Dcit 308 group 31

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PROJECT NAME: DICT 308 INVENTORY MANAGEMENT SYSTEM

DCIT 308 DATA STRUCTURES 2

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1. Introduction to the System

1.1 Problem Definition

This is an inventory management system product to test student's ability to use data structures, java graphical user interface and database usage.

1.2 Objectives and scope of the project

It is real project to implements knowledge from the DCIT 308 course and their implementations. It enhances students to foresee how problem in such domain is solved outside the confines of school. The main focus is implementing data structures in real life, i.e., using the theories from class and implementing them. It seeks to also equip students with the knowledge of real development in the java environment.

1.3 Benefits of the project

- Teamwork building
- Improving coding skills from the previous levels
- Know how of how inventory systems work.
- Being able to produce a working product.
- Students gets the taste of both school and working environment
- To help the students embark on their development journey.
- Help improve problem solving skills
- Research and reporting skills is improved.

1.4 Limitations of the project

Due to the constraints with time, there are certain limitations of this project; some of them are highlighted below:

- The software did not implement some of the data structures strictly recommended.
- Software suitable for medium organizations.
- Time restriction was an issue.

1.5 Feasibility Assessment

The team looked and evaluated then analyze what will go into the development of the inventory system.

- **Economic Feasibility**

  Money was not involved as no hosting was part.

- **Technical Feasibility**

  Technical and system requirement wasn't an issue as the system can run on any pc that can run netbean 8.

- **Operation Feasibility**

  Very feasible across some 90% of pc's currently available

- **Legal Feasibility**

  No legal matters were involved. Hence no copyright issues.

- **Schedule Feasibility**

  We had about 9-10 weeks to complete the project.

Gantt chart for Inventory Management System:

1.6 Tools used

- Net Beans IDE (Coding)
- JDK 1.8_2
- MySQL server
- MS Visio for designing
- MS Word for documentation

2. Analysis of the System

The System Development Life Cycle (SDLC) was followed in the development of the software. The general steps that we have followed for development of system can be shown below:

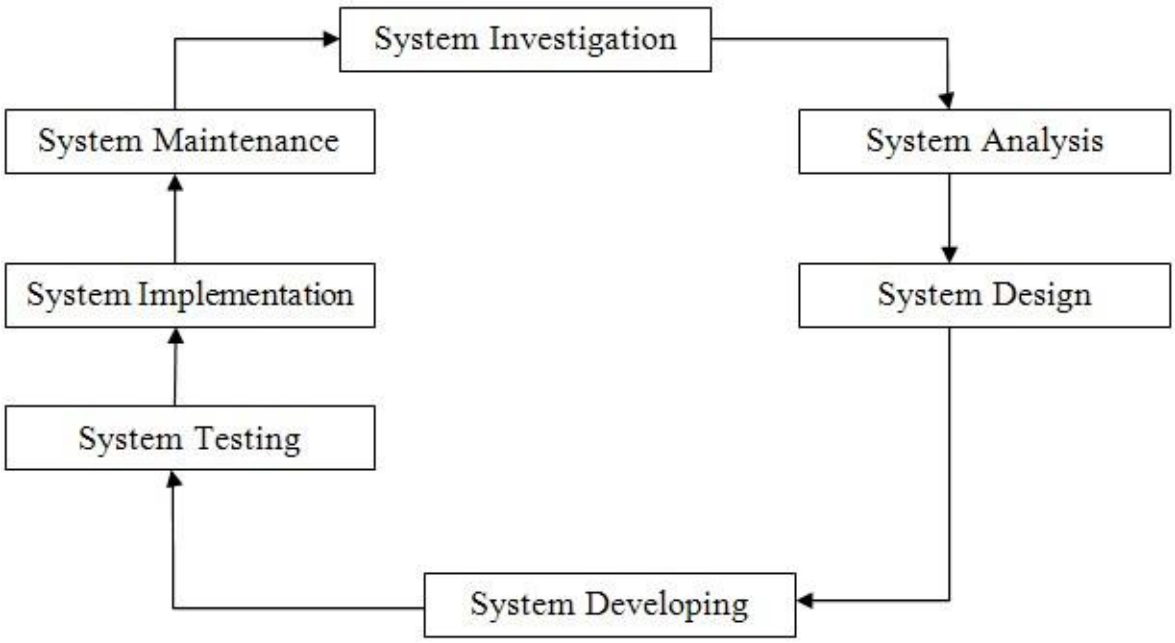


Fig: inventory system's development life cycle

System Investigation

Previous system was investigated and modified to meet the need of the requirement of the project for the DCIT 308 class.

System Analysis

The analysis of what the inventory system seeks to solve was than.

System Design

After identifying the user requirements, specifications for the hardware, software, people and data resources were developed. The software module that satisfies the functional requirements of the proposed system was also developed. In this phase both logical and physical design of the system was done.

System Development

System development commenced after design was done. The design was done in parts. And then parts were joined together as the development continued.

System Testing

The tastes that were conducted are :

- Functional testing
- Module testing
- System testing

Function and module were created after functional and module testing has been done in making sure the system works correctly. It is done to ascertain if the system works as stipulated in the functional requirements. System testing was done to remove bugs

System Implementation

System implementation was done after design stage. The system was installed and run.

System Maintenance

There room left for system maintenance as and when required or need arise.

System Installation

To install the IMS application on a certain machine, it requires the machine to fulfill minimal requirements and additionally, the backend software My SQL server needs to be installed.

With the successful installation of the IMS application, it will run as any other software present earlier in the machine.

Requirement of User's Training

Any user with basic computer knowledge can operate the system in an efficient and effective way but since this system is completely new software, some general guidelines needs to be provided. This will help them to counter face the difficulties while dealing with the new software. The interface of the system is quite user friendly such that any user who can operate the operating system like Windows 98 and Windows XP can easily run the system.

2.1 System Requirement

- **Hardware requirement** ○ Pentium 3 or above ○ 512 MB RAM

- **Software Requirement**
  - ○ Microsoft/Linux/Mac Operating System
  - Java Virtual Machine
  - Java Development Kit
  - Java core/unofficial API
    - JTatoo.jar
    - jCalendar.jar

- **User Requirement**
  - Basic Computer knowledge
  - File Browsing Skills

2.2 Context Diagram

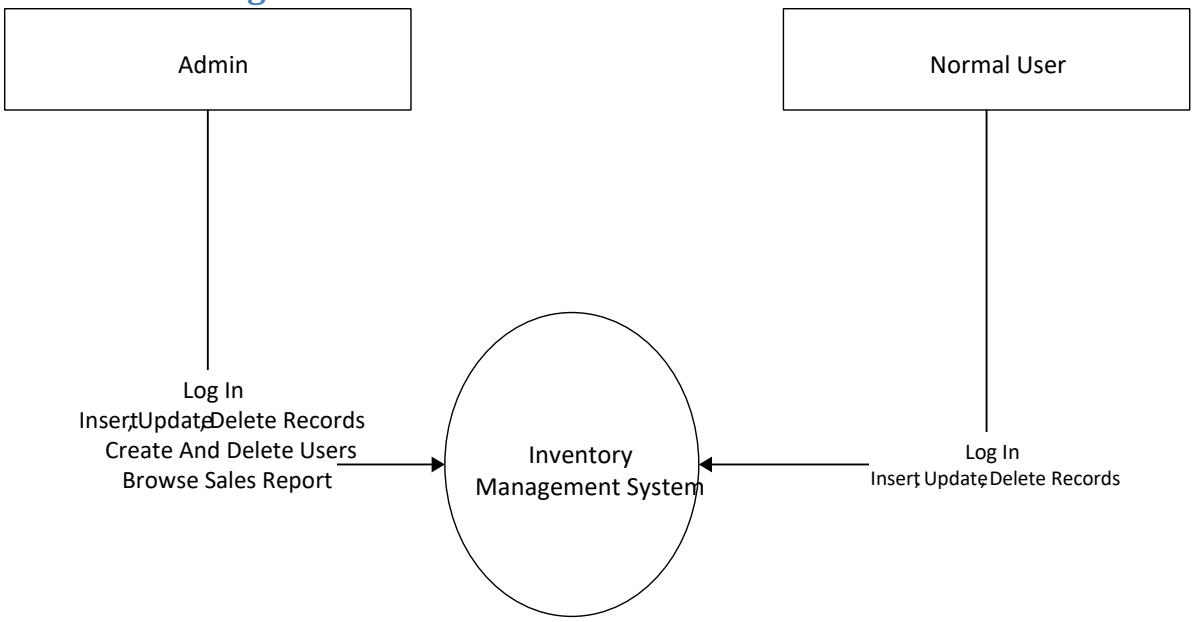
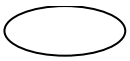
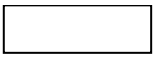
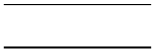


Fig: Context Diagram for IMS

2.3 Level-0 DFD

The actual way data flow in the system was done.

