DECLARATION

I hereby certify that this project report and all the artifacts associated with it is my own work and it has not been submitted before nor is currently being submitted for any other degree programme.

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1. CHAPTER 1 – INTRODUCTION

1.1 Introduction to the organization

<div align="center">Central Engineering Consultancy Bureau (CECB)</div>

The Central Engineering Consultancy Bureau (CECB) is the foremost engineering consultancy services provider in Sri Lanka today. Multi-disciplinary in function, futuristic in approach and above all gifted with a team of a inspired professional yearning to go beyond.

CECB was established as a fully owned State Enterprise by the Government of Sri Lanka in 1973. Presently it is attached to the Ministry of Mahaweli Development Environment. It has been operating as a self-financed Government Corporation since inception and primarily involved in providing Engineering Consultancy, Constructions and related services. Their clients include both public and private institutions. Since 2016, construction services are undertaken by the fully owned subsidiary Central Engineering Services (PVT) Limited(CESL). They have provided services internationally and have worked in Maldives, India, East Africa and UK. Today they have a total staff strength of 1100 of which nearly 900 are technical grades.

Anuradhapura branch is a main regional office of CECB. The head office of Anuradhapura branch is situated in Puliyankulama. On these days there are about 8 projects related to Anuradhapura branch. For every project they have several site offices in each site. There are team of middle level managers and labours belonging to every site office. Head office manage all the sites which are related to them.

1.2 Introduction to the existing system

When a branch received a project from head office, branch manager campaign to send relevant employees and staff to the related site. Then the quantity server of the site creates a list of requirements which includes all the things that site want to finish the project. Quantity server send that list to inventory manager of the branch. Under his sanction store keeper check whether the availability of goods. If goods are available store keeper let off inventory to the site. If not they inform branch manager and he campaign to supply those goods by tendering. Suppliers buy tenders and they send goods and their bills to store

keeper. After receiving of goods store keeper let off goods to the relevant site and relevant bills of suppliers to the account department of the branch. If there is a surplus of goods after finished the site manager resend the goods to the store.

1.3 Problems of Existing System

This is about problems and weaknesses about the existing Inventory management system.

- Not having good security

    If a company is using a manual system that means they have to do lots of works with papers. So directly there is a problem with the security. Not only from people. Evan animals can destroy the papers and there will be some lost documents because of people behavior like forgetfulness.

- More time consuming

    Current computer system of the organization is on trial. Therefore It has not specialized components to inventory management. So most of tasks in inventory management is going on manually. Doing manual tasks are more time consuming and full of errors. If any error is happened it is error to find and fix. If some error happened it is very hard to find where the error is happened. Also if the error is founded, It has to do whole particular process again.

- More complicated

    The existing system is not 100% computerized. Some tasks are have to be done manually. Do some works in manually and then those data also want to computerized system. So this is more complicated. Therefore system should be totally computerized.

    The management is not satisfied with the existing system. At the moment they are doing a small scale business. But with the growth of the company it will be harder to use existing system. System should be more efficient and user-friendly. But at the moment it is not.

- Hard to find details

    Some Details cannot get immediately from documents. Also using both manual and computerizes system is makes less accurate.

1.4 Aims and Objective of the Project

- To use the knowledge that have gained so far on the areas of Industrial Management such as System analysis and Design Methodology and Management Information System, Database Management System, Visual Programming, to identify and overcome the weaknesses of this business organization and introduce new management practices to the organization.
- Introduce new software to the existing manual system which saves both the time and the money of the organization that waste unnecessarily.
- Improve the speed of Information Processing within the company.
- Improve efficiency and effectiveness.
- Make the existing system user-friendly.
- Reduce paper works workload of an employee
- Prepare necessary reports for the managers.
- Improve the accuracy of the work.
- Operate the company with a minimum number of staff.

1.5 Overview of Chapters

- Chapter 2 includes the analysis of the existing system. To describe the existing system it uses graphical software called "Select Case Tool" under the concepts of "Structured System Analysis & Design Methodologies". There, business activity model, context diagram, document flow diagram, data flow diagrams (level 1, level 2, and level 3) and the logical data structure have drawn. In this chapter it identifies different user requirements and business system options (BSOs).
- Chapter 3 includes the system design. In this chapter it is decided how the system will operate, in terms of the hardware, software, and network infrastructure; semi-formal graphical software Process models, the user interface, forms, and reports that will be used; and the specific programs, databases, and files that will be needed. This consists

of five major parts. They are Architectural design, Database design, GUI design, Program design, and Report design

- Chapter 4 includes the Implementation part. This chapter consists of some partial codes of program which are used in developing the system and mainly Data structures and Algorithms that are used to handle data.

- Chapter 5 is the Testing. After developing the system it should be clearly identified that errors occurring in the actual usage. If we do not do so, the implementation will harm the organization. There are some testing methodologies to do so. Having using and testing all these things, feedback from the user will be taken.

- Chapter 6: Discussion and Conclusion. This chapter discusses about the limitations of the current project and recommends for the further works to modify this project.

2. CHAPTER 2 – SYSTEM ANALYSIS

This chapter includes the analysis of the existing system by using diagrams. There is a relationship between each event of the process. In here identifies the user requirements and then selects the most suitable business system options. By considering significance of organization's technical capability and financial potential selected most suitable Business System Option (BSO) will discussed in finally.

2.1 Analyze of the Existing System

2.1.1 Natural Language Description with Semi Formal Graphical Software Process Models

2.1.1.1 Business activity model

In Business Activity Model it should show what the organization is doing in the system environment and also about the relationships between the external entities and the system. Actually, this model provides a conceptual model. From that we gen get clear understand what the organization is doing and we can identify the processes which can be automated or processes which can be developed. System boundary is used to represent the activities which are handled using the system.

Following business activity model shows the all activities of central engineering consultancy bureau which start from a customer tender a project to finally hand over the project to the customer.

Figure 1: Business Activity Model

2.1.1.2 Document flow diagram

Document flow diagram indicate the all the internal and external entities that related to the system. Actually, document flow diagram uses to model the flow of documentation between external entities.
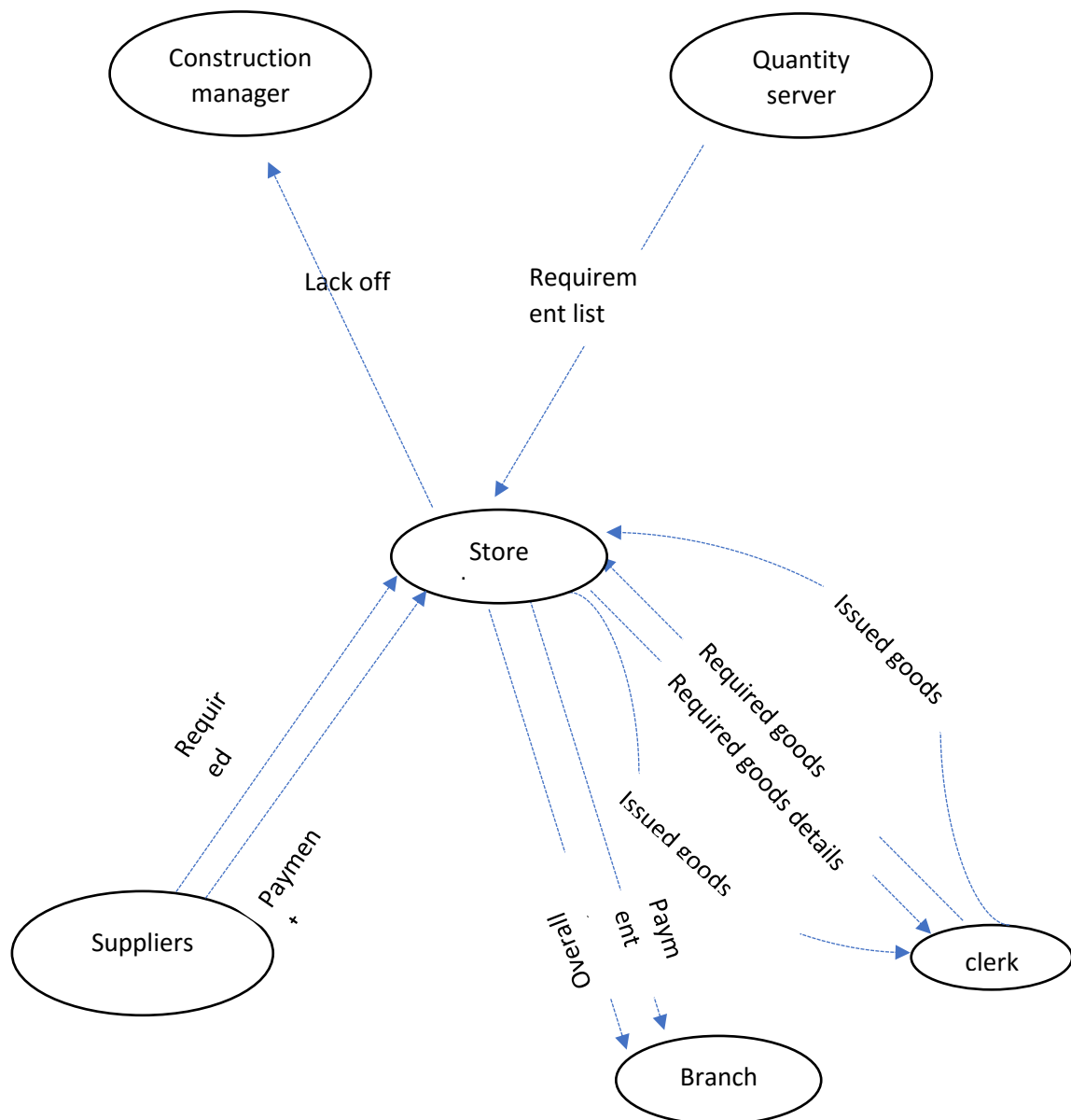
Figure 2: Document Flow Diagram

2.1.1.3 Context diagram

In the context diagram it is directly shows the relationships between the external entities and the system. We can get that context diagram defines the boundary system and its environment, showing the entities that interact with it. From the customer orders the order to receive the order all relationships are contained in here.
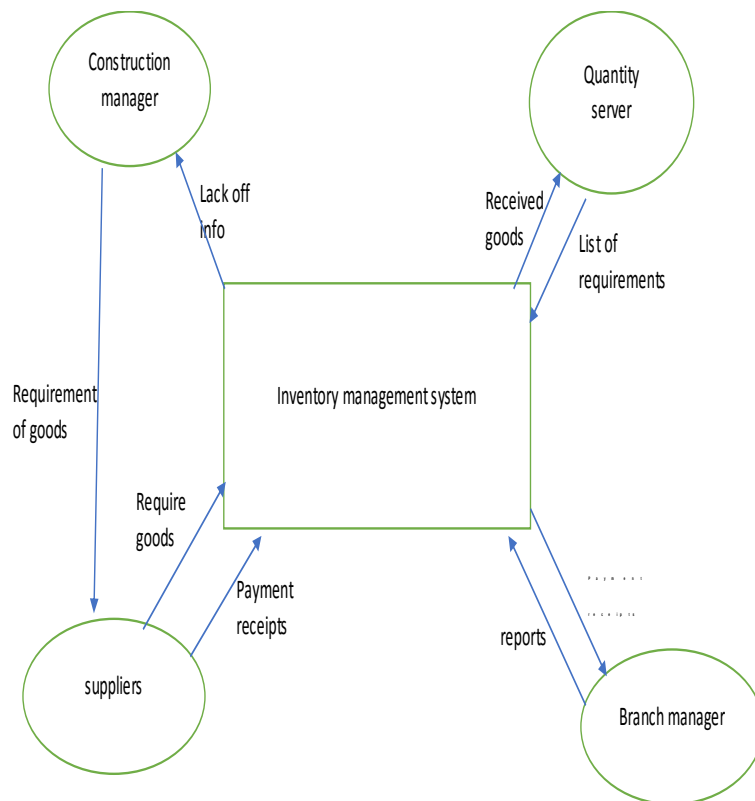
Figure 3: Context Diagram

