential in software development. For a better project we need proper planning. We should think about planning and budget.

4.1 Work-Breakdown Structure

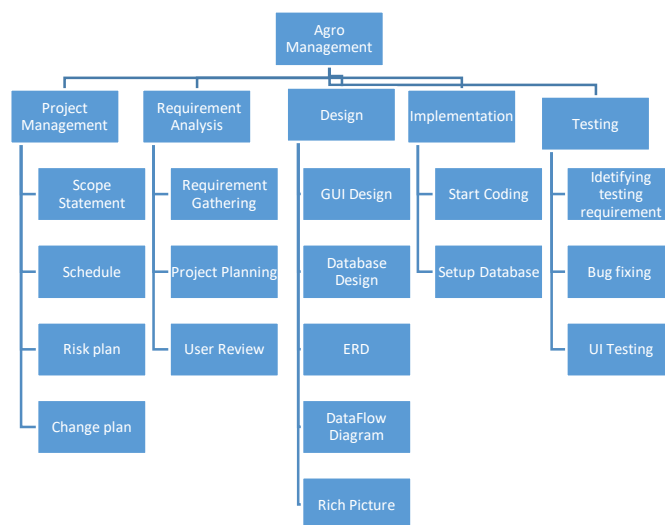


Figure 1: Work-Breakdown Structure

Figure 4.1 Work-Breakdown Structure (WRS)

Time distribution defines the time required to end the project successfully. The Gantt chart shows how much time needed to end the project successfully. It helps the developer create a planning and mind map and estimate how much time to end the project successfully.

4.3 Gantt chart

A Gantt chart is a project management tool assisting in the planning and scheduling of projects of all sizes, although they are particularly useful for simplifying complex projects. Project management timelines and tasks are converted into a horizontal bar chart, showing start and end dates, as well as dependencies, scheduling and deadlines, including how much of the task is completed per stage and who is the task owner.

