VIDUSH SOMANY INSTITUTE OF TECHNOLOGY AND RESEARCH, KADI

A Project Report

"Inventory Management System"

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Computer Science & Engineering

and

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BY

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Project Profile

Project Title:	Inventory Management System
Goal of System:	The project aims at providing an efficient interface to the organizations for managing their inventory based on each item sold. The basic idea involved here is that each item is linked to its atomic ingredients which are stored in a database.
Project Duration:	SEVENTH SEMESTER
Team Size:	Four Students
Internal Project Guide:	Prof. ANKIT VAGHELA
Front End Tool:	HTML & CSS & BOOTSTRAP
Back End Tool:	PYTHON & DJANGO

ACKNOWLEDGEMENT

With immense pleasure we would like to present this report on my topic "INVENTORY MANAGEMENT SYSTEM." We are thankful to all that have helped us a lot for successful completion of our project and providing us encouragement for completing the work.

We are thankful to our Dr. Hiren B. Patel, Principal Vidush Somany Institute of Technology and Research for his valuable guidance. We also express our gratitude to our internal faculty guide Prof. Ankit Vaghela and Head of the CSE Department Prof. Vimal Bhatt & Head of the IT Department Prof. NehalShah, for providing guidance throughout my work giving us their valuable time.

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ABSTRACT

This Python Django inventory system project is particularly concerned with managing stocks, sales, and purchases. Additionally, the system uses graphical displays to provide selected overall data. The technology also enables the management of inventory records. Evidently, the components of this project is the Admin Panel and User Panel. An administrator of this web program, has total authority over the system. Admin can oversee sales, suppliers, inventories, and more. Each and every section in this document contains its own unique information, including a name and other crucial details. Adding inventory details is the initial step in managing this system. For each, there are auxiliary fields like name and amount. In order to keep the online inventory management system project in Python Django with source code files.

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CHAPTER-1
INTRODUCTION

1.1. INTRODUCTION

Inventory Management System project is a web-based application that helps a certain business or shop to manage their stock or inventory online. This project allows the business management to easily store, record, monitor their product stocks. It was developed in Python using the Django Framework. It has a simple and pleasant functionality.

The "Inventory Management System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly. Inventory Management System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources.

Every organization, whether big or small, has challenges to overcome and managing the information of Vendor, Inventory, Cost, and Order. Every Inventory Management System has different Inventory needs, therefore we design exclusive employee management systems that are adapted to your managerial requirements. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals. Also, for those busy executive who are always on the go, our systems come with remote access features, which will allow you to manage your workforce anytime, at all times. These systems will ultimately allow you to better manage resources.

1.2. AIM

The main objective of the Project on Inventory Management System is to manage the details of Inventory, Vendor, Product, Cost, Order. It manages all the information about Inventory, Order. The project is totally built at administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the Inventory, Vendor, Product. It tracks all the details about the Product, Cost, Order.

1.3. Functionalities provided by Inventory Management System are as follows:

- Manage the information of Vendor
- Shows the information and description of the Inventory, Product
- To increase efficiency of managing the Inventory, Vendor
- Manage the information of Inventory
- Editing, adding and updating of Records is improved which results in proper resource management of Inventory data.
- Manage the information of Cost
- Integration of all records of Order.

1.4. Project Purpose

The purpose of the Inventory system is to serve customers efficiently. This study aims to help the staff/employees of this system to make their work faster by using the system where they can monitor the remaining products in the records where they can see in the database. The system will provide a good service to the company like better transaction process that brings bigger profit.