2.1.1.4 Data flow diagram

2.1.1.4.1   Data flow diagram – level 1

Data flow diagram is a main diagram to investigate about the system. Divide the system to parts and then we can get understand how the external entities set in to the system and how the data stored in the system. In this case they are using few computerized data bases and

seven manual data stores. The level 1 diagram is surrounded by the outline of a process box that represents the boundaries of the system. Because the level 1 diagram depicts the whole of the system under investigation, it can be difficult to know where to start.
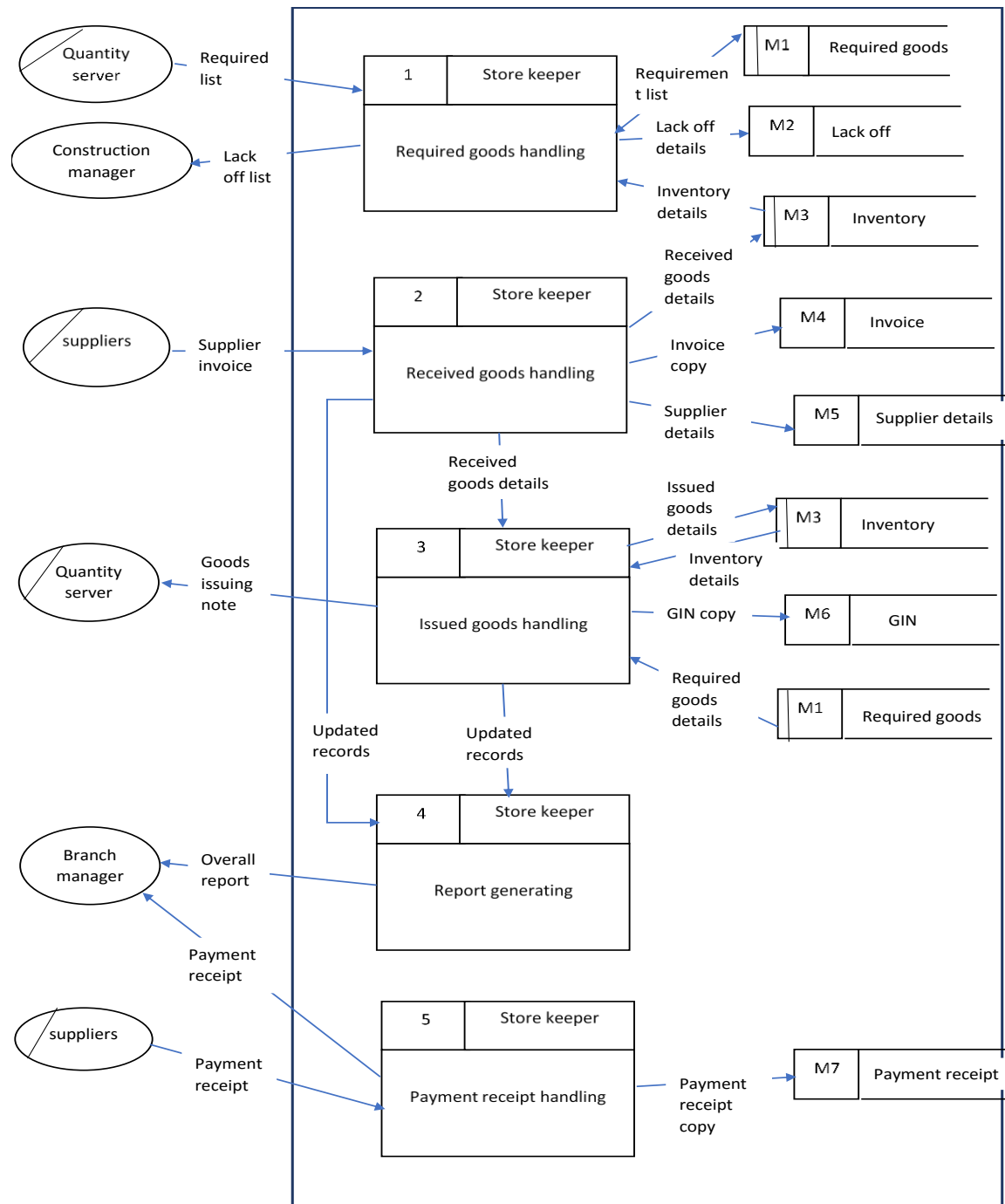
Figure 4: Data Flow Diagram – Level 1

2.1.1.4.2   Data flow diagram – level 2

In Level 2 data flow diagram it describes how the main four processes divide again and how those child entities use other external, internal entities and data stores.
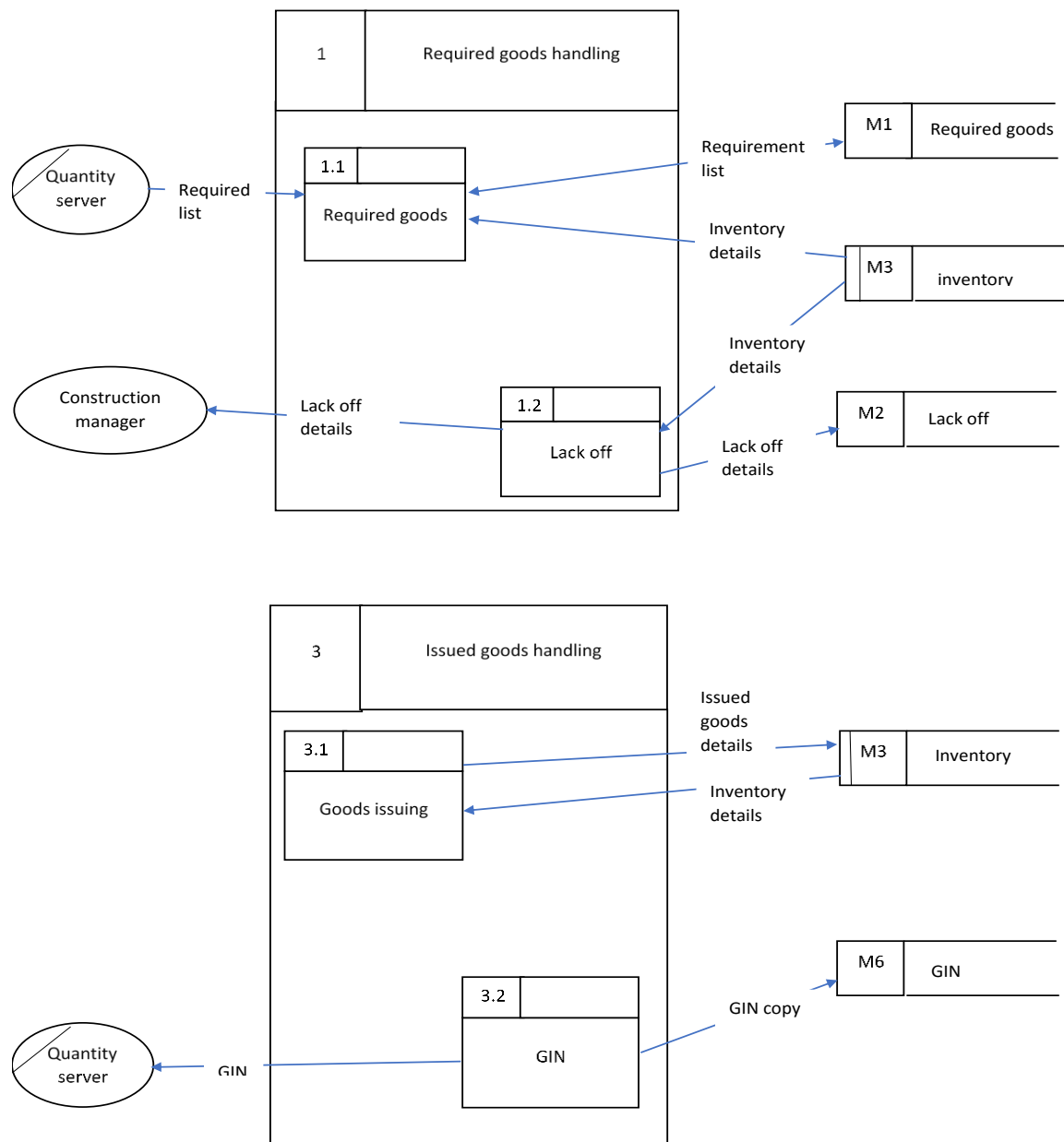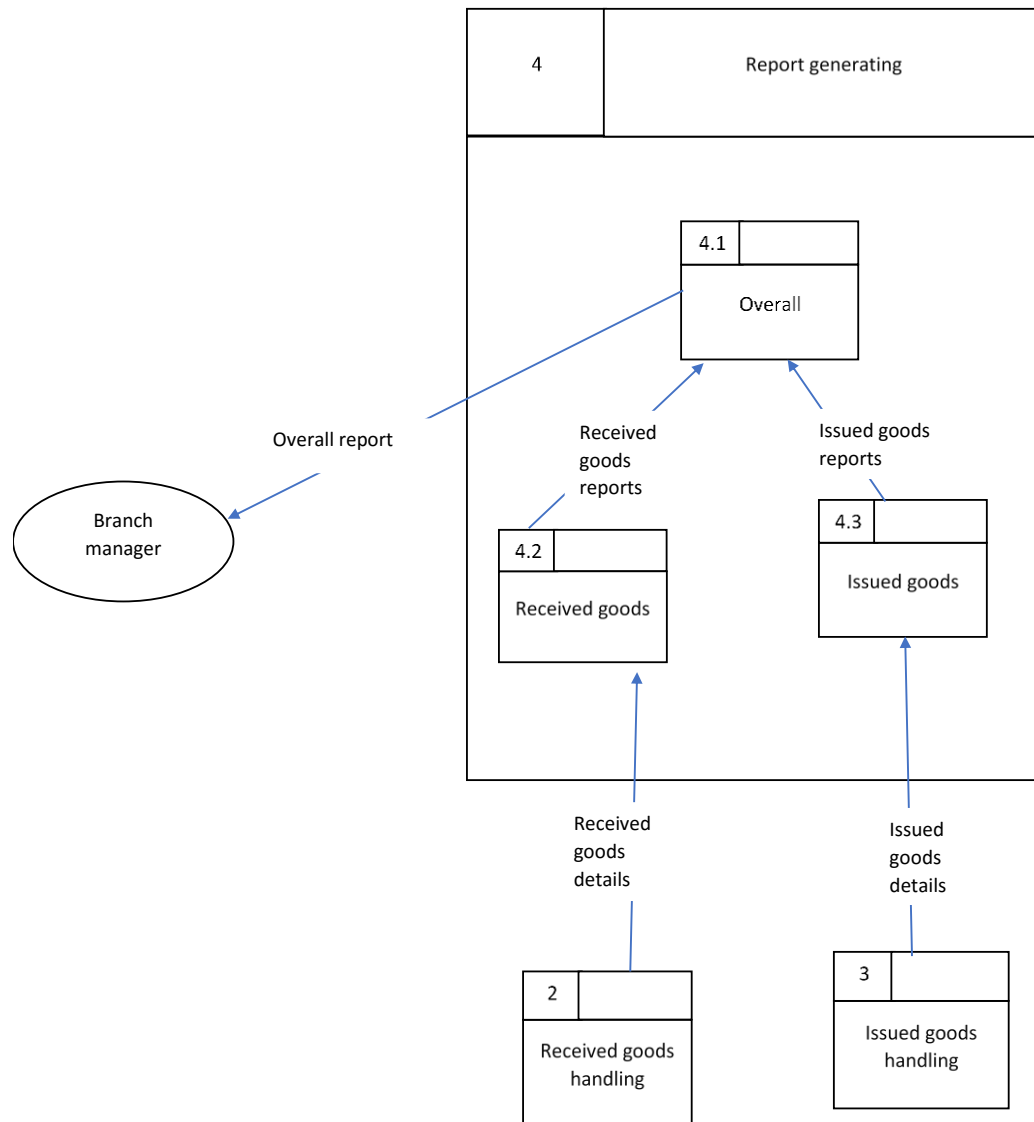
Figure 5: Data Flow Diagram – Level 2