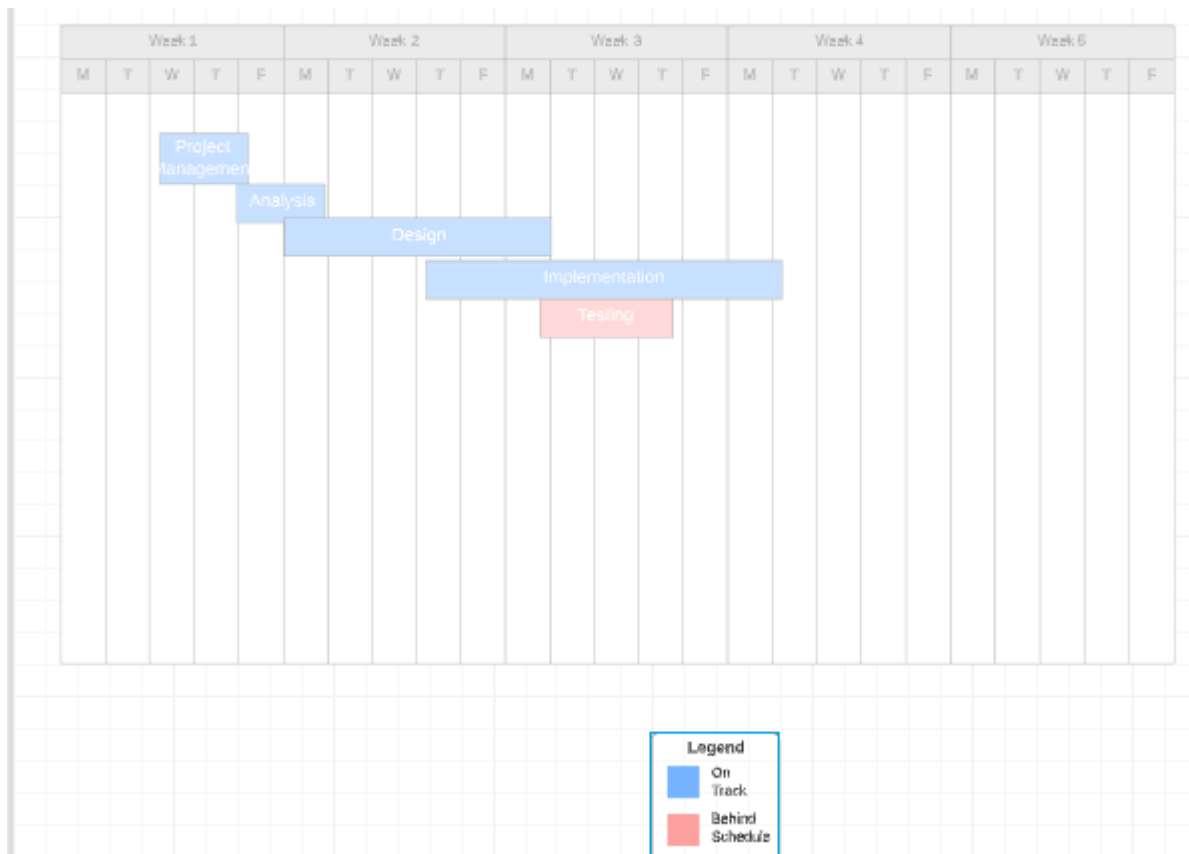


Figure 2: Gantt Chart

Figure 4.2 Gantt Chart

4.4 Resource Allocation

The agro management software is used by the users. Resource allocation is very important for us. Our primary resource for the project are our developers and then computer, internet, server, agricultural equipment's and chair/table. During COVID-19 employees are working from home so team meeting is very important. Following are the details of every step of the project.

1. Project Management

A Software Project is the complete procedure of software development from requirement gathering to testing and maintenance, carried out according to the execution methodologies, in a specified period of time to achieve intended software product. Software project management is an art and discipline of planning and supervising software projects. In software Project Management, the client and the developers need to know the length, period and cost of the project.

2. Requirement Analysis

In requirement analysis we need to specified computer hardware, internet, server, employee needed and features. A team will select it.

3. Design

We need to design UI for the software and other features. We need to design database, ERD and rich picture.

5. Testing

Testing is very important for a software development. Software has some error and bug. The errors are being fixed and also developing new features in the application.

4.5 Estimated Costing

Requirements	Quantity	Amount
Computers	6	150000
Domain	1	10000
Desks	6	12000
Electric Bill(4 months)	1	35000
Internet Bill(4 months)	1	4000
Total		211000

Table 3.1 : Cost Estimation table

Chapter 5

Methodology

5.1 Software Development Life Cycle

Software Development Life Cycle is the application of standard business practices to building software applications. It's typically divided into six to eight steps: planning, requirements, design, build, document, test, deploy, maintain. Some project managers will combine, split, or omit steps, depending on the project's scope. These are the core components recommended for all software development projects. There are some software development method.

- **Agile development method**
- **Waterfall development method**
- **Rapid action development method**

For our application agile development method is suitable. Agile processes generally promote a disciplined project management process that encourages frequent inspection and adaptation, a leadership philosophy that encourages teamwork. It encourages flexible responses to change.

5.2 Why we use agile development method

Agile is a powerful tool for software development. It not only provides process and efficiency benefits to the development team, but also a number of important business benefits to the organization as a whole. Agile helps product teams deal with many of the most common project pitfalls in a more controlled manner.

By reorganizing and re-envisioning the activities involved in custom software development, Agile achieves those same objectives in a leaner and more business-focused way. We use agile for early delivery, good planning, reduce risk and increase customer satisfaction.

5.3 Agile Implementation

The agile method make sure how the development team divide all work according to daily basis. Every day the implemented some of the coding section and meet each other. They make sure they implemented daily work and meeting with management team. If any changes needed they change it immediately.

Chapter 6

Body of the Project

6.1 Work Description

As a part of the project I had to contribute in front end developing. I am doing design part of the project. The system is developed by react JS, JavaScript and node JS. Every day I try to complete my target and problem solve.

6.2 Customer Requirement Analysis

The system will be made for users. The system should be user friendly and helpful for the customer. Customer requirements analysis encompasses those tasks that go into determining the needs or conditions to meet for a new or altered product or project, taking account of the possibly conflicting requirements of the various stakeholders, analyzing, and documenting, validating and managing software.

For the requirements the developer will use

6.2.1 Prototype Testing

6.2.2 Surveys

6.2.3 Document Analysis

6.2.1 Prototype Testing

Prototype testing is designed for customer. The customer will tested, reviewed and approved the system. After that coding, testing and maintenance will start. The prepare will based on customer requirements. Prototype testing will check which components are present or not.