CHAPTER-2
TECHNOLOGY

2.1. About Tools and Technology

- The Inventory Management System is created using Python Django Framework. The system is built fully in Django Framework in back-end and HTML, CSS and JavaScript, Bootstrap in front-end. Django is a Python web framework for building fast, safe websites. Django is a web framework designed by experienced developers that handles much of the heavy lifting so you can focus on app development.
- Visual Studio code is a source code editor. It supports programming and markup languages. Plugins, generally community-built and maintained under free-software licenses, increase system capabilities. Python API helps Visual Studio Code plugins. Web apps are accessed using a browser and network connection.
- SQLite is used to construct embedded software for TVs, phones, and cameras. It handles low-to-medium HTTP traffic. SQLite compresses files, reducing metadata. SQLite is a temporary database used to process data in apps.

CHAPTER-3
SYSTEM REQUIREMENT STUDY

3.1. Hardware Requirements

NAME OF COMPONENT	SPECIFICATION
PROCESSOR	Pentium Ill 630MHz
RAM	8 GB
HARD DISK	20 GB
MONITOR	15” colour monitor
KEYBOARD	122 keys

3.2. Software Requirement

NAME OF COMPONENT	SPECIFICATION
OPERATING SYSTEM	Windows 10, Windows7
LANGUAGE	HTML, CSS, Python & Django
DATABASE	SQLite
BROWSER	Brave, MS Edge, Chrome, etc.
WEB SERVER	IIS Server
SOFTWARE DEVELOPMENT KIT	Visual Studio

CHAPTER-4
SYSTEM ANALYSIS

4.1.Requirement of New System

The Software Requirements Specification is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavioural description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

The proposed system has the following requirements:

- System needs store information about new entry of Inventory.
- System needs to help the internal staff to keep information of Vendor and find them as per various queries.
- System need to maintain quantity record.
- System need to keep the record of Product.
- System need to update and delete the record.

4.2. Features of New System

- Product and Component based.
- Creating & Changing Issues at ease.
- Query Issue List to any depth.
- Reporting & Charting in more comprehensive way.
- Accuracy in work.
- Easy & fast retrieval of information.
- Well-designed reports.
- Decrease the load of the person involve in existing manual system.
- Access of any information individually.
- Work becomes very speedy.
- Easy to update information.

4.3. System Activity (Use Case Diagram)

To model a system, the most important aspect is to capture the dynamic behaviour. Dynamic behaviour means the behaviour of the system when it is running/operating.

Only static behaviour is not sufficient to model a system rather dynamic behaviour is more important than static behaviour. In UML, there are five diagrams available to model the dynamic nature and use case diagram is one of them. Now as we have to discuss that the use case diagram is dynamic in nature, there should be some internal or external factors for making the interaction.

These internal and external agents are known as actors. Use case diagrams consists of actors, use cases and their relationships. The diagram is used to model the system/subsystem of an application. A single use case diagram captures a particular functionality of a system.

Hence to model the entire system, a number of use case diagrams are used.

The purpose of use case diagram is to capture the dynamic aspect of a system. However, this definition is too generic to describe the purpose, as other four diagrams (activity, sequence, collaboration, and Statechart) also have the same purpose. We will look into some specific purpose, which will distinguish it from other four diagrams.

Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements. Hence, when a system is analysed to gather its functionalities, use cases are prepared and actors are identified.

When the initial task is complete, use case diagrams are modelled to present the outside view.

In brief, the purposes of use case diagrams can be said to be as follows −

- Used to gather the requirements of a system.
- Used to get an outside view of a system.
- Identify the external and internal factors influencing the system.
- Show the interaction among the requirements are actors.