2.2 Software Solution

2.2.1 Requirement Catalogue

2.2.1.1 Functional requirements

ID	Description
01	Should be able to update and add new suppliers.
02	Should be able to keep information about required lists.
03	Should be able to keep contacts with head office and quick response.
04	Should be able to delete suppliers, requirement lists, issued goods and other things.
05	Should be able to record issuing details.
06	Should be able to update inventory status.
07	Should be able to retrieve inventory status.
08	Should be able to generate inventory reports.
09	Should be able to highlight low inventory levels.
10	Should be able to issue details to the quantity server.
11	Should be able to generate good issuing notes for quantity servers.
12	Should be able to keep details about lack offs.
13	Should be more user friendly than existing system.
14	Should be more efficient and less time consume.
15	Should be have good backup procedure.
16	Should be have good safety to the stored data.
17	Should be able to store much data than earlier.
18	Should be able to generate reminders for overdue instalments.
19	Should be able to send all data through each section at time they are updating.

Table 1: Functional Requirements

ID	Description
01	Provide user friendly graphical interface
02	Shell be able to less power consume
03	Shell be able to access E-mails and to internet through the system
04	Shell give instructions from both English and Sinhala languages
05	Shell be reliable
06	Low implementation cost
07	Easy to maintain
08	Shall be able to easily adopt with the system
09	Shall be able to access system resources concurrently
10	Shall be able to easily access the system

Table 2: Non- Functional Requirements

2.3 Business System Options (B.S.O.s)

2.3.1 Manual system with more development (BSO 1)

The existing system in CECB can be improved or standardized in order to avoid identified problems. Therefore using that knowledge, they can develop total manual system to fulfill the requirement of the organization. Information can be entered manually and stored in different files. But the thing is it should set up with the company standards. For the manual system we can use MS Excel and other already prepared software to do calculation and it may be easy to store data.

- Advantages

  Low cost for the implementation

  Employees more user friendly with manual system

No time consume for train employees to software

- Disadvantages

Language and handwriting issues

More time consuming

Less accurate

Difficult to find data

May be want more employees.

2.3.2   Readymade software (BSO 2)

This is a software that designed and developed by another company. So the task is get the software and install. Also, it can purchase according to our usage and according to our willingness. But sometimes it may not perfectly suit for our process. Because the software is designed as a common software and there may be mismatches with our process. May be more important task may not have in the software and for that there may be a useless task for our process. Also, when purchase readymade software all legal factors and also whether this software provider fulfills all standards must be considered. For that we can use consultant or expert knowledgeable persons to select suitable software.

Advantages

- Reduce paper works
- Efficient than manual systems
- Give service when have a problem
- Have good security to documents.

Disadvantages

- One employee may do big workload
- Want some knowledge to use
- High responsibility to data entry operator

2.3.3 Computerized Network System (BSO 3)

All the functions in the current manual system are also included this system. All manual data stores in the current system will computerize and manger will handle the system. There are access to order clerk, store keeper and the manager to handle the system. It will interconnect with all the departments an external and internal entities will send information to the system. Update the system periodically and the manager, clerk can generate necessary reports. Company can gain the benefit by replacing manual system by automated system as it's very efficient and effective.

Advantages

- Fulfill all the requirement of the current system
- Reduce paper works
- Efficient than current system
- High security
- User friendly
- Easy to maintain

Disadvantages

- Have some implementation cost
- Reports send as manual to the management

2.3.4 Requirements vs. BSO s

2.3.4.1 Functional Requirements vs.BSO s

ID	Description	BSO 1	BSO 2	BSO 3
1.	Should be able to update and add new suppliers	✓	✓	✓
2.	Should be able to keep information about requirement lists	✓	✓	✓
3.	Should be able to keep contacts with head office and quick response		✓	✓
4.	Should be able to delete suppliers, requirement lists, issued goods and other things	✓	✓	✓
5.	Should be able to record issuing details	✓	✓	✓
6.	Should be able to update inventory status	✓	✓	✓
7.	Should be able to retrieve inventory status	✓	✓	✓

ID	description			
8.	Should be able to generate monthly/weekly inventory report	✓	✓	✓
9.	Should be able to high light low inventory levels		✓	✓
10.	Should be able to issuing details to the quantity server	✓	✓	✓
11.	Should be able to generate good issuing notes to quantity servers		✓	✓
12.	Should be able to keep details about materials purchasing and borrowings	✓	✓	✓
13.	Should be able to more user-friendly	✓		✓
14.	Should be able to more efficient and less time consuming			✓
15.	Should be have good backup procedure	✓	✓	✓
16.	Should be have good safety to the stored data		✓	✓
17.	Should be able to store much data.		✓	✓
18.	Should be able to generate reminders			✓
19.	Should be able to send all data through each section at time they are updating		✓	✓

Table 3: Functional Requirements vs. BSO s

2.2.3.2 _Nonfunctional Requirements_

ID	description	BSO 1	BSO 2	BSO 3
01	Provide user friendly graphical interface		✓	✓
02	Shell be able to less power consume	✓	✓	
03	Shell be able to access E-mails and to internet through the system		✓	✓
04	Shell give instructions from both English and Sinhala languages.	✓	✓	✓
05	Should be reliable			✓
06	Low implementation cost	✓	✓	
07	Easy to maintain	✓	✓	
08	Shall be able to easily adopt with the system	✓		✓
09	Shall be able to access system resources concurrently	✓		✓
10	Shall be able to easily access the system	✓	✓	

Table 4: Non – Functional Requirements vs. BSO s

2.2.4 Selected BSO and Justification

BSO 1 it is totally manual system. Manual system is normally not much efficient and there are high percentage to mistakes. Also, it is hard to find where the mistake is happen. Manual system is more time consuming. Therefore, should be able to keep contacts with suppliers and quick response is not happen. But it may user friendly because handling files and

writing it much easier and can be done by any person with simple training. But most functional requirements can't full fill manually.

BSO 2 is much improved system. Using computerized system is more efficient way for a organization. But this system may not well defined with the organizations functions. So it not be user friendly in that way. If the organization want to develop that system it may be more costly and sometimes it may not totally match to the organization's functions.

BSO 3 is directly designed and developed as the organization wants. So it can include whatever organization wants. They can access to each and every department in the organization and acquire the relevant information. So BSO 3 is selected as it fulfills all the requirements and was also technically, operationally and economically feasible.

3. CHAPTER 3 – SYSTEM DESIGN

Here in this chapter there are some diagrams which explain the proposed system such as context diagram, document flow diagram, and data flow diagrams. Since there are no proper reports handling system, generating reports has included for the proposed system. In proposed system I expect to add a materials requirement planning part within the Inventory management system. Other than that decided to do all the financial works related to inventory handling using one person as purchasing assistant. Because the existing system, Raw materials purchasing is doing by purchasing assistant and paying tasks to the embroidering and printing part is doing by financial unit. In proposed system all payment parts will be done by purchasing assistant and he will send all invoices, bills and reports to the financial unit. In existing system there is a relationship between embroidering and printing suppliers and production manager. In proposed system production manager only have to concern about productions and no relationship with external entities. Purchasing assistant and clerk will handle it.

3.1 Analysis of the Proposed System

3.1.1 Context Diagram
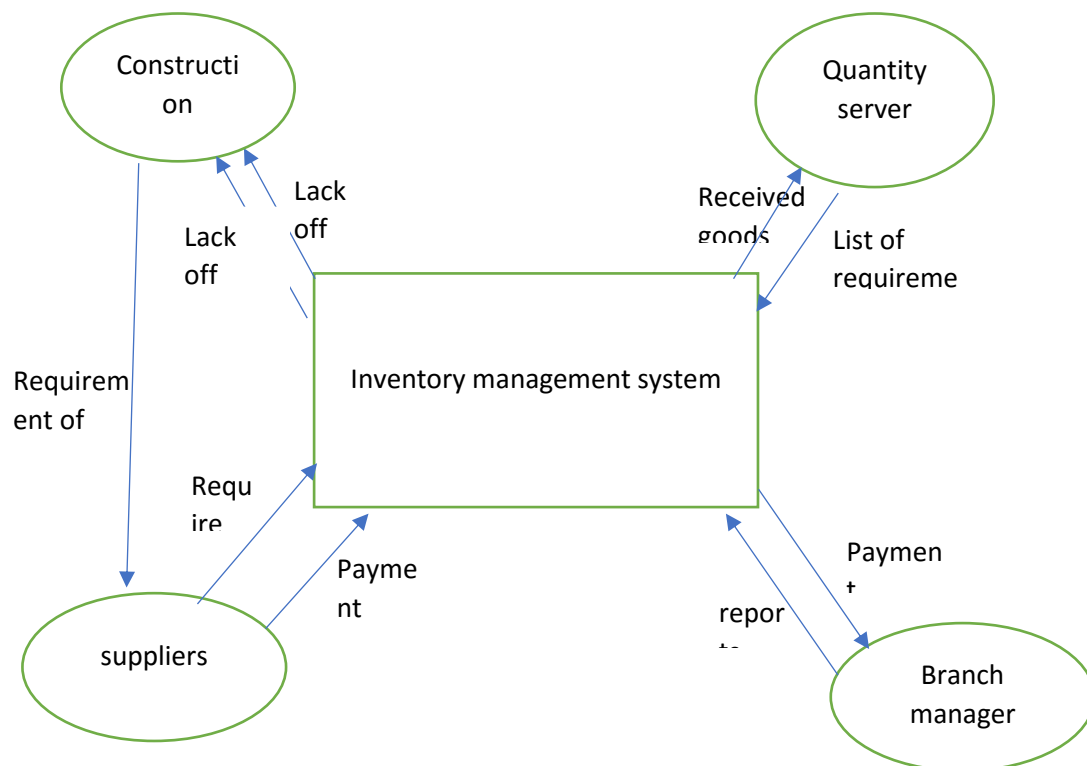
Figure 6: Context diagram for proposed system

Inventory Management System   for Central Engineering Consultancy Bureau (CECB)