6.2.2 Surveys

At first we should make a survey questionnaires for the customer. What they want and expect from the software. Now a day's software is very popular in every field. The agro management software used by employee and the worker. So it will be user friendly.

6.2.3 Document Analysis

The document usually makes it clear who is the user of the software. The software is used by employee and customer. This report has been made earlier is very helpful and avoid the mistakes.

6.2.4 Gathering from the analysis

Agro management software is very popular now a days. During pandemic many people work from home. So software is very important. The users of the software are employees and customer.

Employee

- Login
- Check the order
- Check salary
- Receive order from customer
- Deliver order to customer
- Logout

Customer

- Find the product
- Check price
- Order product
- Receive Product

Admin

- Change password and delete account
- Right for delete account.
- Create new account

6.3 System Analysis

6.3.1 Six Element Analysis

Process	Human	Non Hardware	Hardware(computing)	Software	Database	Communication Network
Login	Enter email id and password		Computer, Keyboard, Mouse	Chrome, Mozilla, Microsoft Edge etc.	Stores email id and password	Internet
Find Product	See all the products		Computer, Keyboard, Mouse	Chrome, Mozilla, Microsoft Edge etc.	Stores data in database	Internet
Order	User click to the		Computer, Keyboard, Mouse	Chrome, Mozilla	Stores applied data	Internet

Prod uct	specific product			a, Micros oft Edge etc.	in datab ase	
Recei ve Prod uct	User go to check the confirma tion		Computer, Keyboard, Mouse	Chrom e, Mozill a, Micros oft Edge etc.	Stores in datab ase	Internet

Table 6.1: Six Element Analysis Table

6.3.2 Feasibility Study

Feasibility study is the feasibility analysis or it is a measure of the software product in terms of how much beneficial product development will be for the organization in a practical point of view. Feasibility study is carried out based on many purposes to analyze

whether software product will be right in terms of development, implantation, contribution of project to the organization etc.

Types of feasibility Study

The feasibility study mainly concentrates on bellow five mentioned areas.

Analysis and Legal Among these Economic Feasibility Study is most important part of the feasibility .Feasibility Study is less considered feasibility analysis.

- **Technical Feasibility**

In Technical Feasibility current resources both hardware software along with required technology are analyzed/assessed to develop project. This technical feasibility study gives report whether there exists correct required resources and technologies which will be used for project development. Along with this, feasibility study also analyzes technical skills and capabilities of technical team, existing technology can be used or not, maintenance and up-gradation is easy or not for chosen technology etc.

- **Operational Feasibility**

In Operational Feasibility degree of providing service to requirements is analyzed along with how much easy product will

be to operate and maintenance after deployment. Along with this other operational scopes are determining usability of product, Determining suggested solution by software development team is acceptable or not etc.

- **Economic Feasibility**

In Economic Feasibility study cost and benefit of the project is analyzed. Means under this feasibility study a detail analysis is carried out what will be cost of the project for development which includes all required cost for final development like hardware and software resource required, design and development cost and operational cost.

6.3.3 Problem Solution Analysis

Problem analysis is the process of defining the problem of the existing system to be solved. The system can be face many problem in designing and coding. Problem solving identifies those problem which should be solved. Problem solving minimize the problem of the system. It improving the system as soon as possible.

6.3.4 Effect and Constraints Analysis

Constraint is a limitation of the development. Constraint can be economic, political, schedule, technical and others. It is very effective for the development.

Some effect are given below:

Constraint 1: Budget

Effect: Budget is very important for a project. How many employees for the project and how many employees hired for the project to complete the task successfully.

Constraint 2: Time

Effect: Time depends on the budget of the project. How many time needs for complete the project.

6.4 System Design

6.4.1 Introduction

Designing is very important in software development. Invento Bangladesh is careful about design. The design had to be changed and

reconstruct while facing many changes in the system. There are few steps that are needed to be followed in the development.

6.4.2 Entity Relationship Diagram

Entity Relationship Diagram, also known as ERD, ER Diagram or ER model, is a type of structural diagram for use in database design. An ERD contains different symbols and connectors that visualize two important information: The major entities within the system scope, and the inter-relationships among these entities.