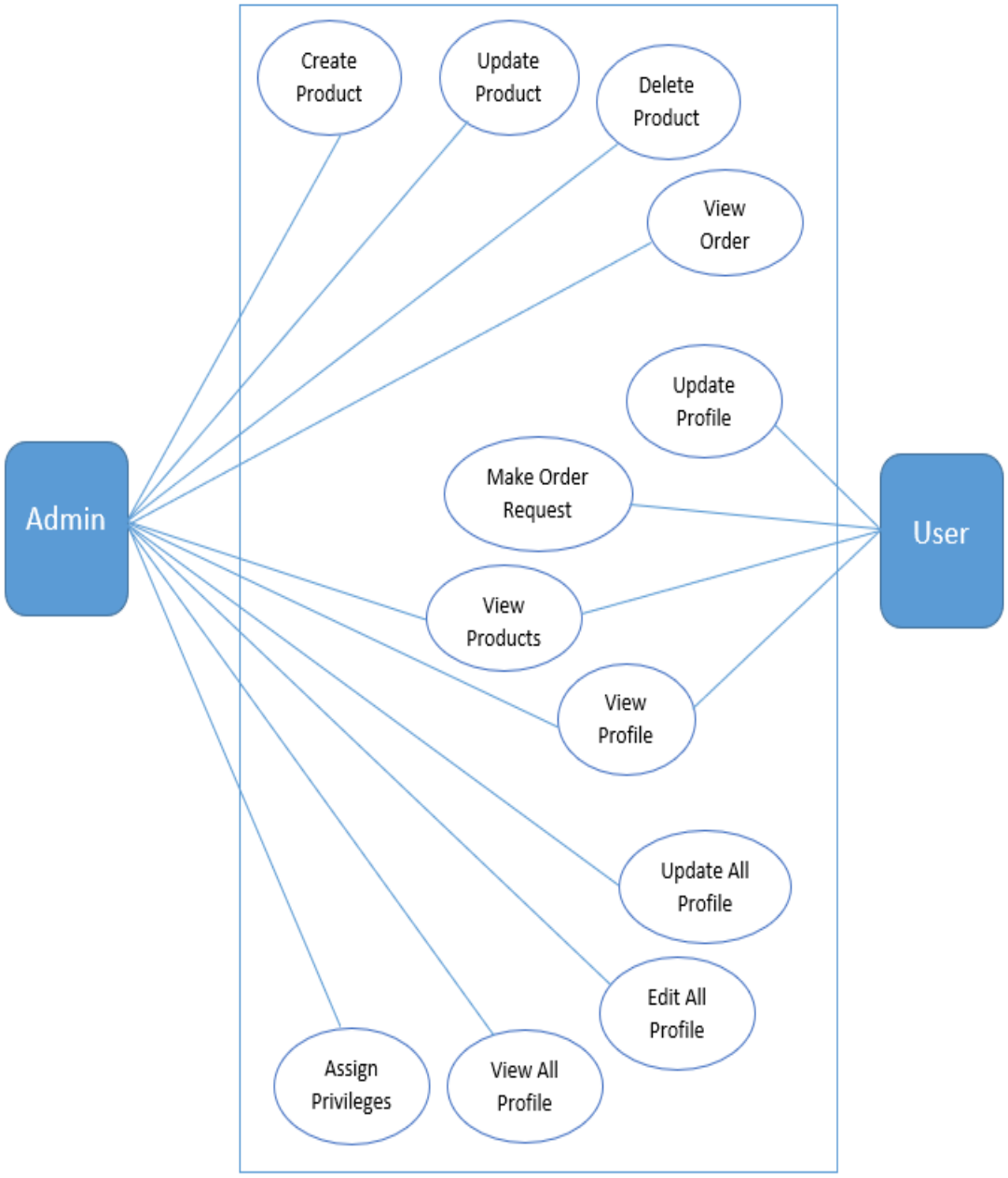

Figure 1: Use Case Diagram

4.4. DFD Diagram

DFD is the abbreviation for **Data Flow Diagram**. The flow of data of a system or a process is represented by DFD. It also gives insight into the inputs and outputs of each entity and the process itself. DFD does not have control flow and no loops or decision rules are present. Specific operations depending on the type of data can be explained by a flowchart. Data Flow Diagram can be represented in several ways. The DFD belongs to structured-analysis modeling tools. Data Flow diagrams are very popular because they help us to visualize the major steps and data involved in software-system processes.