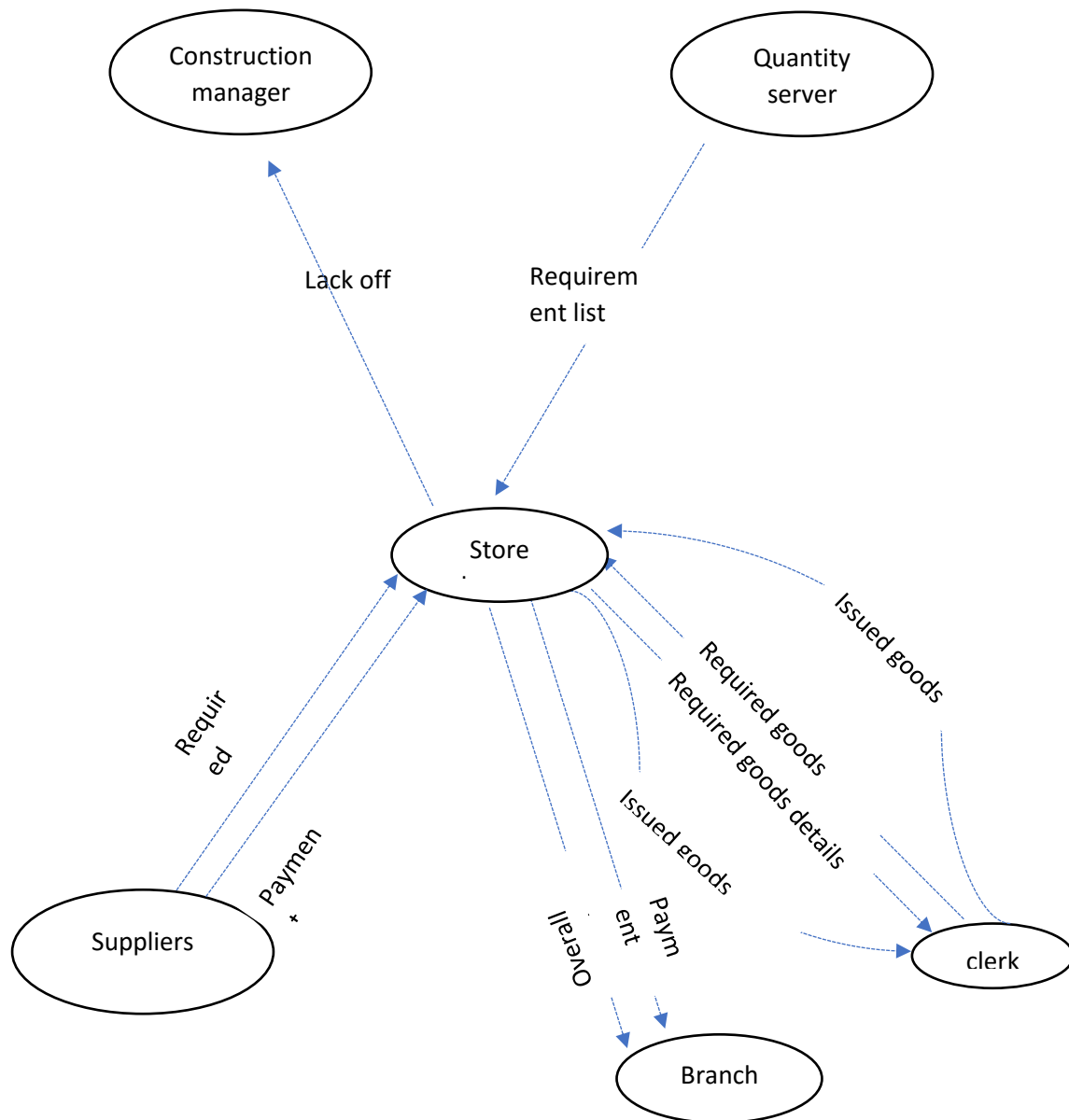### 3.1.2 Document Flow Diagram

Figure 7: Document Flow Diagram for Proposed System

3.1.2 Data Flow Diagram

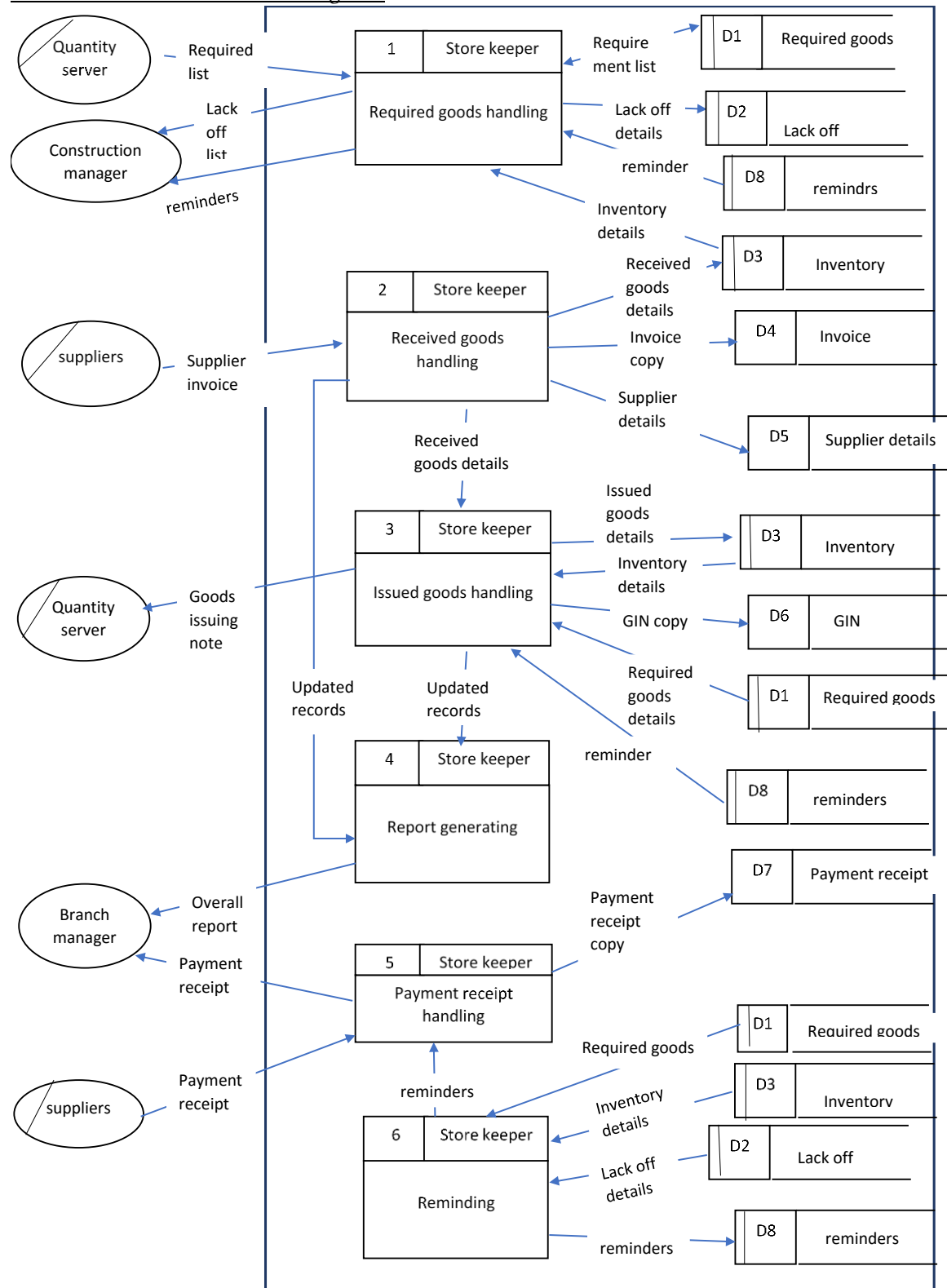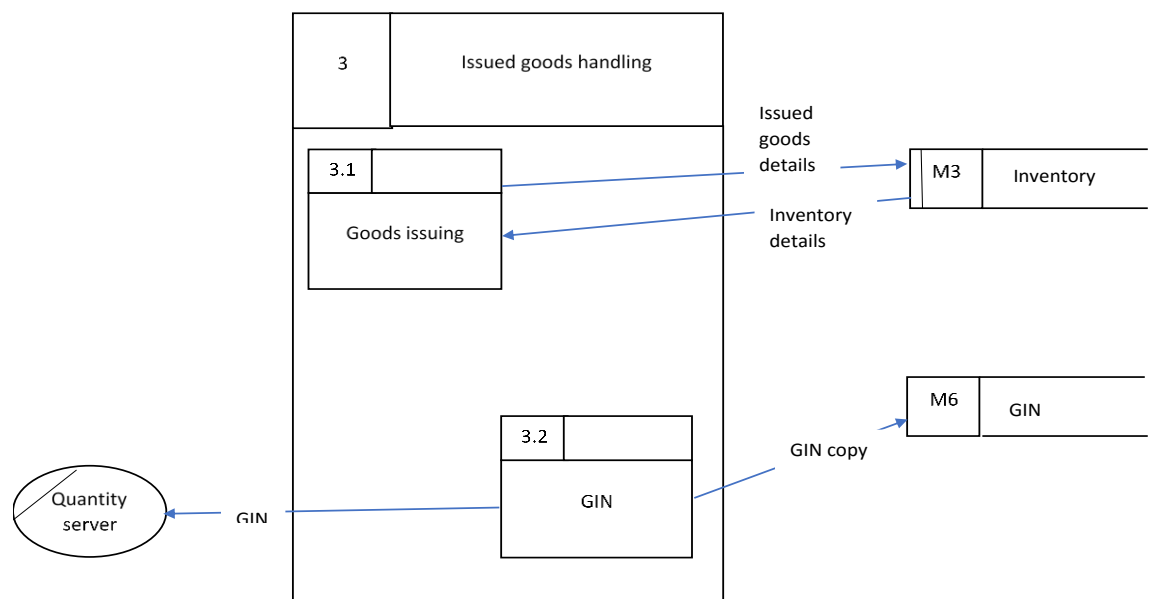### 3.1.2.1 Level 1 Data Flow Diagram