TBL 3.1: DFD symbols and their descriptions

Symbols	***Description***
	*Process*
	Data Flow
	*Entity*
	*Database*

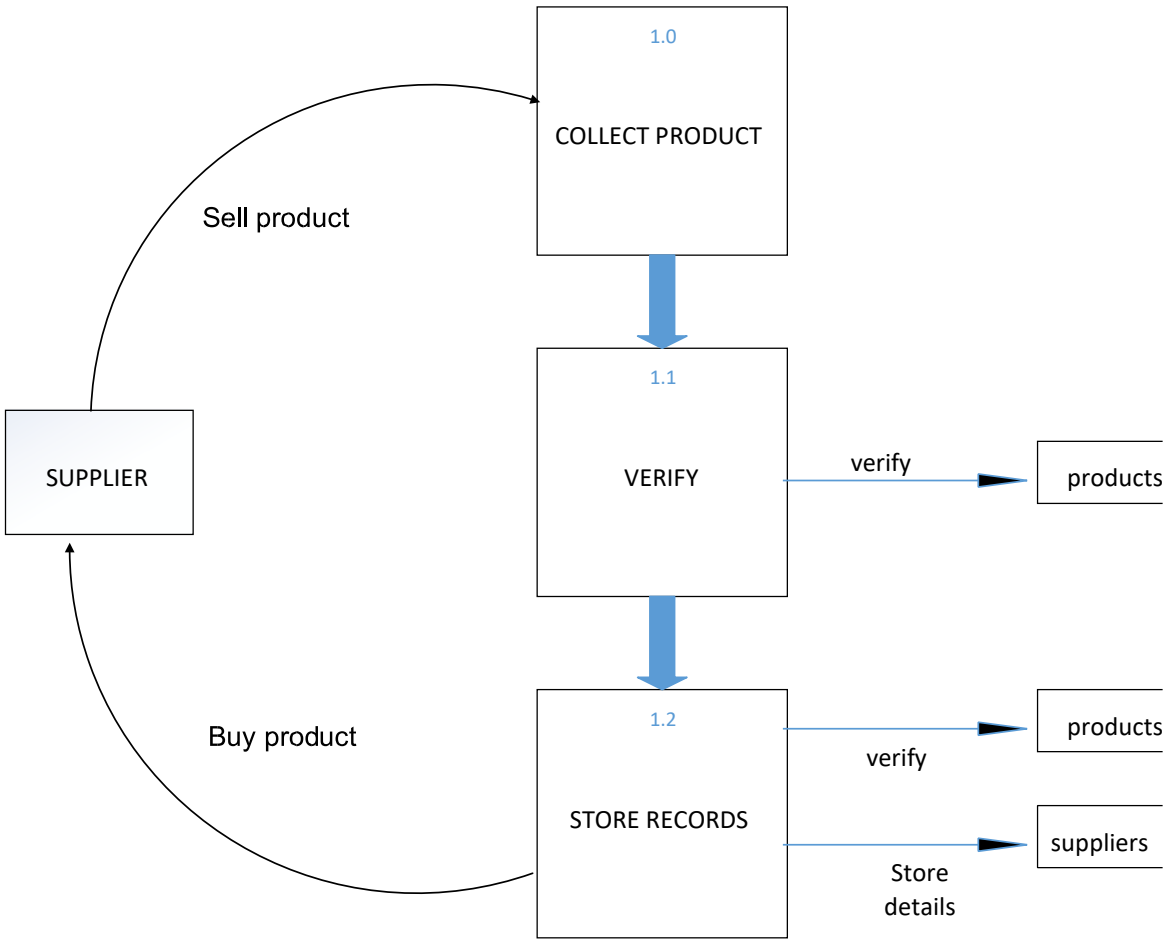


Fig: Collecting products from suppliers

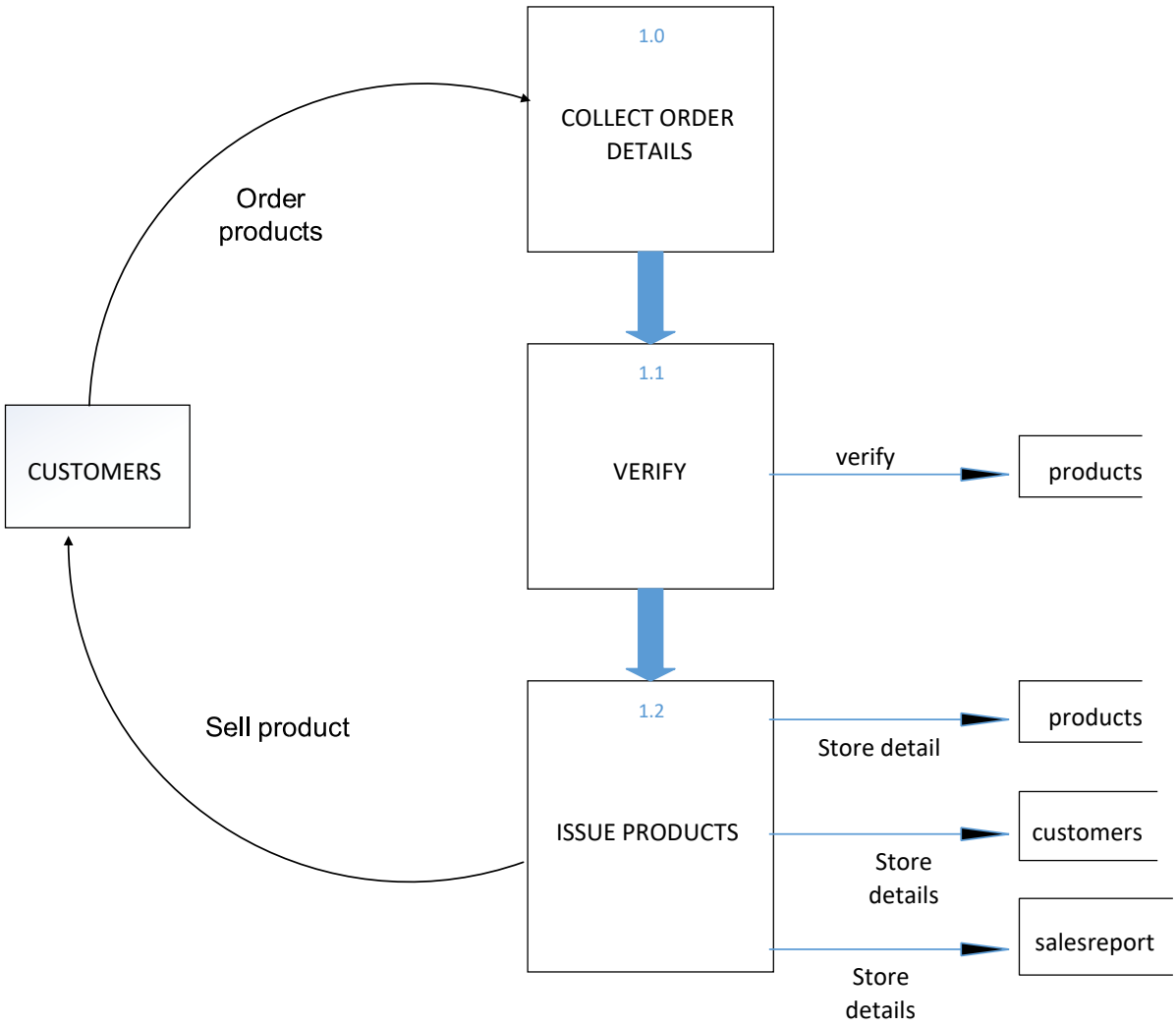


Fig: Selling products to customers

2.4 Sequence Diagram