Rules for creating DFD

- The name of the entity should be easy and understandable without any extra assistance (like comments).
- The processes should be numbered or put in ordered list to be referred easily.
- The DFD should maintain consistency across all the DFD levels.
- A single DFD can have maximum processes up to 9 and minimum 3 processes.

Levels of DFD

DFD uses hierarchy to maintain transparency thus multilevel DFD's can be created. Levels of DFD are as follows:

- 0-level DFD
- 1-level DFD
- 2-level DFD

4.4.1. DFD-0 Diagram

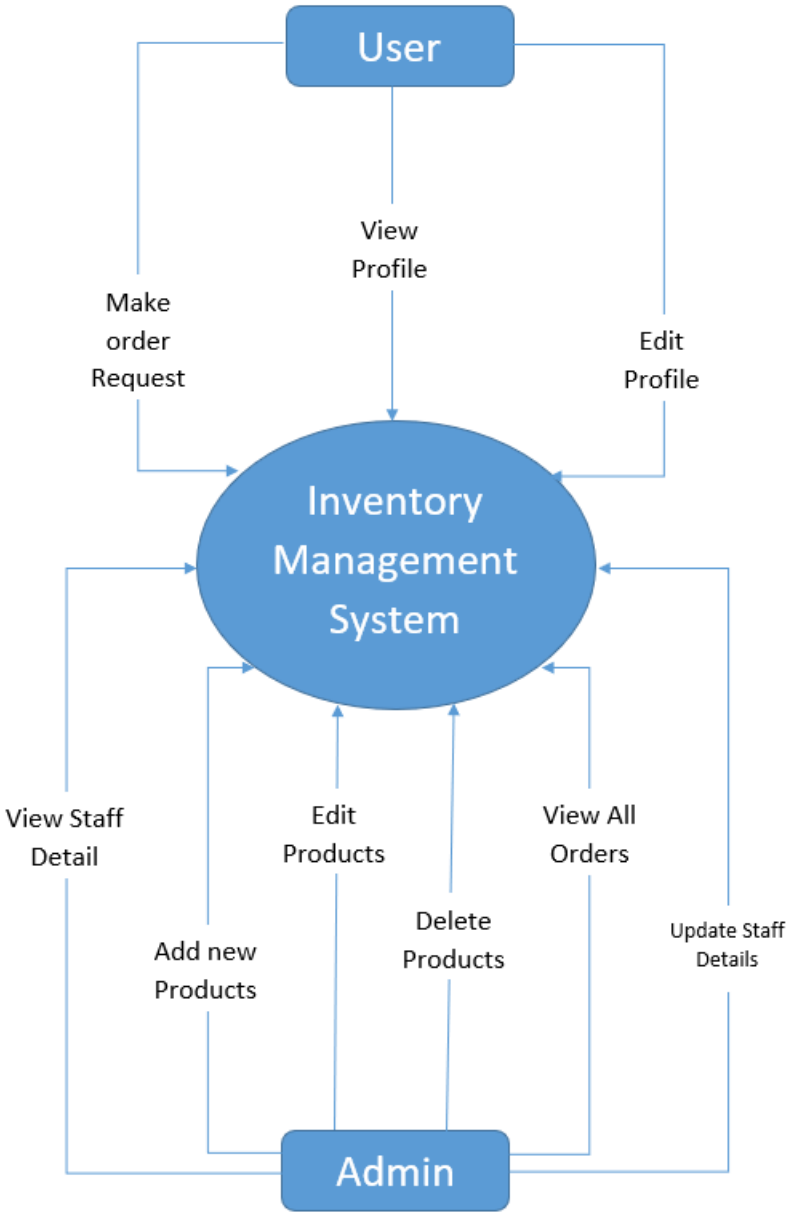

Figure 2: DFD 0 – Diagram