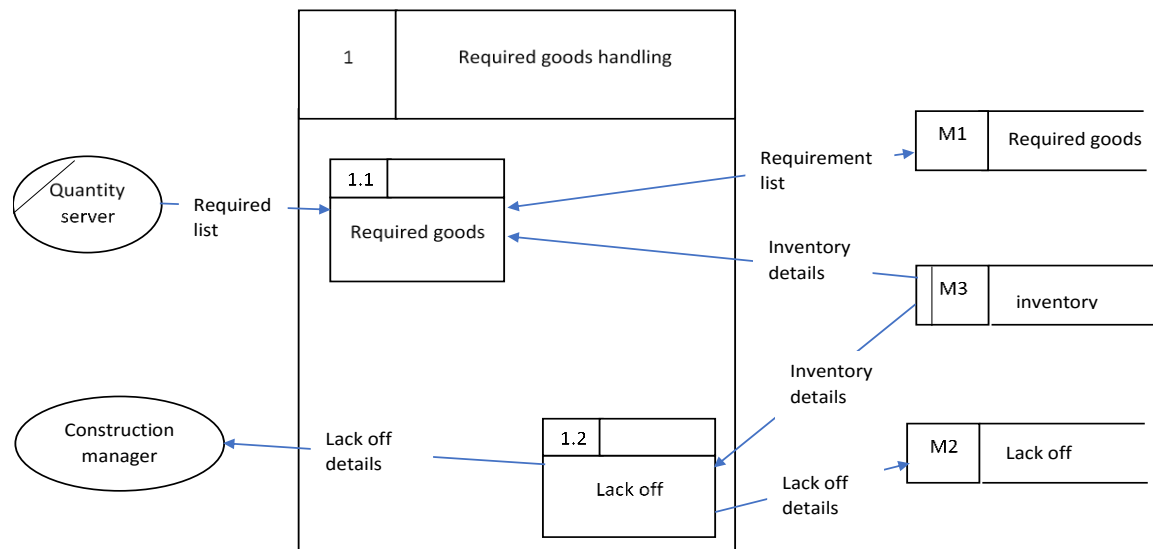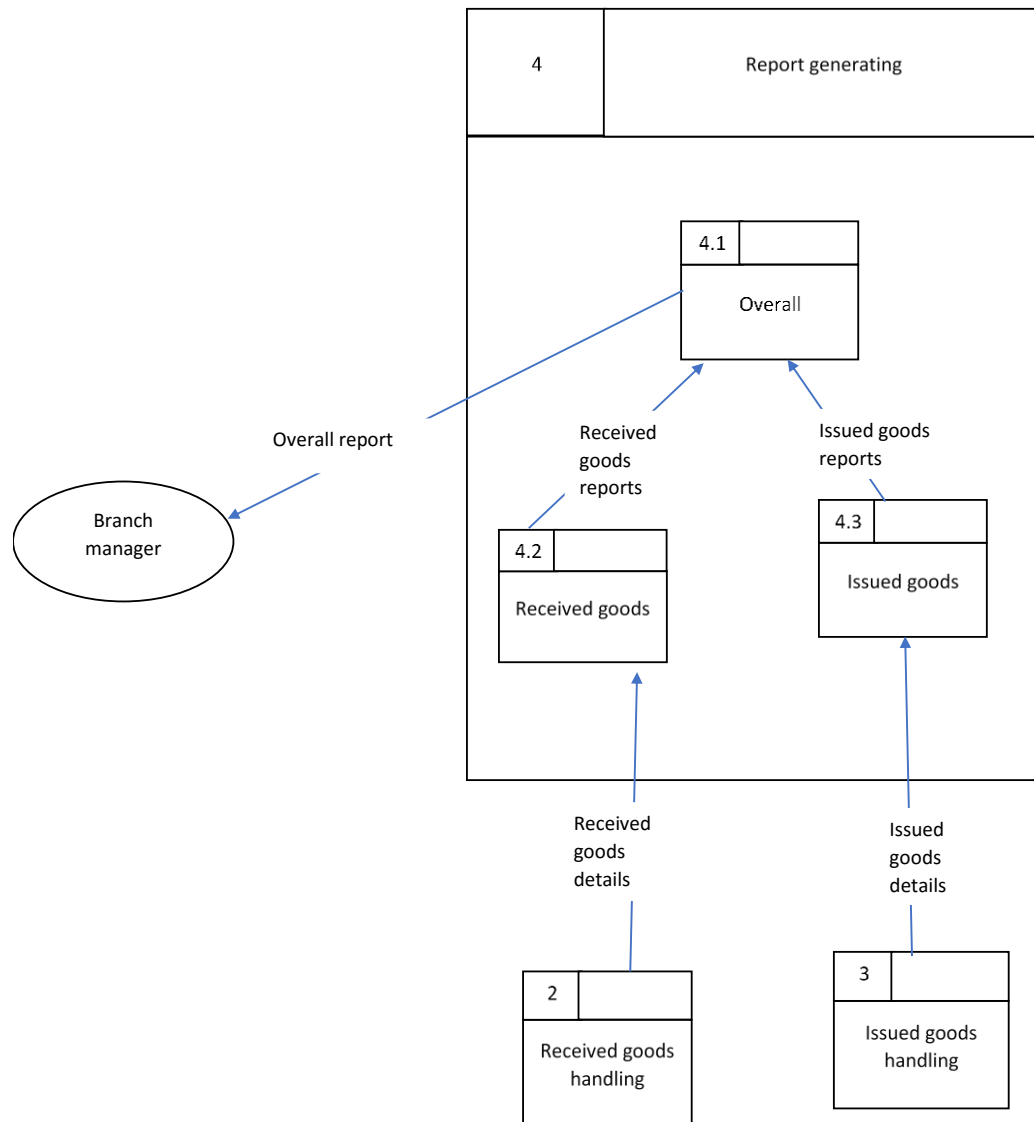*Figure 8: Data Flow Diagram – Level 1 for Proposed System*

Level 1 DFD

Process 1: Required goods handling

```
┌──────┬───────────────────────────────┐
│  1   │   Required goods handling     │
├──────┴───────────────────────────────┤
│                                       │
│   ┌─────┬──────────┐                  │
│   │ 1.1 │          │                  │
│   ├─────┴──────────┤                  │
│   │ Required goods │                  │
│   └────────────────┘                  │
│                                       │
│   ┌─────┬──────────┐                  │
│   │ 1.2 │          │                  │
│   ├─────┴──────────┤                  │
│   │    Lack off    │                  │
│   └────────────────┘                  │
└───────────────────────────────────────┘
```

Quantity server → Required list → **1.1 Required goods**

1.1 Required goods → Requirement list → **M1 Required goods**

M3 inventory → Inventory details → **1.1 Required goods**

M3 inventory → Inventory details → **1.2 Lack off**

1.2 Lack off → Lack off details → **M2 Lack off**

1.2 Lack off → Lack off details → **Construction manager**

- M1 | Required goods
- M3 | inventory
- M2 | Lack off

Process 3: Issued goods handling

```
┌──────┬───────────────────────────────┐
│  3   │   Issued goods handling       │
├──────┴───────────────────────────────┤
│                                       │
│   ┌─────┬──────────┐                  │
│   │ 3.1 │          │                  │
│   ├─────┴──────────┤                  │
│   │ Goods issuing  │                  │
│   └────────────────┘                  │
│                                       │
│              ┌─────┬──────────┐       │
│              │ 3.2 │          │       │
│              ├─────┴──────────┤       │
│              │      GIN       │       │
│              └────────────────┘       │
└───────────────────────────────────────┘
```

3.1 Goods issuing → Issued goods details → **M3 Inventory**

M3 Inventory → Inventory details → **3.1 Goods issuing**

3.2 GIN → GIN copy → **M6 GIN**

3.2 GIN → GIN → **Quantity server**

- M3 | Inventory
- M6 | GIN

4	Report generating

4.1	
Overall	

Overall report

Received goods reports

Issued goods reports

Branch manager

4.2	
Received goods	

4.3	
Issued goods	

Received goods details

Issued goods details

2	
Received goods handling	

3	
Issued goods handling	

Figure 9: Data Flow Diagram – Level 2 for Proposed System

3.2 Architectural design

Computer architecture in computer engineering is the science and art of selecting and interconnecting hardware components to create computers that meet functional, performance and goals.

The architectural layer generally encapsulates a software application's technical complexities independent of the business logic, thereby providing a tally between the business functionality and the underlying technical infrastructure. Layered architectures contribute to the high availability of software infrastructures by enabling components to detect failure of components in adjacent layers. One of the key properties of a layered architecture is that the higher layer has knowledge of the lower layer, while the lower layer must not make any assumptions on the higher layers. In a multi-layered architecture, it is valid for a layer to skip lower other layers but it still must not have dependencies on higher layers.

When considering the system components of the system, the following layers and the dependencies between those layers could be identified as follows.
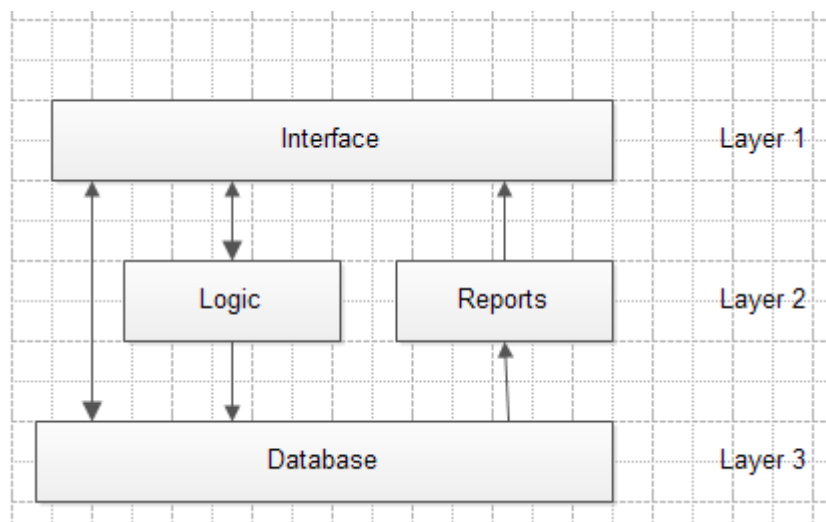
Figure 10: architectural Design

3.3 Database design
3.3.1 Entity Model
Database design is the process of producing a detailed data model of a database. This logical data model contains all the needed logical and physical design choices and physical storage

parameters needed to generate a design in a Data Definition Language, which can then be used to create a database. A fully attributed data model contains detailed attributes for each entity.

The term database design can used to describe many different parts of the design of an overall database system. Principally, and most correctly, it can be thought of as the logical design of the base data structures used to store the data. In the relational model these are the tables and views. In an object database the entities and relationships map directly to object classes and named relationships. However, the term database design could also be used to apply to the overall process of designing, not just the base data structures, but also the forms and queries used as part of the overall database application within the database management system.