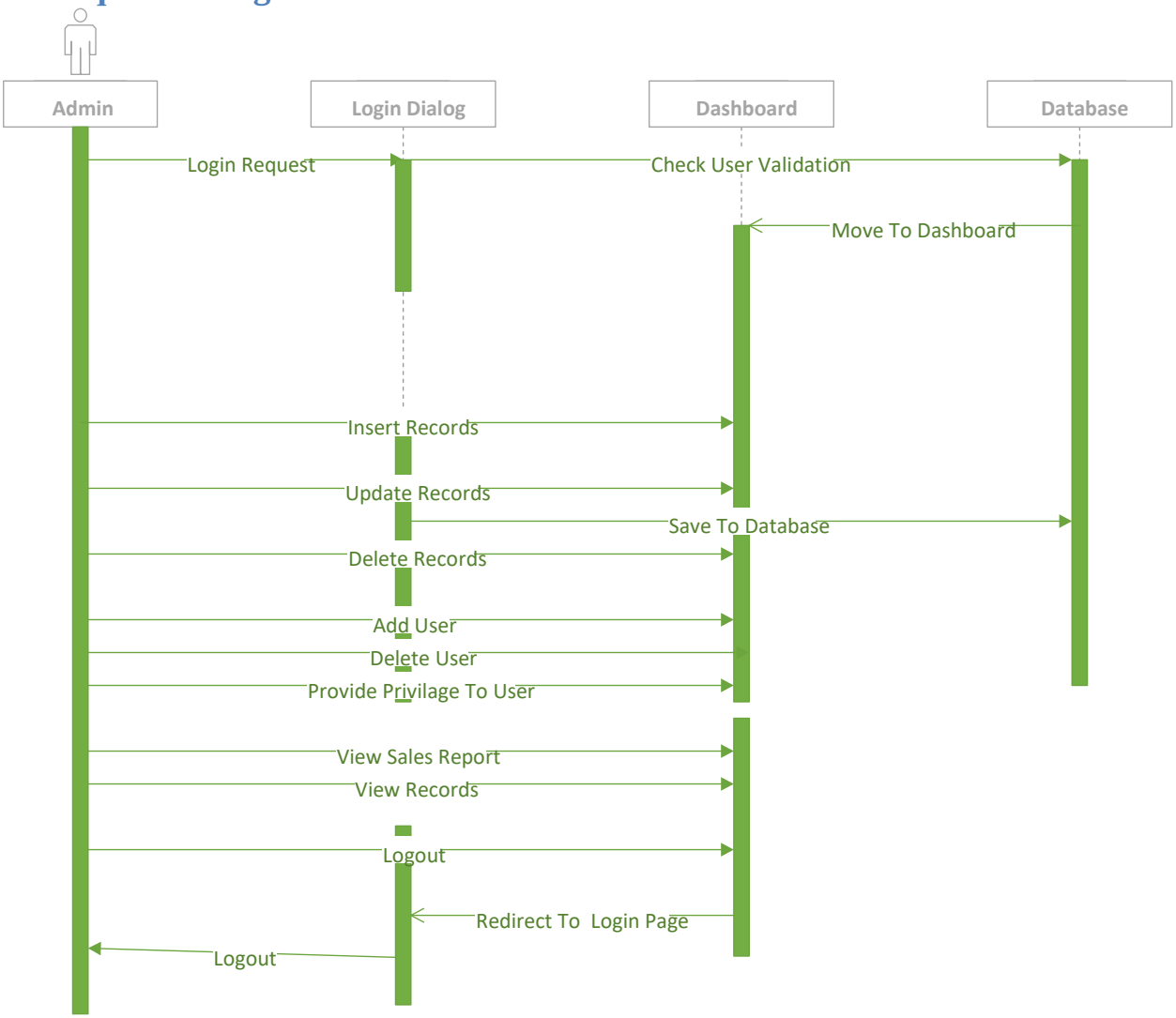


Fig: Sequence diagram for Admin

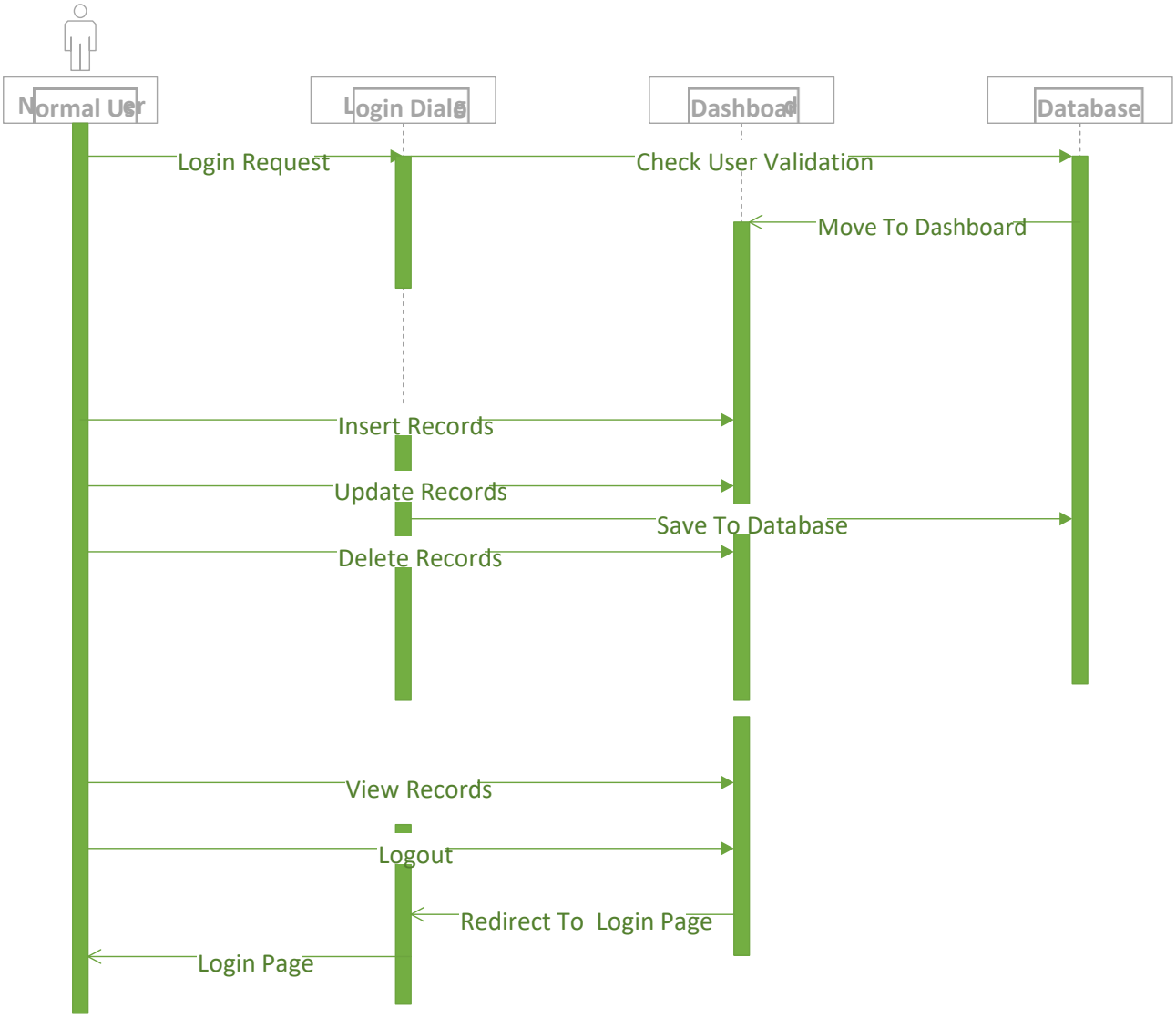


Fig: Sequence diagram for Normal user

2.5 System Flowchart

A flow chart was used to express how the system works. The activity flow of the system for both actors are outlined below.