4.4.2. DFD-1 Diagram

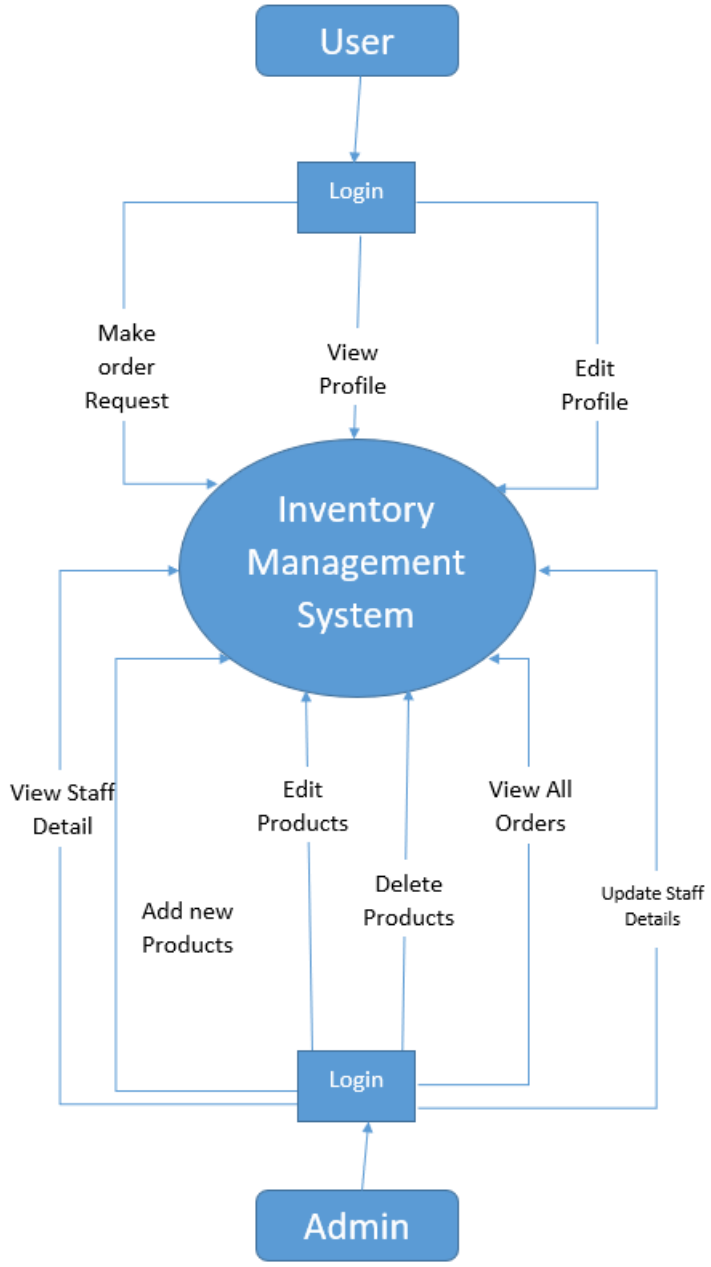

Figure 3: DFD 1 – Diagram

4.4.3. DFD-2 Diagram

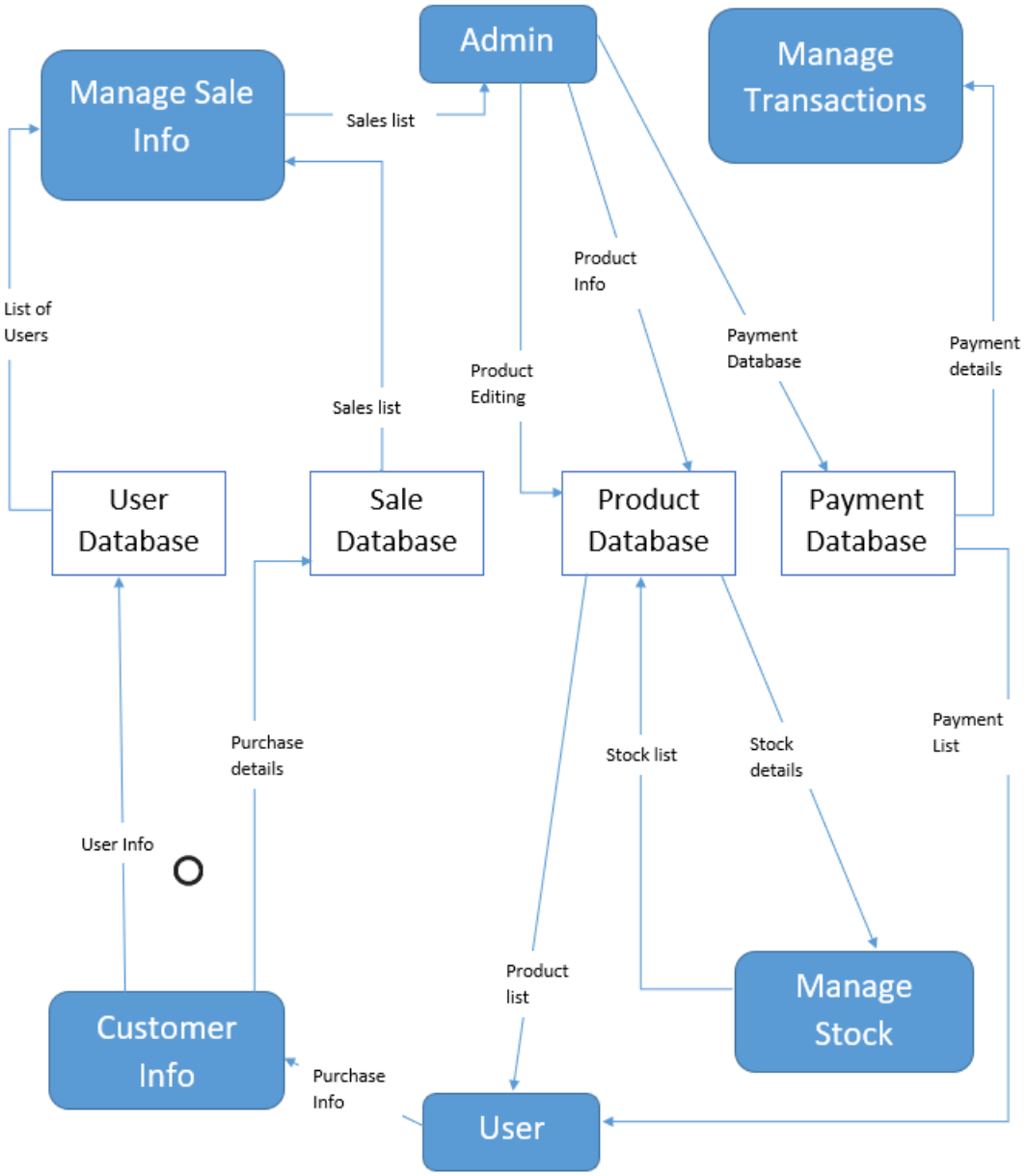

Figure 4: DFD 2 – Diagram

4.5. ER Diagram

ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.

ER Diagrams contain different symbols that use rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships.

At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique. The purpose of ER Diagram is to represent the entity framework infrastructure.

Here, are prime reasons for using the ER Diagram:

- Helps you to define terms related to entity relationship modelling.
- Provide a preview of how all your tables should connect, what fields are going to be on each table.
- Helps to describe entities, attributes, relationships.
- ER diagrams are translatable into relational tables which allows you to build databases quickly.
- ER diagrams can be used by database designers as a blueprint for implementing data in specific software applications.
- The database designer gains a better understanding of the information to be contained in the database with the help of ERP diagram.
- ERD Diagram allows you to communicate with the logical structure of the database to users.