	Order	GIN	Item	Supplier	Invoice	Payment receipt
Order		✓	✓	✓		
GIN			✓			
Item				✓	✓	✓
Supplier					✓	✓
Invoice						
Payment receipt						

Figure 11: Entity Model

3.3.2 Logical Data Structure
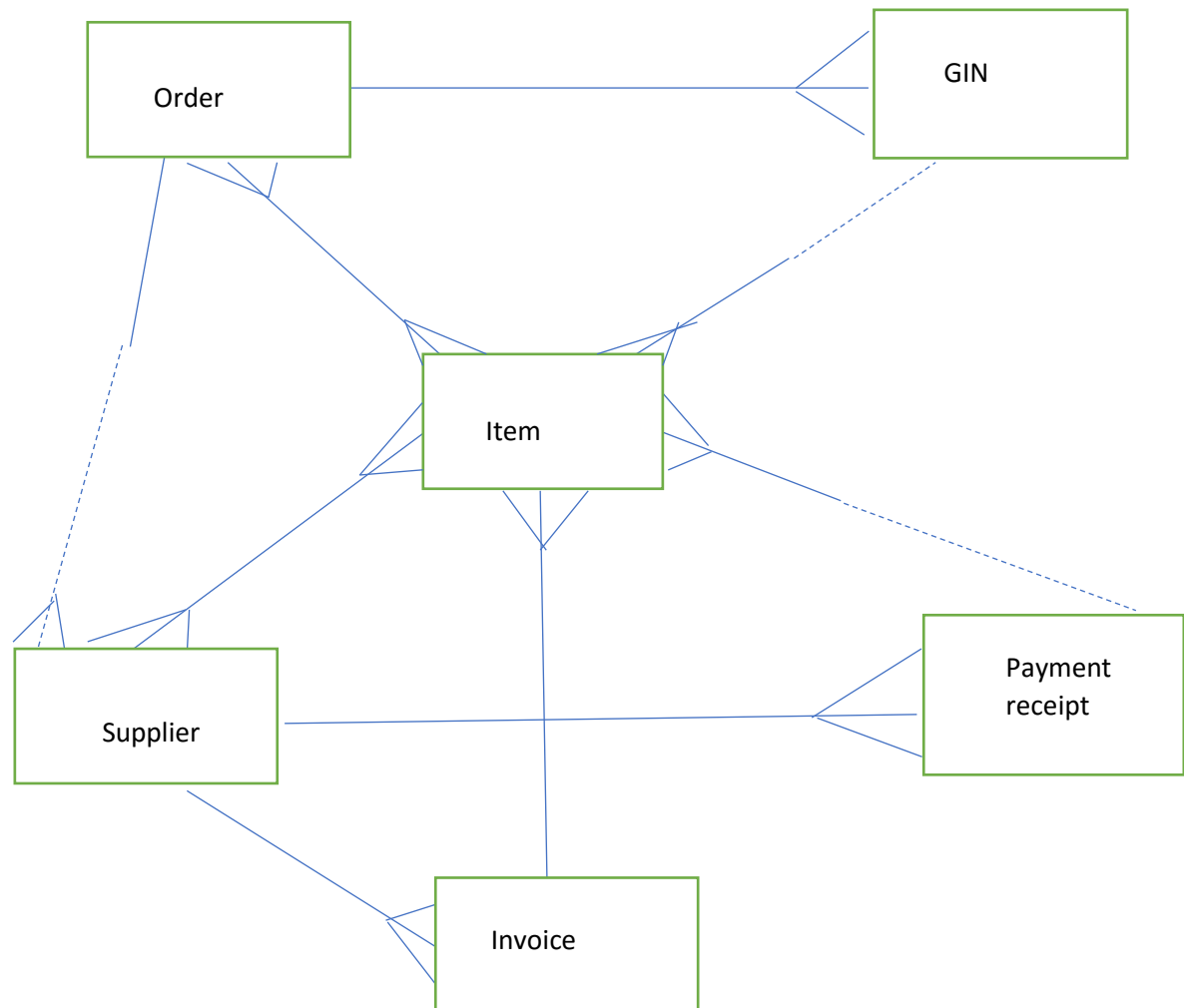
Figure 12: Logical Data Structure

3.3.3 Entity Relationship Diagram

Figure 13: Entity Relationship Diagram
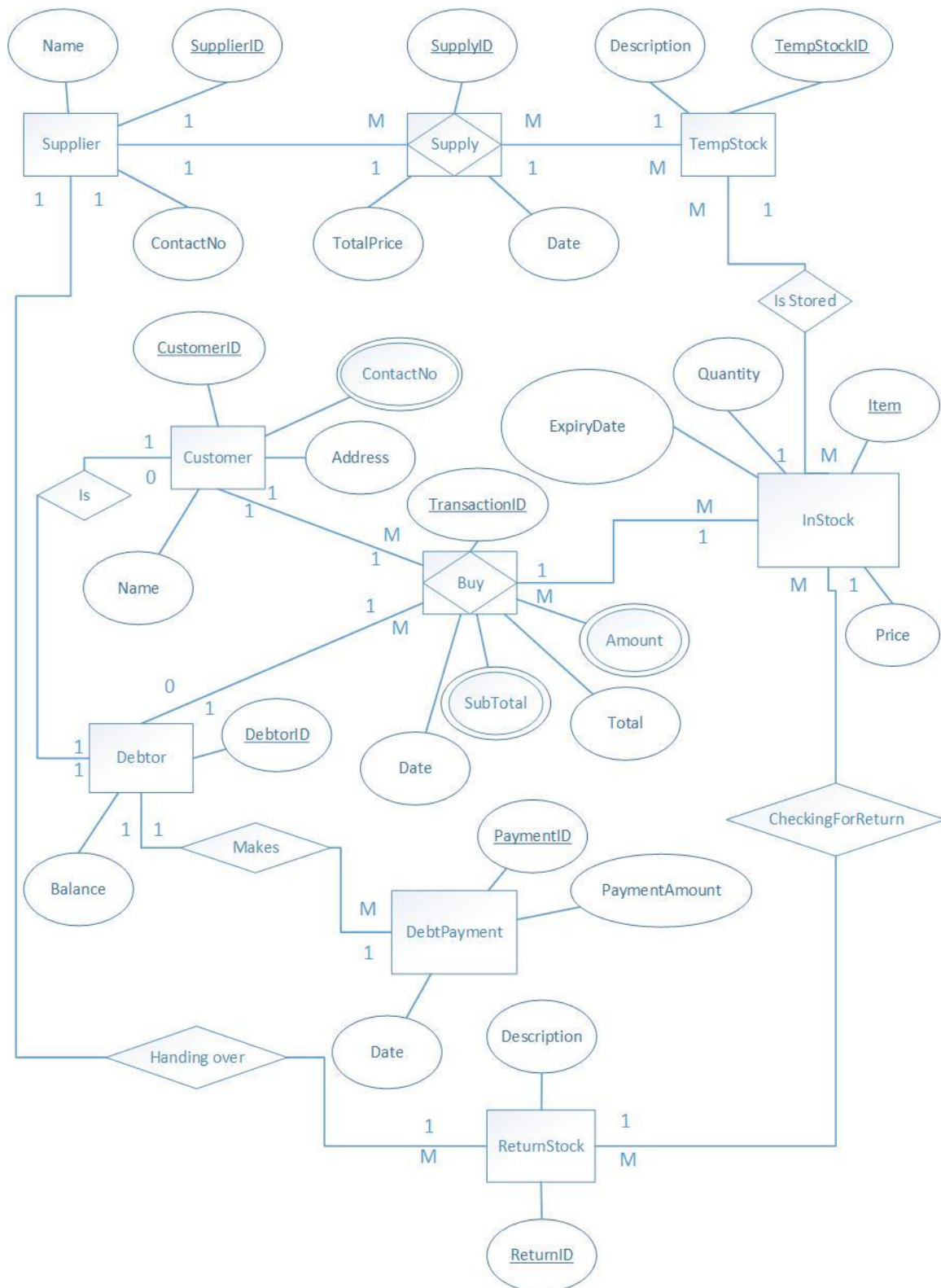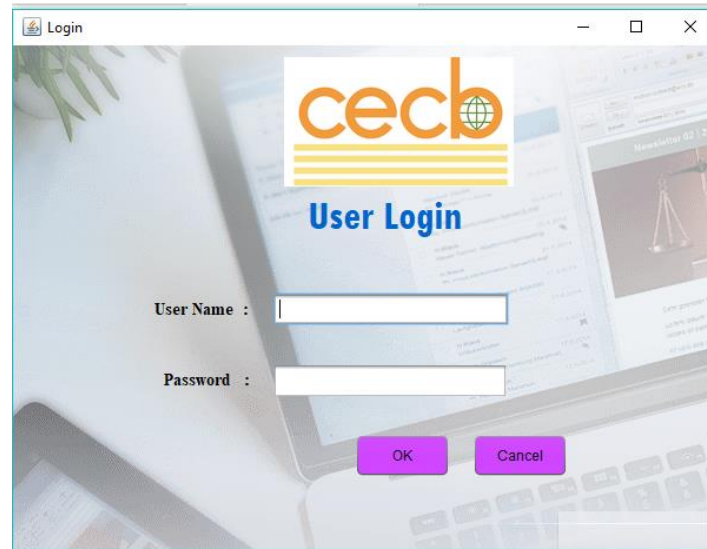
3.3.4 Final Relational Schema

Figure 14: Final Relationship Schema

3.4 Graphical User Interface Design

3.4.1   Login Screen

Figure 15: Login Screen

- The login screen will appear as shown above.
- If the login details are entered incorrectly for a number of times, a message appears directing the user to contact the relevant system administrator to reset and/or change the login information.
- If a user successfully entered user name and password he get a message of "Username and Password Correct " and if a user entered a wrong user name or password he get a message of "username and Password incorrect. Please try again ."
- If a user click the cancel button he can exit from the system.