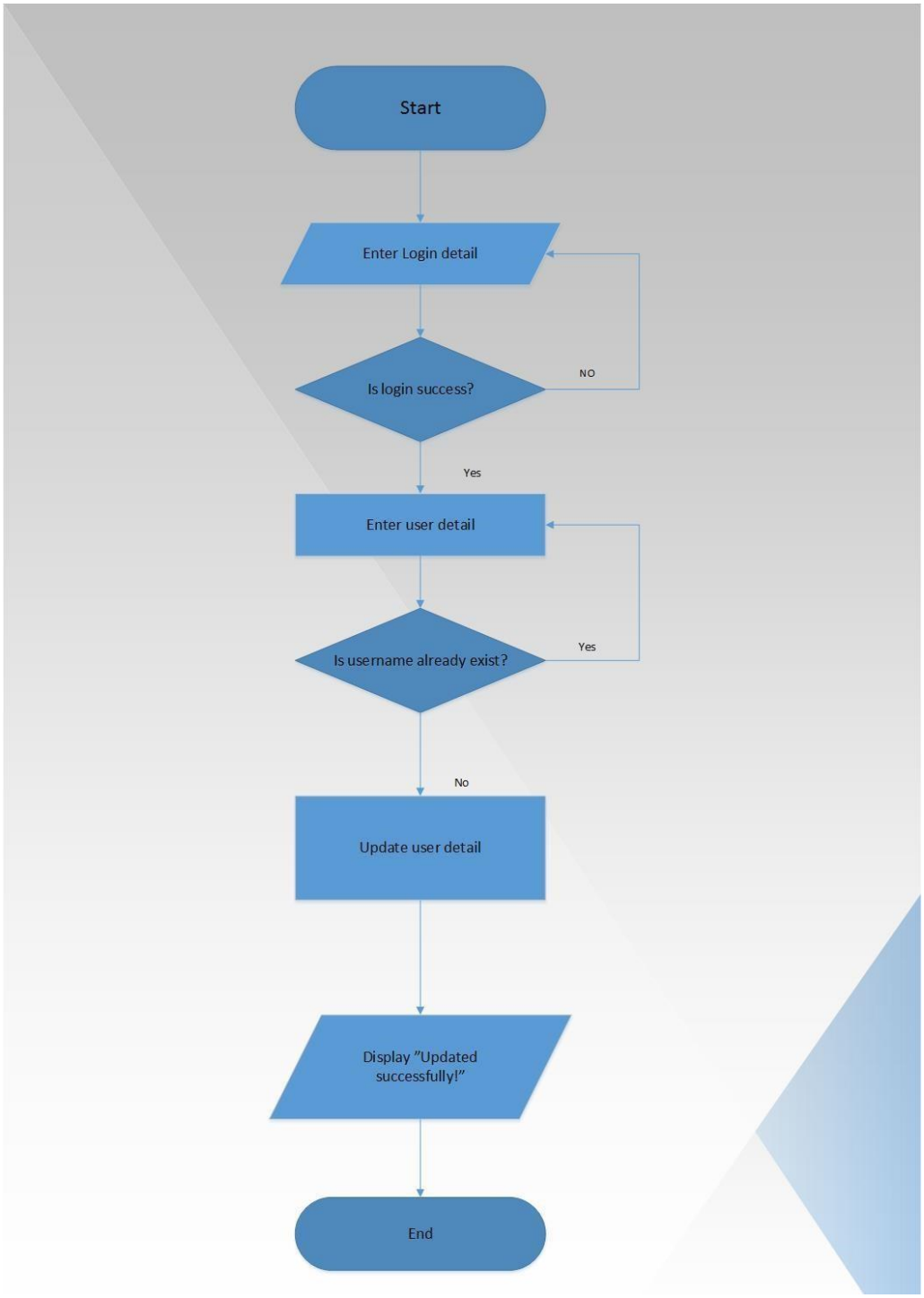

Start
Enter Login detail
Is login success?
NO
Yes
Enter user detail
Is username already exist?
Yes
No
Update user detail
Display "Updated successfully!"
End