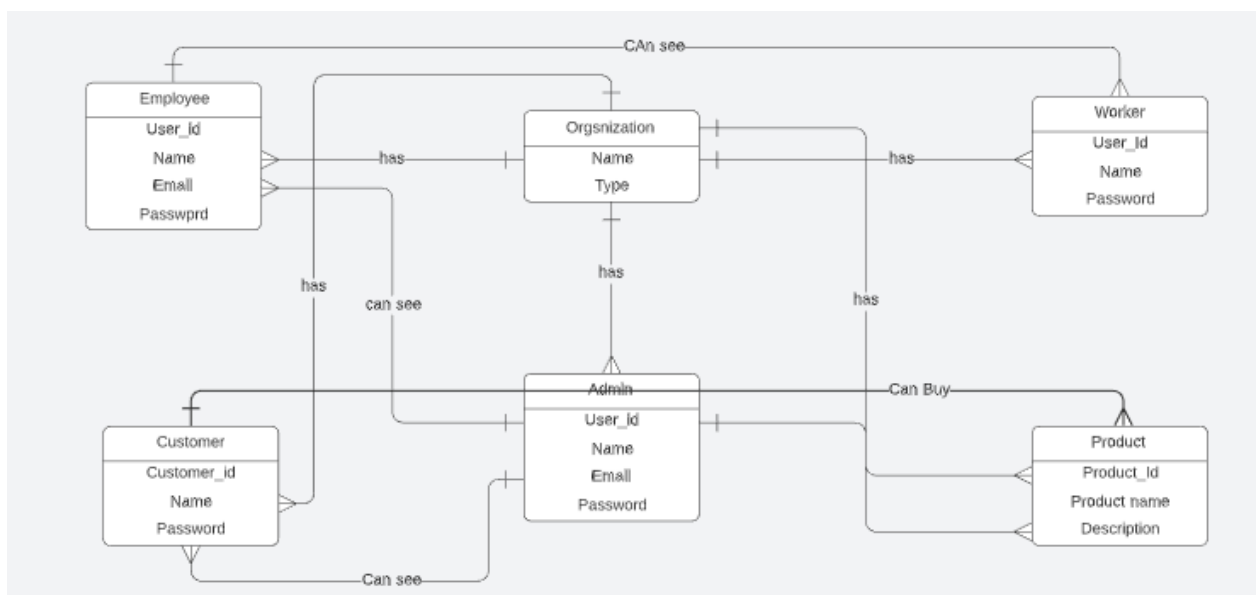


Figure 3: Entity Relationship Diagram

Figure 6.1 Entity Relationship Diagram

6.4.3 UML Diagram

UML stands for Unified Modeling Language. It's a rich language to model software solutions, application structures, system behavior and business processes. It is a visually represent a system along with its main actor, roles, action to better understand.

In this diagram we tried to explain the role of employee and customer. It is the interaction of both. In this diagram we can see many activity diagram.