3.4.2 Home
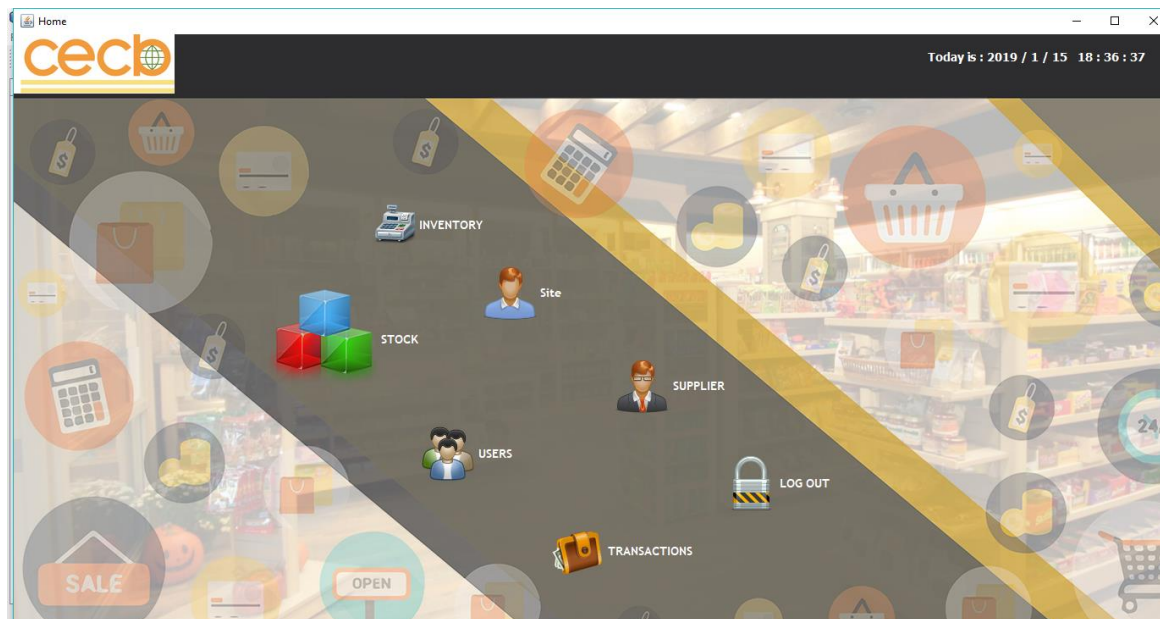
Figure 16: Home

- The Home Screen will appear as shown above. The Buttons are available to inventory, stock, suppliers, site, transactions, and log out.
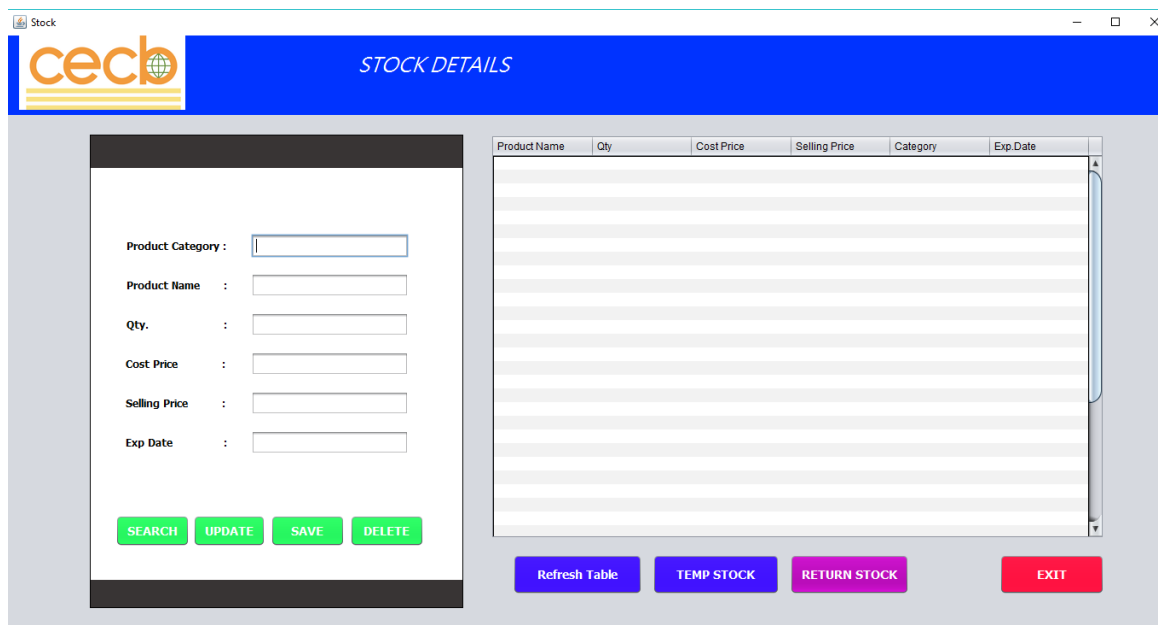
3.4.3 Inventory

Figure 17: Inventory

- Inventory interface is shown as below. User can add a new inventory details by adding product ID, product category, product name, date and quantity.
- By the table user can get the details of data that in the database.
- By the balance text field user can see how much of total inventory in the inventory related to product ID.
- By the home, stock, site and transaction buttons user can go to pertinent interface.
- By log out button user can log out from the system.

3.4.4 Stock Details

Figure 18: Stock Details

- This interface includes details of the stock of the system. Save and update buttons used to add details of a new stock and update data in the database.
- Table used to load the data that are already exists in the database.
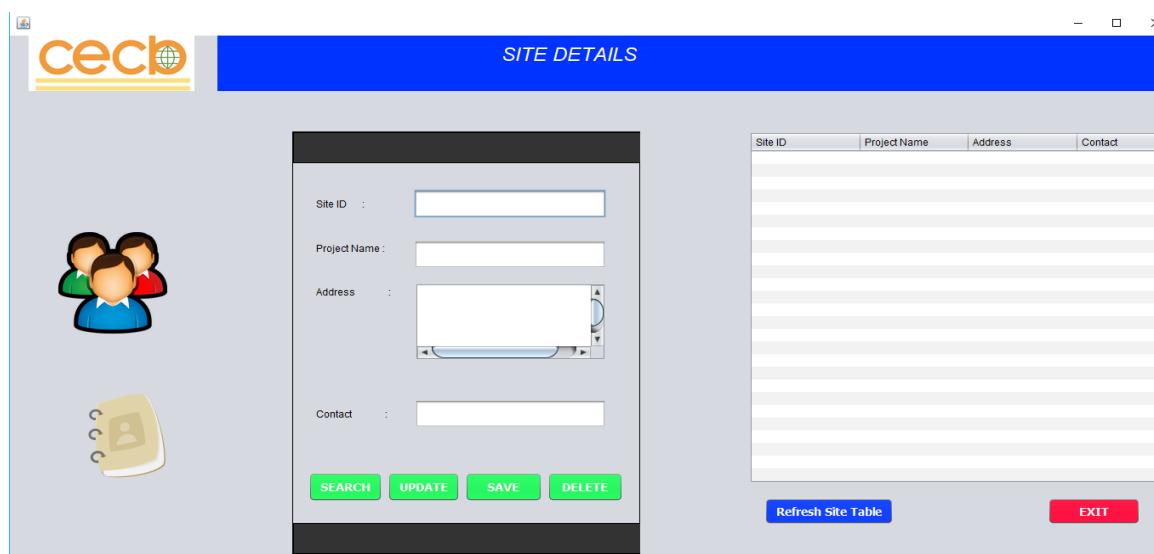
3.4.5 Suppliers

Figure 19: Suppliers

- This is the interface for supplier details. To add a new supplier detail user can use save button and to update exist data user can use update button.
- To see the details of a supplier who is already exist in the database user can use the table.
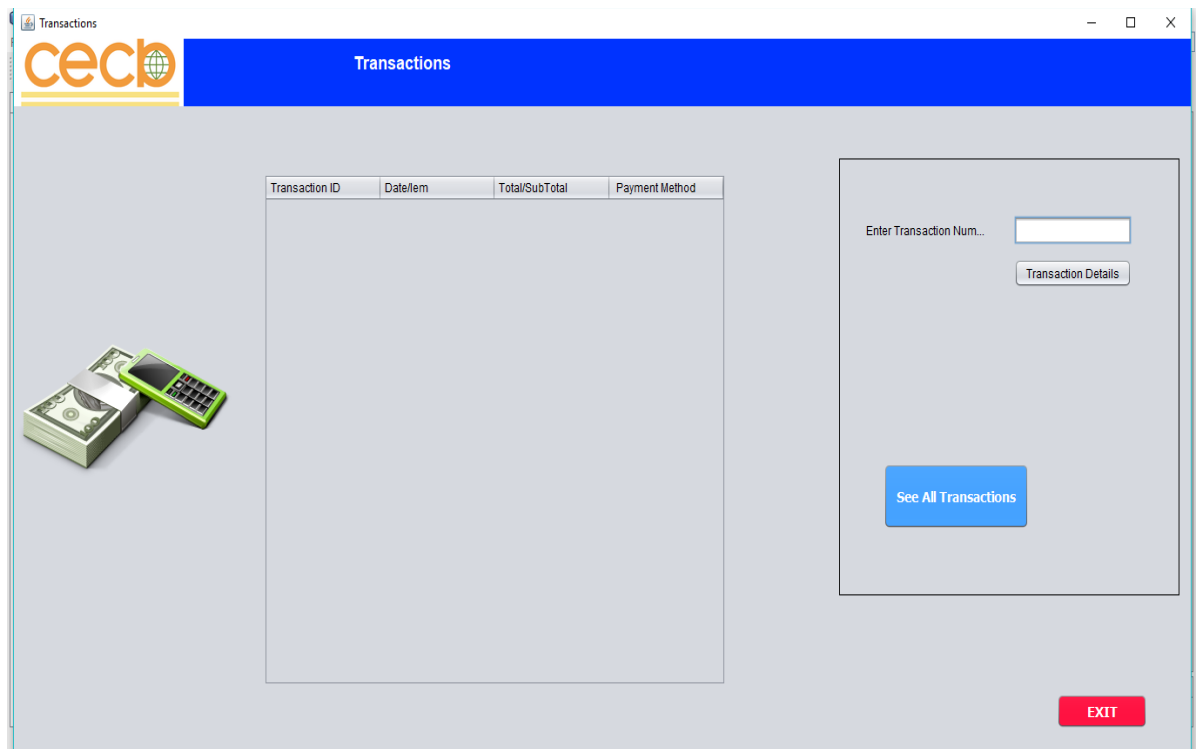
3.4.6 Site Details

Figure 20: Site Details

- Site interface can be used to enter site details to the system or see the site details that are already exist in database.
- Table of the site detail interface shows the details of sites that are already in the database. If a user want to get site details of a site he has to click the button refresh site table.

3.4.7 Transactions

Figure 21: Transactions

- When a user clicks the transaction button in the home page, he gets this interface. By this interface user can see the transaction details that are in the database.

- By entering transaction number and then click the button "Transaction Details" user can g3et the details that are related to that transaction number.

- By clicking see all transaction button user can see the all transaction details tha saved in the database.
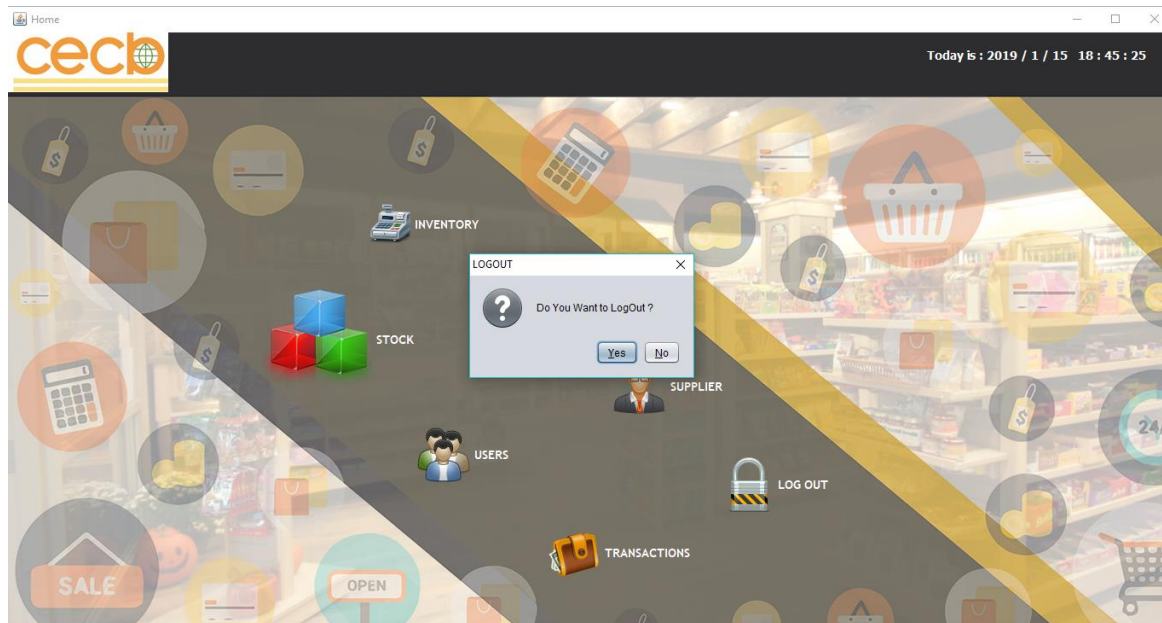
3.4.8 Log out