Fig: Change user details

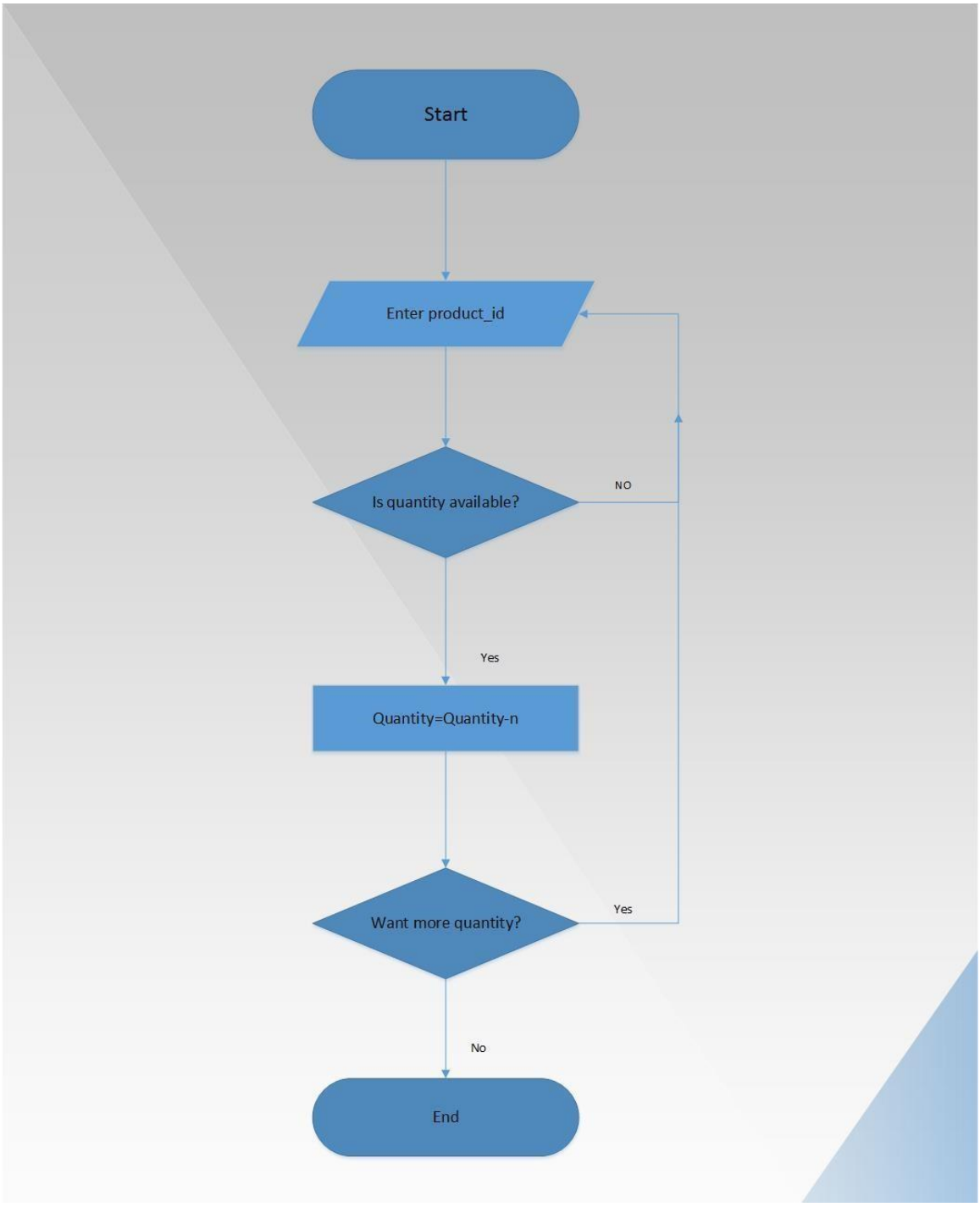


Fig: Selling products to customers

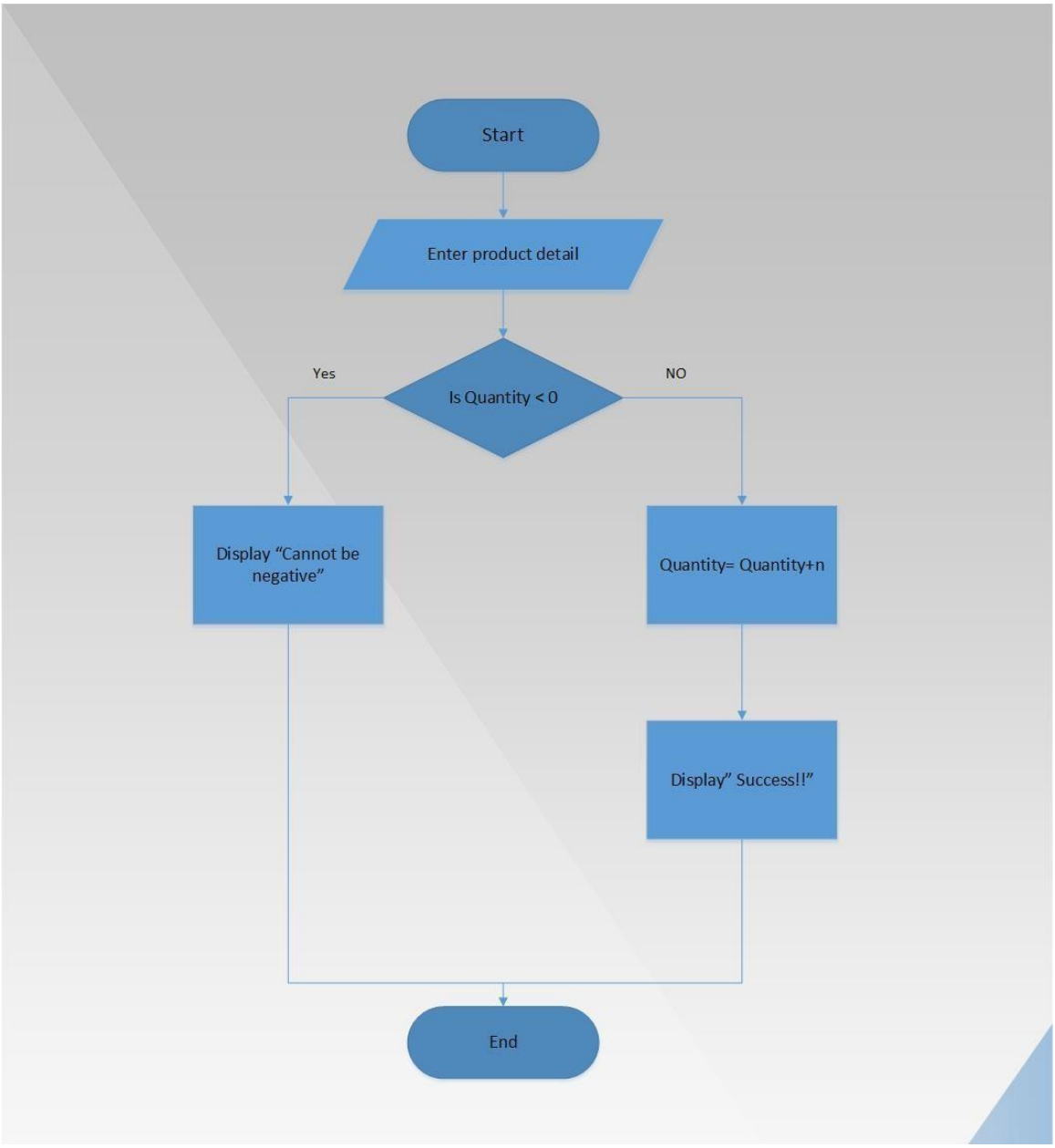


Fig: Receiving products from suppliers

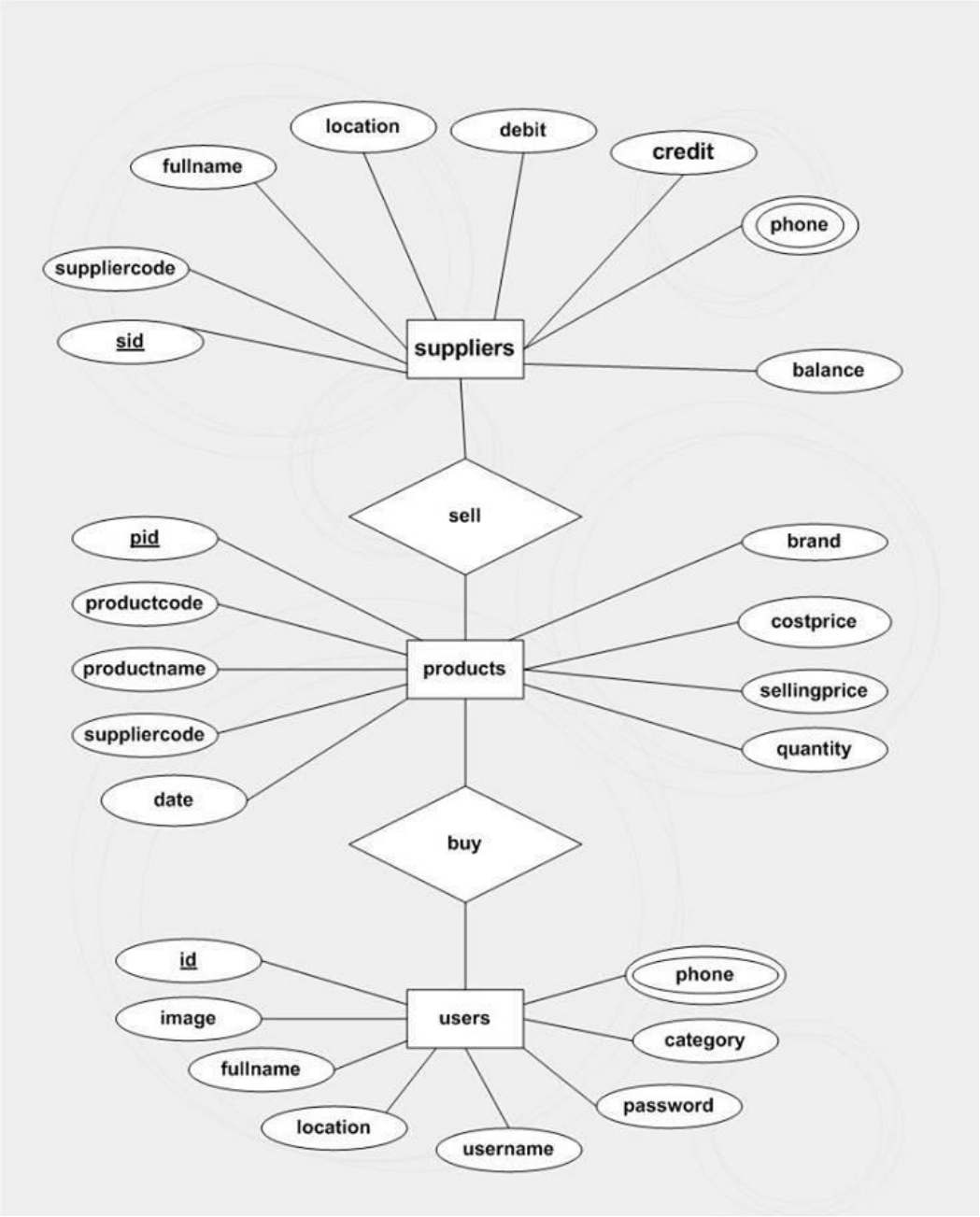
3.3 Entity Relation Diagram (ERD)