1. Activity Diagram for admin

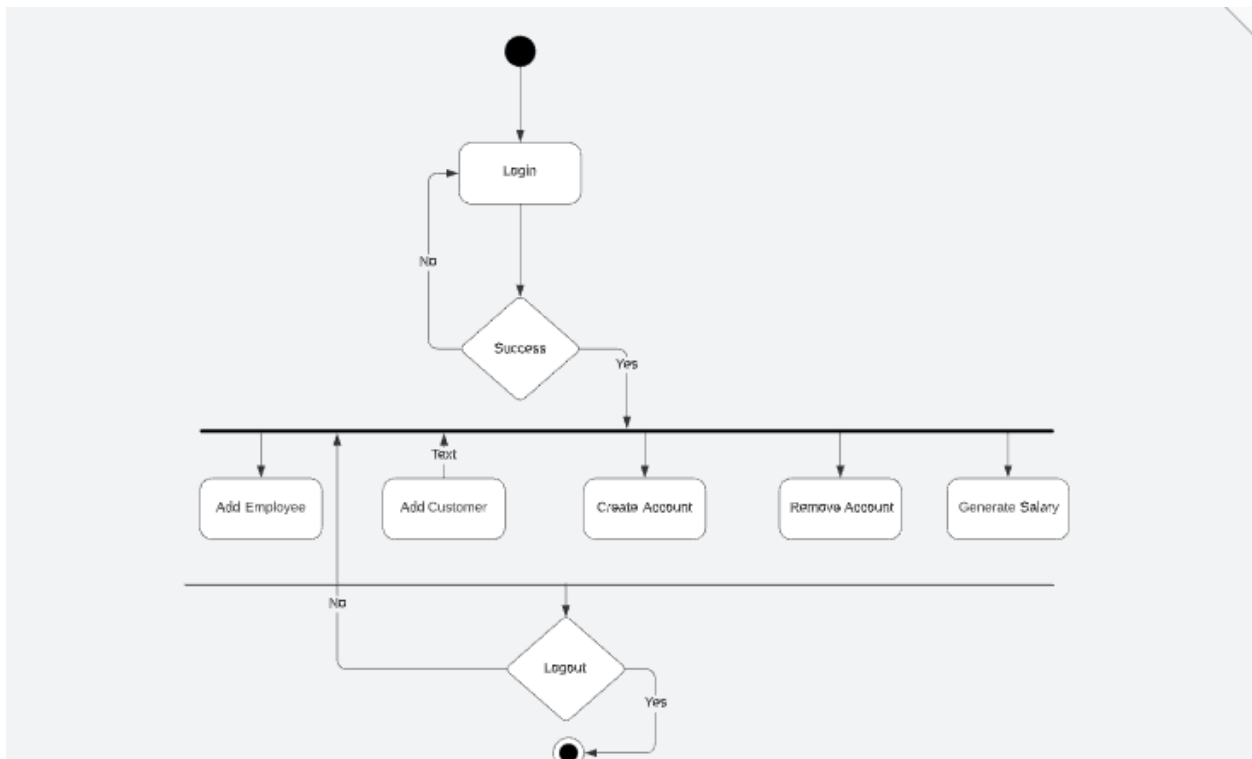


Figure 4: Activity Diagram for Admin

Figure 6.2 Activity diagram for admin

2. Activity Diagram for employee

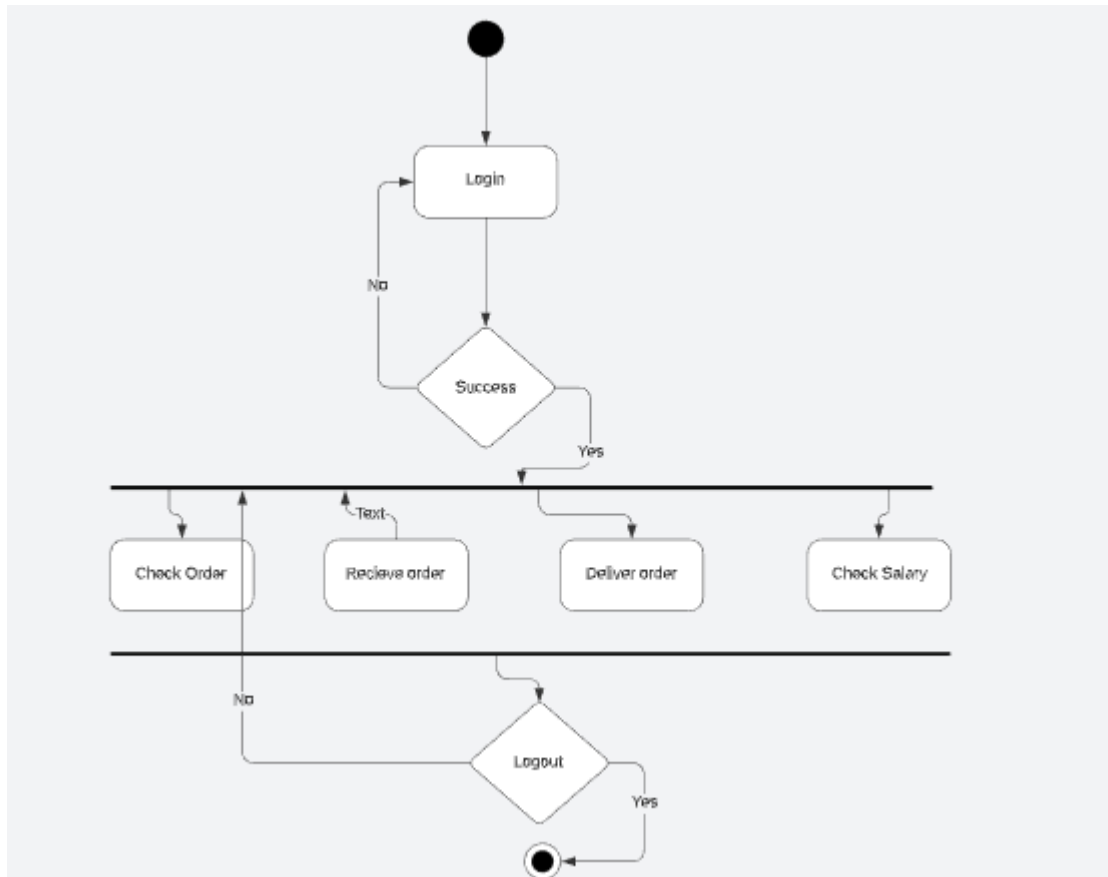


Figure 5: Activity Diagram For Employee

Figure 6.3 Activity Diagram for employee

3. Activity Diagram for customer