Figure22: Log out

- When user want to log out below interface will display.
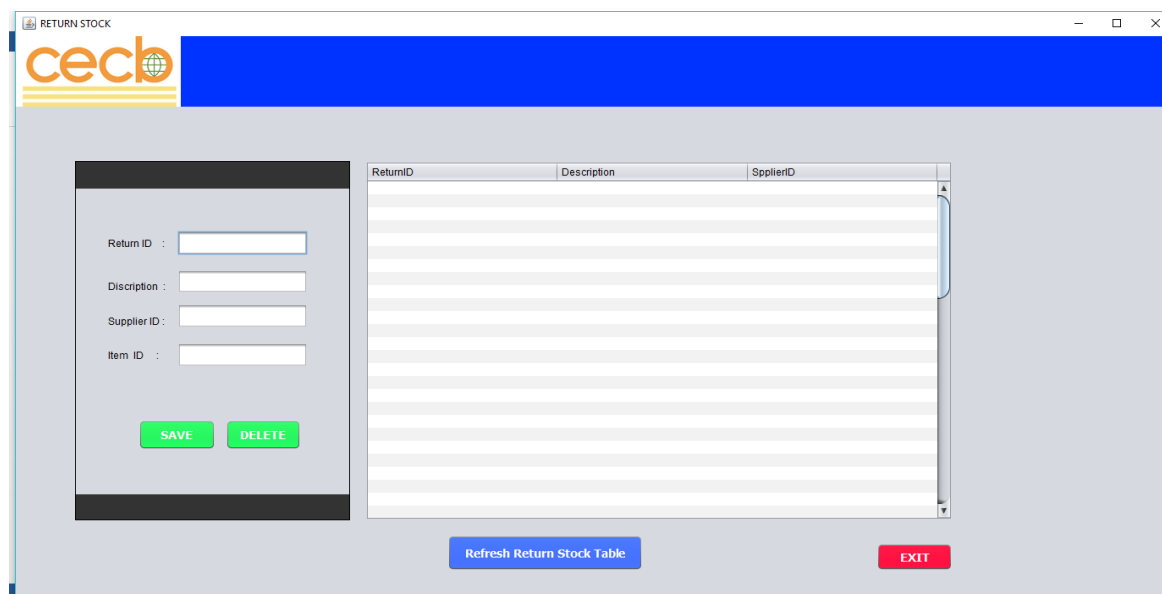
3.4.9 Return stock

Figure 23: Return Stock

- When the user click the Return Stock button in the stock interface he gets this interface.
- In here user has to add details of return stock and click save button.
- If user wants to see all return stock details he has to click the refresh return stock table button.
- By clicking exit button user can go back to the stock interface.

3.4.10 Temp Stock

Figure 24: Temp Stock

- When the user click the Temp Stock button in the stock interface he gets this interface.
- In here user has to add details of temporary stock and click save button.
- If user wants to see all temporary stock details he has to click the refresh temporary stock table button.
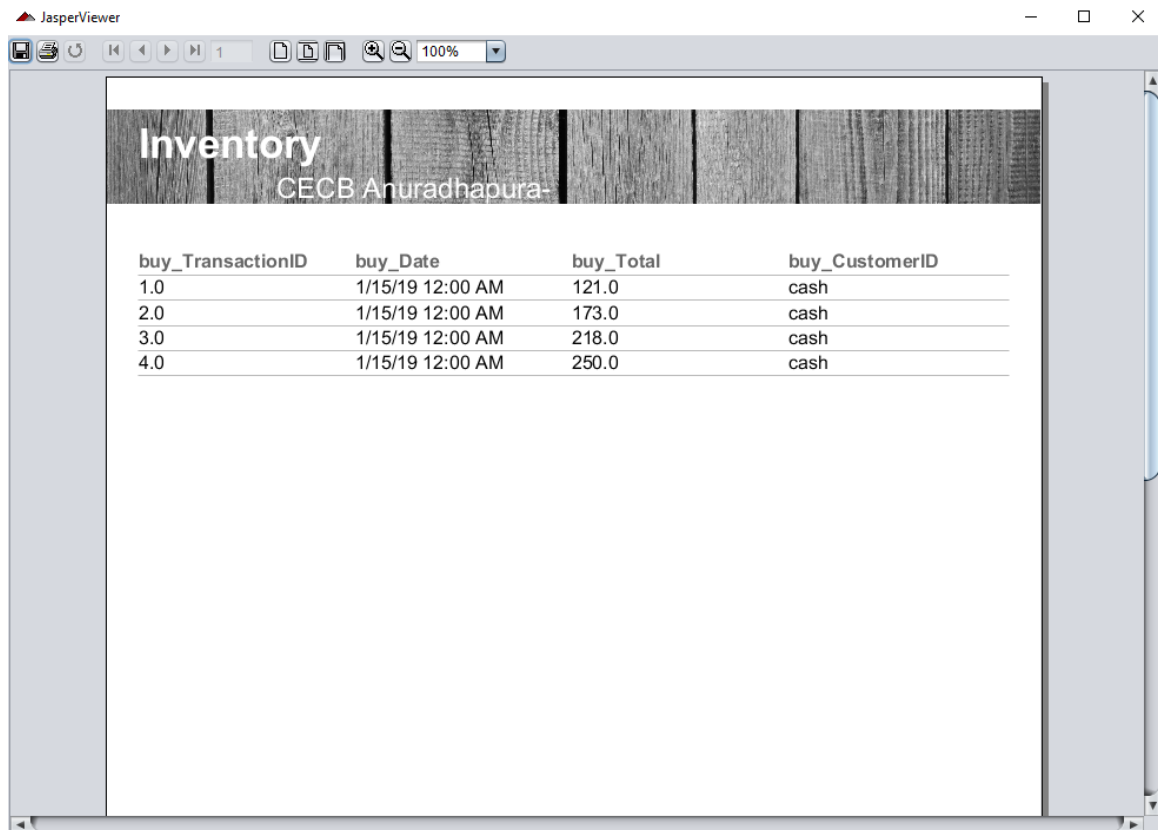- By clicking exit button user can go back to the stock interface.

3.5 Report Designs
3.5.1 Inventory Report

Figure 25: Inventory Report

CHAPTER 4 – IMPLEMENTATION

In this chapter illustrates the data structures, algorithms used and a small discussion regarding the used data structures and algorithms.

4.1 Data Structures

A data structure in computer science is a way of storing data in a computer so that it can be used efficiently. Often a carefully chosen data structure will allow the most efficient algorithm to be used. The choice of the data structure often begins from the choice of an abstract data type. A well-designed data structure allows a variety of critical operations to be performed, using as few resources, both execution time and memory space, as possible. Data structures are implemented by a programming language as data types and the references and operations they provide.

4.1.1   Function to Validate

```java
//    returns true if input only contains letters
    public boolean isTextOnly(String input){
        char c;
        for (int i = 0; i < input.length(); i++) {
            c = input.charAt(i);
            if (!Character.isLetter(c)) {
                return false;
            }
        }
        return true;
    }
```

Figure 26: Function to validate 1

```java
public boolean ValidatePhone(String input){
    if(input.length() != 10){
        JOptionPane.showMessageDialog(null, "Invalid phone number ");
        return false;
    }
    for (int i = 0; i < input.length(); i++) {
        char c=input.charAt(i);
        if(!Character.isDigit(c)){
            JOptionPane.showMessageDialog(null, "Invalid phone number ");
            return false;
        }
    }
    return true;
}
```

Figure 27: Function to validate 2

```java
//     returns true if input only contains letters
public boolean isTextOnly(String input){
    char c;
    for (int i = 0; i < input.length(); i++) {
        c = input.charAt(i);
        if (!Character.isLetter(c)) {
            return false;
        }
    }
    return true;
}
```

Figure 28: Function to validate

4.2 Algorithms Used

4.2.1 Mathematical Calculations Related to Inventory

```
txtQty.addKeyListener(new KeyAdapter() {
    @Override
    public void keyPressed(KeyEvent e) {
        if(e.getKeyCode()==KeyEvent.VK_ENTER){
            DefaultTableModel model = (DefaultTableModel) jTable1.getModel();
            String p = txtItem_Price.getText();
            String q = txtQty.getText();
            double d, f;
            d = Double.parseDouble(p);
            f = Double.parseDouble(q);
            model.addRow(new Object[]{cmbCategory.getSelectedItem(), cmbProduct_Name.getSelectedItem(), txtQty.getText(), f * d});
            sum = sum + (d * f);
            String total;
            total = Double.toString(sum);
            txt_Sub_Total.setText(total);
```

Figure 29: Mathematical Calculations related to Inventory

4.3 Discussion

The system could be able to build up to some level as expected in the design stage of this system. But some deviations have occurred with the lack of knowledge, about the used language for implementing.

The data structures were not used for implementing this system. If it is used then the length of the run time for the calculations may be reduced.

This chapter is including coding of the system, Therefore used simple sections to understand the logic of the system.

CHAPTER 5 – Testing

The importance of testing and its impact on system cannot be underestimated. In this chapter illustrates the testing methodologies used, test reports and reviews of the users. Testing is a fundamental component of software quality assurance and represents a review of specification, design and coding. In this chapter it has included the command messages appears, when checking the system. By using a test method the testing has done and the test reports are also generated.

5.1 Testing Methodology Used

Among several testing methods Black Box Testing has been used to test the software. Black box testing allows the software engineer to produce groups of input situations that will fully exercise all functional requirements for a program.

5.1.1 Test Case 1

What is tested: The login screen?

The case sensitivity and the match between user name and password.

State of the system: Admin user name and password are "nishadi" and "123".

User Type	User name	Password	Output		Remarks
			Expected	Actual	
Administrator	nishadi	123	Login with all menus	Login with all menus	OK-User can log in
Administrator	nishadi	1	Incorrect username or password	Incorrect username or password	Fail – password is wrong
Administrator	admin	123	Incorrect username or password	Incorrect username or password	Fail– username is wrong

Table 5: Test Case 1 – Login Screen

5.2 User Evaluation

5.2.1 Speed

Speed of work has increased dramatically because of the system. Adding customers, products, returns and searching, deleting and updating records are faster in this system.

5.2.2 Reduced Errors

The system was designed with the intention of avoiding mistakes as much as possible. The fields are validated so it would give error messages once wrong data are added.

5.2.3 User Friendliness

The system is very user friendly. The employees are already well acquainted with the ins and outs of all the processes. The system has been built in such a way so that the employees can easily understand the computerized system and work comfortably. The system is not complex.

5.2.4 Help to Make Management Decisions

The data base is designed to facilitate management decision making process. Management can take reports which analyses the performance of the company easily.

CHAPTER 6 - Discussion And Conclusion

6.1 Summary

This report consists with 6 chapters and covered all the analysis parts for the existing system and presented with the diagrams and readable descriptions.

Chapter 1 gives an introduction to the system for which I have developed software. It also discussed about the existing system, its weaknesses and problems. Further chapter discussed about the aims and objectives of the project. Overview of the following chapters is also given here.

Chapter 2 the existing system is deeply analyzed. In this chapter software solution is identified.

Chapter 3 discuss about the system design. Architectural design, Data base design, graphical user interface design and report design is comprehensively described here.

Chapter 4 is about implementation. It discusses about data structures and algorithms used.

Chapter 5 talks about testing and user evaluation.

Chapter 6 finally the report ends with a chapter which discuss about the limitations of the study, suggestions for improvements.

6.2 Limitations of this Study

This system is not platform independency. So Windows XP, Vista, Win7… operating systems should be in the PC‟s. Furthermore non availability of email facility would be a limitation.

There were some limitations that had to face during this study which were not expected at the beginning of this project.