For the development of the system, initially all the entities and there interrelation were identified. On the basis of that an ERD was developed. ERD consists of these components:

Rectangles Represent entity sets

Ellipses	Represent attributes.
Underline Ellipse	Represent Primary Key
Diamonds	Represent relationship sets.
Lines	Link attributes to entity sets, entity sets to relationship sets

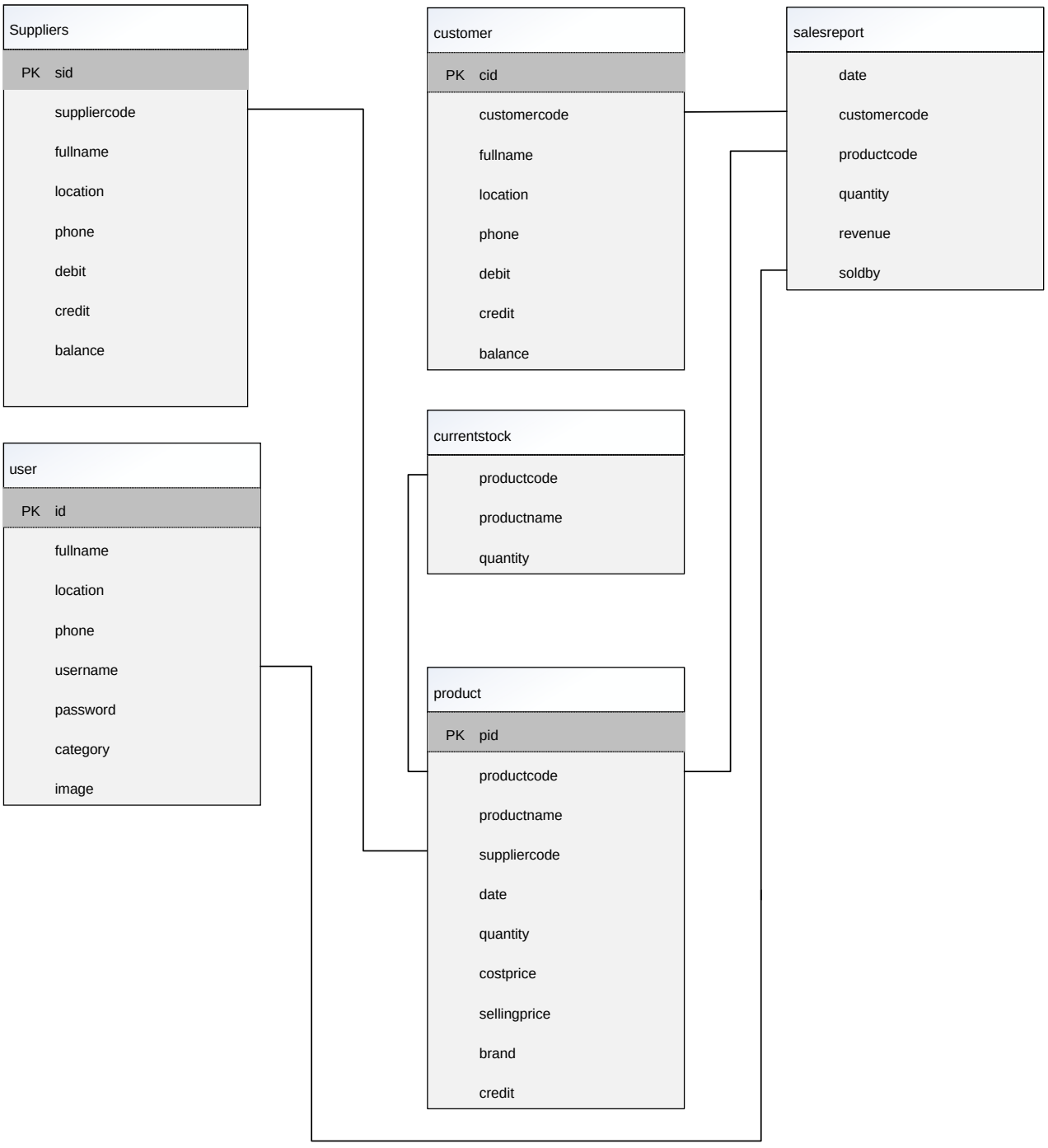
Selling products to customers



Buying product from suppliers

3.3 Schema Diagram

With the reference of DFD and ERD, schema diagram was constructed. The schema diagram actually shows the tables, fields and relation between them. The diagram is constructed before actual coding of database. On the basis of this diagram, database is realized. Schema diagram shows which data will be stored where and what will be the relation between tables and fields.



3.4 Database Tables

Suppliers	
sid(PK)	int
suppliercode	varchar
fullname	varchar
location	varchar
debit	double
credit	double
balance	double

customers	
cid(PK)	int
suppliercode	varchar
fullname	varchar
location	varchar
debit	double
credit	double
balance	double

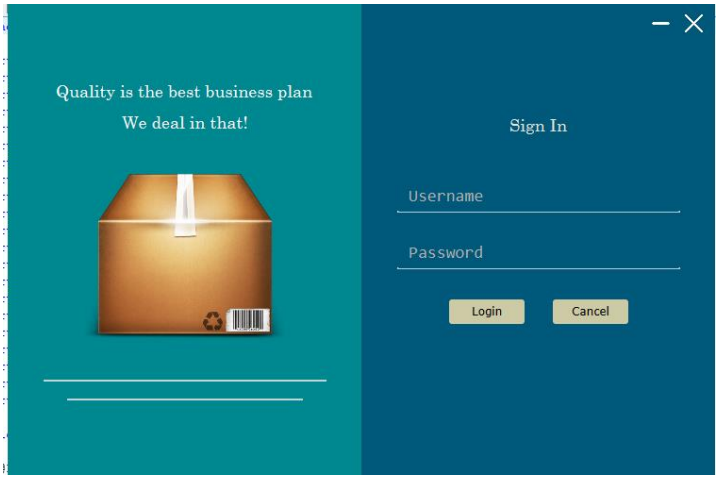
products	
pid(PK)	int
productcode	varchar
productname	varchar
suppliercode	varchar
date	varchar
quantity	int
costprice	double
sellingprice	double
brand	varchar