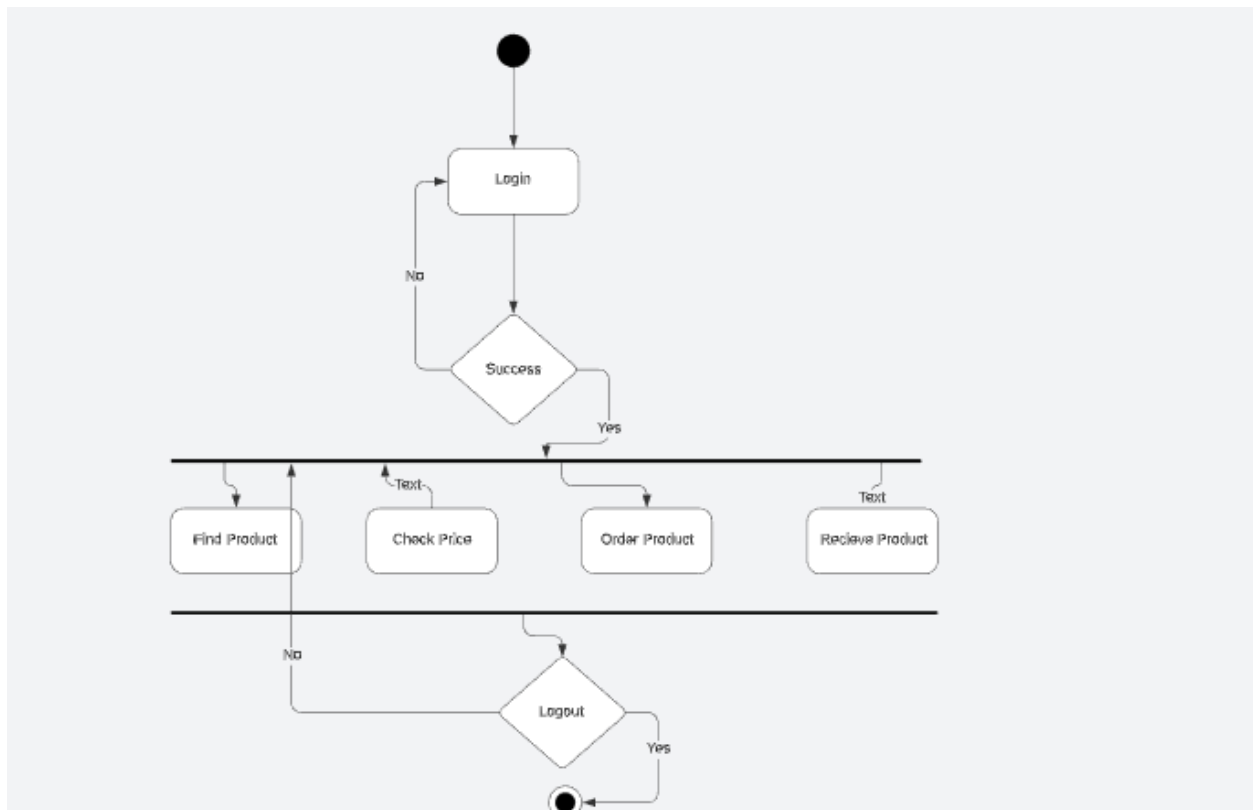


Figure 6: Activity Diagram for Customers

Figure 6.4 Activity Diagram for customer

6.4.4 Functional and Non -Functional Requirements

A functional requirement defines a system or its component. It describes the functions a software must perform. A function is nothing but inputs, its behavior, and outputs.