currentstocks	
productcode	varchar
productname	varchar
quantity	int

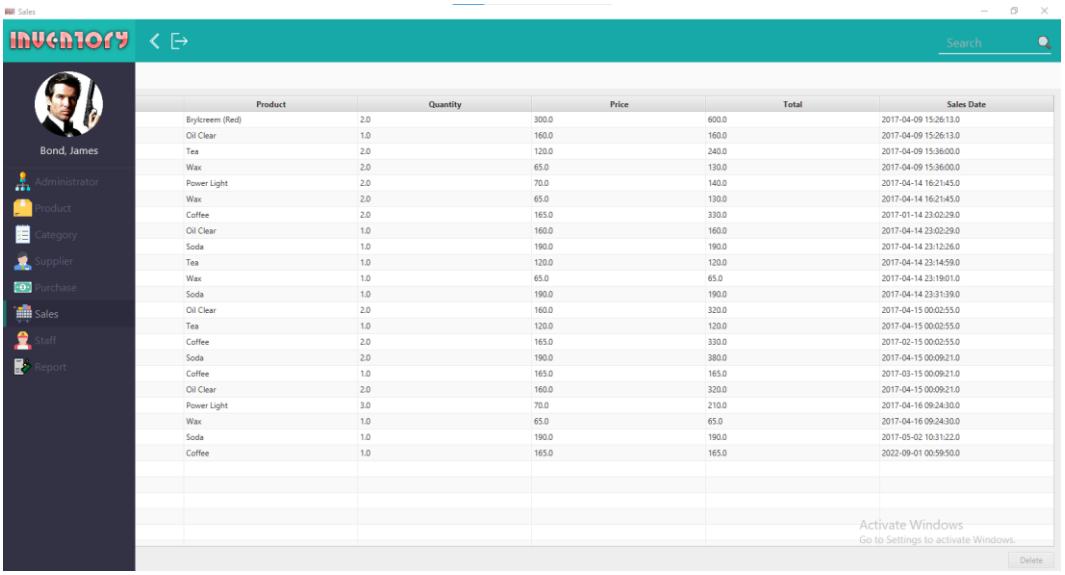
salesreport	
date	varchar
customercode	varchar
productcode	varchar
quantity	int
revenue	double
soldby	varchar

4.3 Execution Snapshot

Login Dialog:

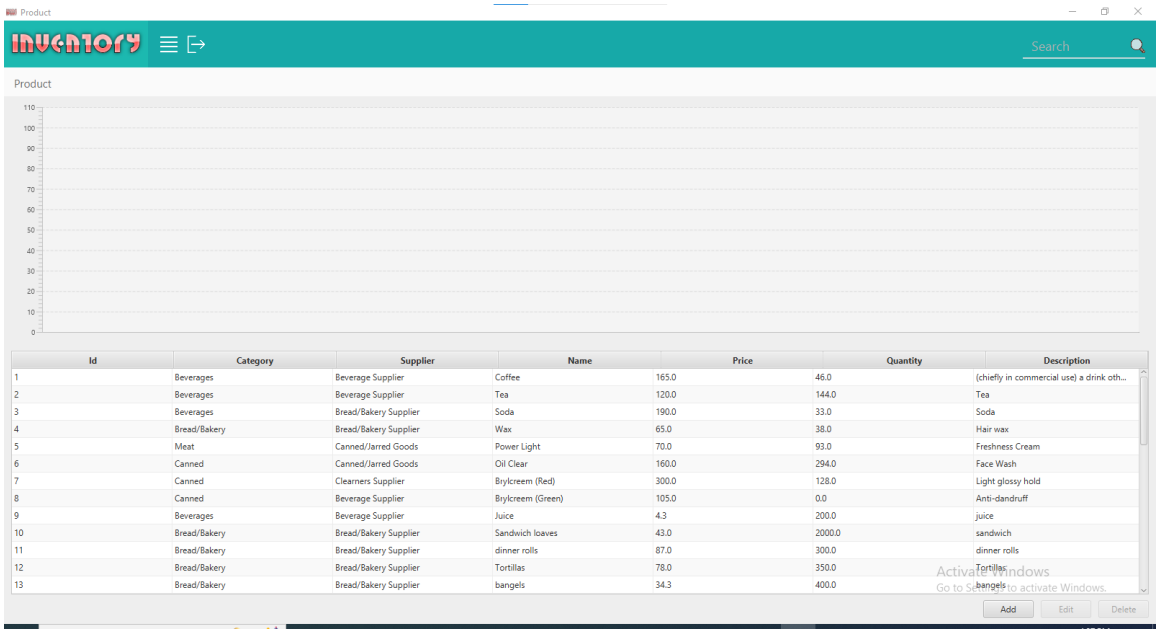


Dashboard:

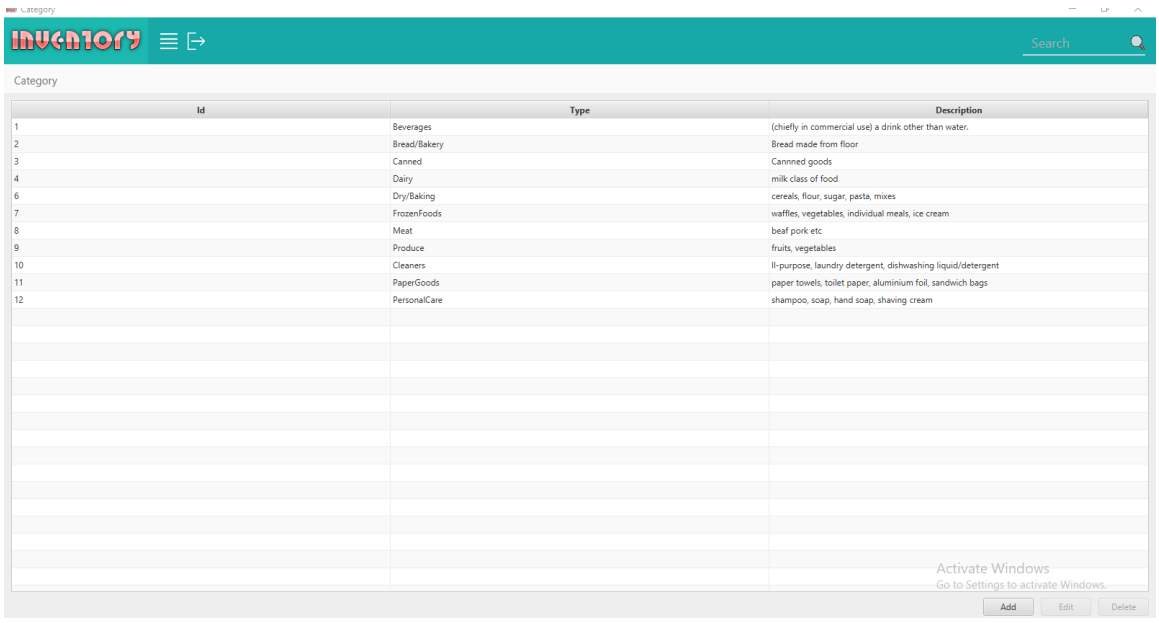


Suppliers:

Inventory Management System

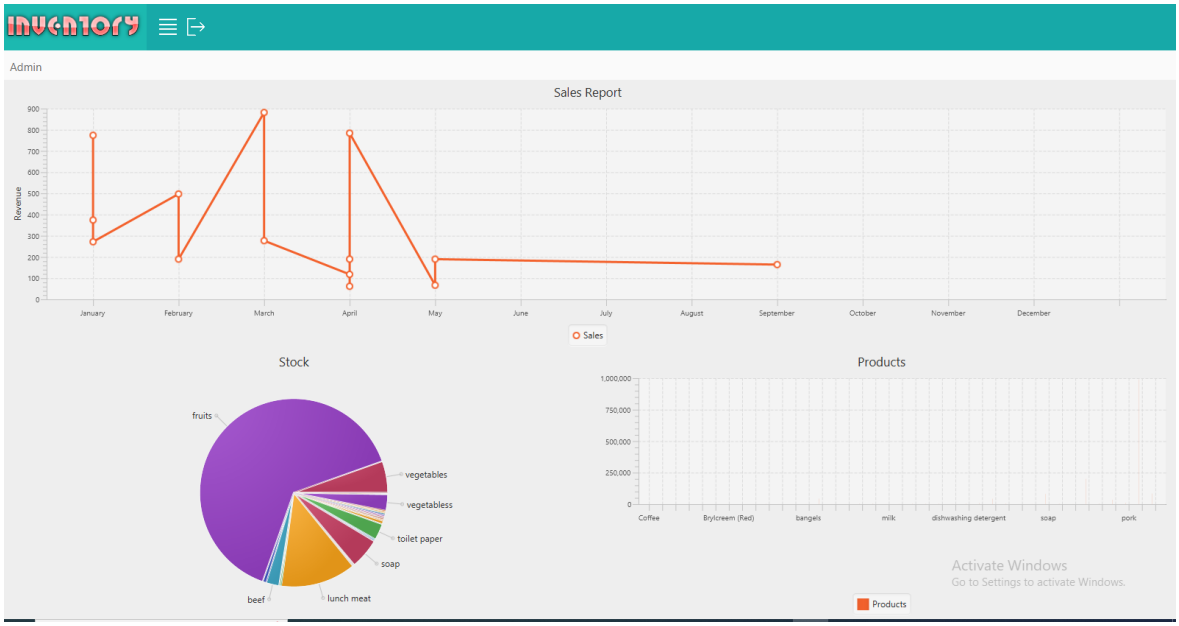


Products:

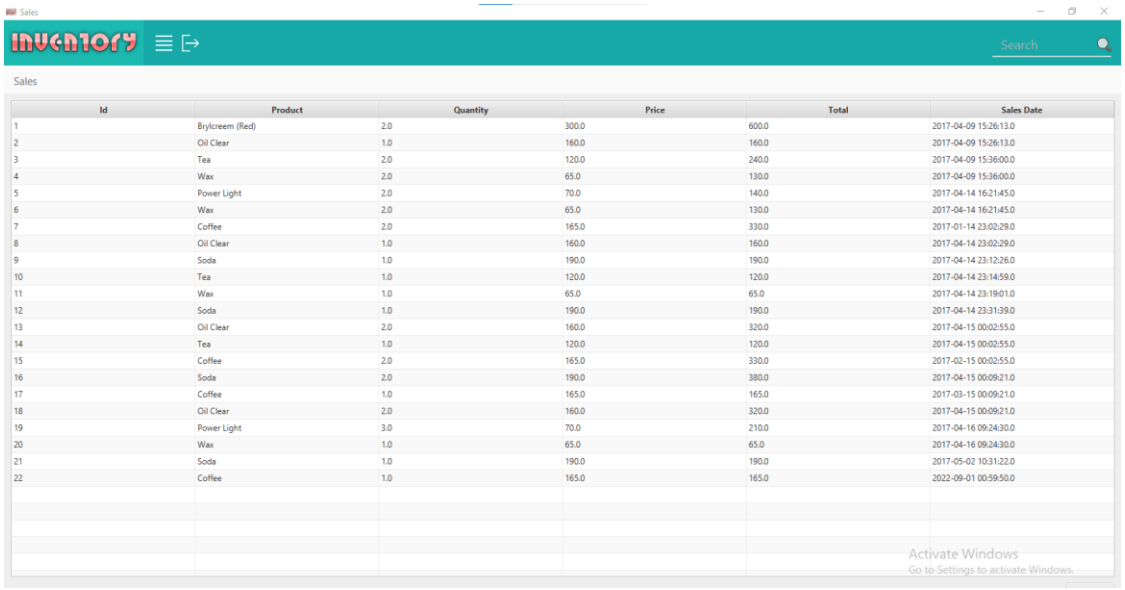


category:

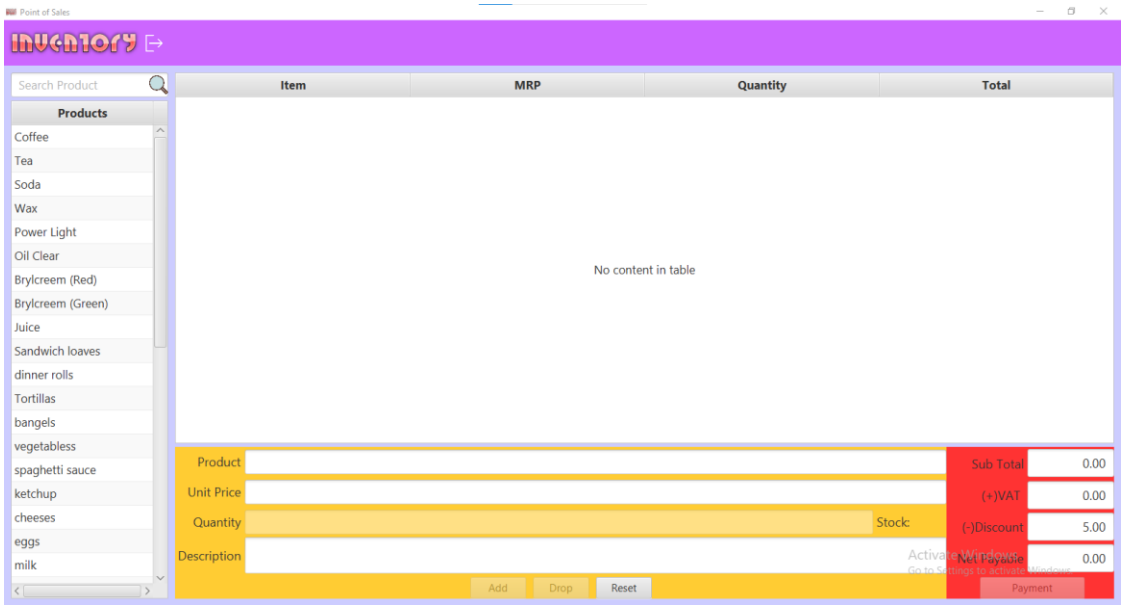
Inventory Management System



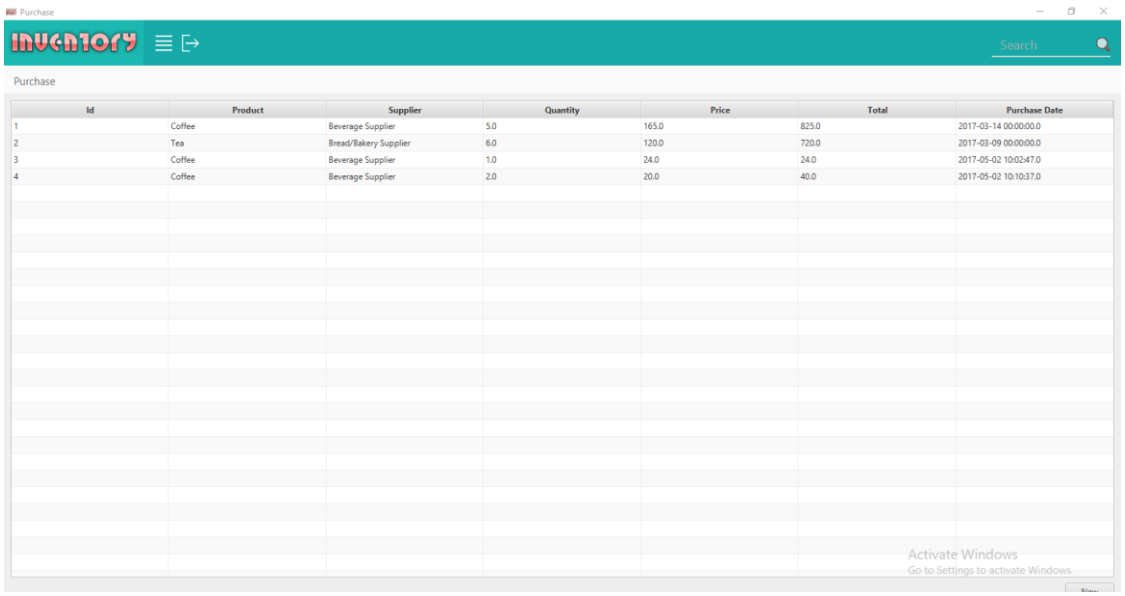
Current Stocks:



Sales Report:



Users:



purchase Details:

4. Conclusion

The Inventor System is developed for recording and managing the inventory of an organization. It can be tailored to suit different organization's objective with only slight modification. System update is easy. And the backend works smoothly.

The project has taught us how to develop real life software from the data structure course.

Some of the lesson learnt from the project are: -

- Working as a team is very crucial
- Time conscious and discipline is very important.
- Communication skill is important.