A non-functional requirement defines the quality attribute of a software system. They represent a set of standards used to judge the specific operation of a system.

Functional Requirements:

- When the users enters their information, their login id, the system reply the system. If it corrects it sends to approval.
- In dashboard there are some products and they can order products.
- In every purchase they got a confirmation massage.
- The users can logout from the system.

Non-Functional Requirements:

- When the users enters their login id the database receives the confirmation and save it.
- The system confirm their registration within 5 minutes via mail.

- The data saved must be in pdf.

6.5 Product Features

Login: The users must be login to the system. They would verification with email.

Confirm Order: The users can see which product is available and they can purchase the product.

Record Information: The database will record all the user data, product list, sell product, order product which can be viewed by admin.

6.5.1 Input

Process	Type
Login	ID- String Password-String
Product	Product Name- String Product ID- String Product Type- String

Order Product	Product Name- String Product ID- String Order Date- Date
Product Price	Product Name- String Product ID- String Price- Int

Table 6.2 Input Table

6.5.2 Output

Process	Output
Login	Success- Login Successful Failure- Try Again
Product	Success-All product Failure- Try Again
Order Product	Success- Order Successfully

	Failure- Try Again
Product Price	Success-Buy 100 taka Failure- Try Again
Deliver Order	Success- Order delivered Failure- try Again
Receive Order	Success- Please receive your order Failure- Try Again

Table 6.3 Output Table

6.6 Architecture

For Develop the system we use HTML, CSS and JavaScript. For website develop JavaScript is a very popular language. HTML, CSS and JavaScript make a website very responsive. React JS is using for front end and node JS is using for backend. For database MYSQL is using.

Chapter 7

Result and Analysis

7.1 Result

Now a days the world is fully depended on internet or software. The agriculture is also depended on technology.

The employee and the customer are the main user of the software. They are comfortable about the application. The application is user friendly and responsive. They can manage their business very easy way. They can minimize their time and money. The organization ensure good product for the customer.

7.2 Testing

Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not.

Testing is executing a system in order to identify any gaps, errors, or missing requirements in contrary to the actual requirements.

7.3 Testing Strategies

The strategies are given below:

- Before testing starts, it's necessary to identify and specify the requirements of the product in a quantifiable manner.
- Specifying the objectives of testing in a clear and detailed manner.
- Developing a test plan to give value and focus on rapid-cycle testing.
- Before testing, using effective formal reviews as a filter.

Chapter 8

Project as Engineering Problem Analysis

8.1 Sustainability of the Project/Work

The user of the project are the employee and customer. The customer can see all of the product from the application. They don't come to the company. During pandemic it is very helpful. They can order and receive product from the application. The employee communicate with customer in very easy way.

8.2 Social and Environmental Effects and Analysis

In Bangladesh agro management software is very popular now a days. Rural areas people also can use the software. The people of rural areas are being modern and used to with internet.

Online software has a positive effect on the environment. The employees are working from home during pandemic and they use less vehicle and less carbon release. Less paper, pen and bottle are waste. So it is very helpful for environment.

8.3 Addressing Ethics and Ethical Issues

There are some ethics in the project. The application makes sure that the password choose by user and they can login only their account. A lot of user use this system. So privacy is very important. Another issue is the price which products are uploaded to the application. Make sure the price is logical which compatible to the market.

Chapter 9

Future Works and Conclusion

9.1 Future Works

This current application is just for web. Web application is very popular now a days. The company is using the software for selling their product to their customer. In the future all of the company has target to make an application for their organization.

9.2 Conclusion

The report is based on agro management software and made by Invento Bangladesh. The project will be incomplete during the creation of the report. There are some details of functional level and design. The report also explain design, method and sustainability of the project.

During the internship period I have learnt many things. How the software company works in the real world. How can works in real competitive world. In 3 months internship hopefully I will start my carrier as a developer.

Reference

1. Papajorgji, Petraq J., Pardalos, Panos (2006). Software Engineering Techniques Applied to Agricultural Systems
2. Pavel Kukhnabets (2019). Agile methodologies
3. Gilbert Silbius (2012) Sustainability of project management
4. Jo Duckett. HTML, CSS, JavaScript and JQuery.