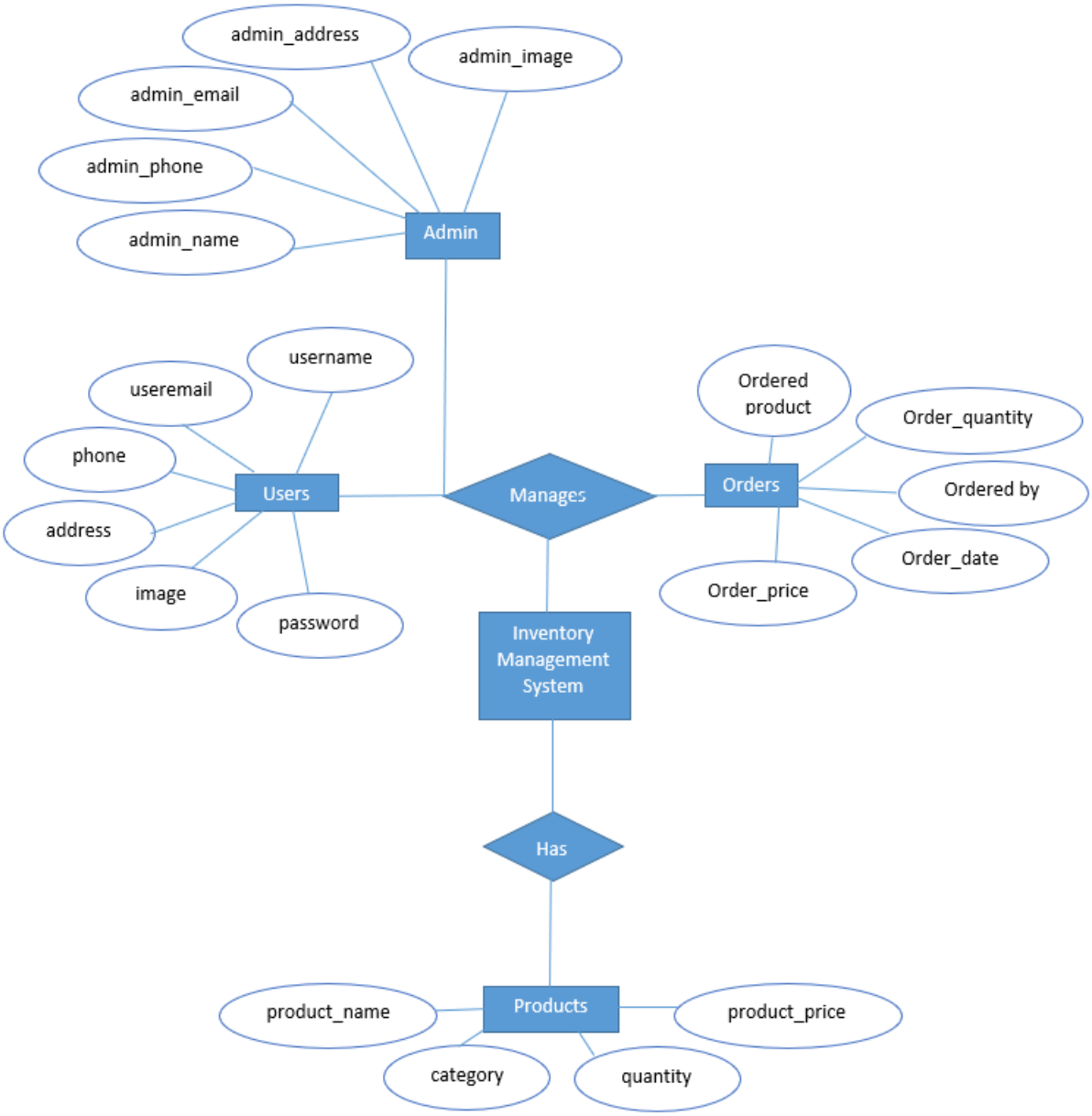

Figure 5: ER-Diagram

CHAPTER-5
IMPLEMENTATION

ADMIN DASHBOARD:-

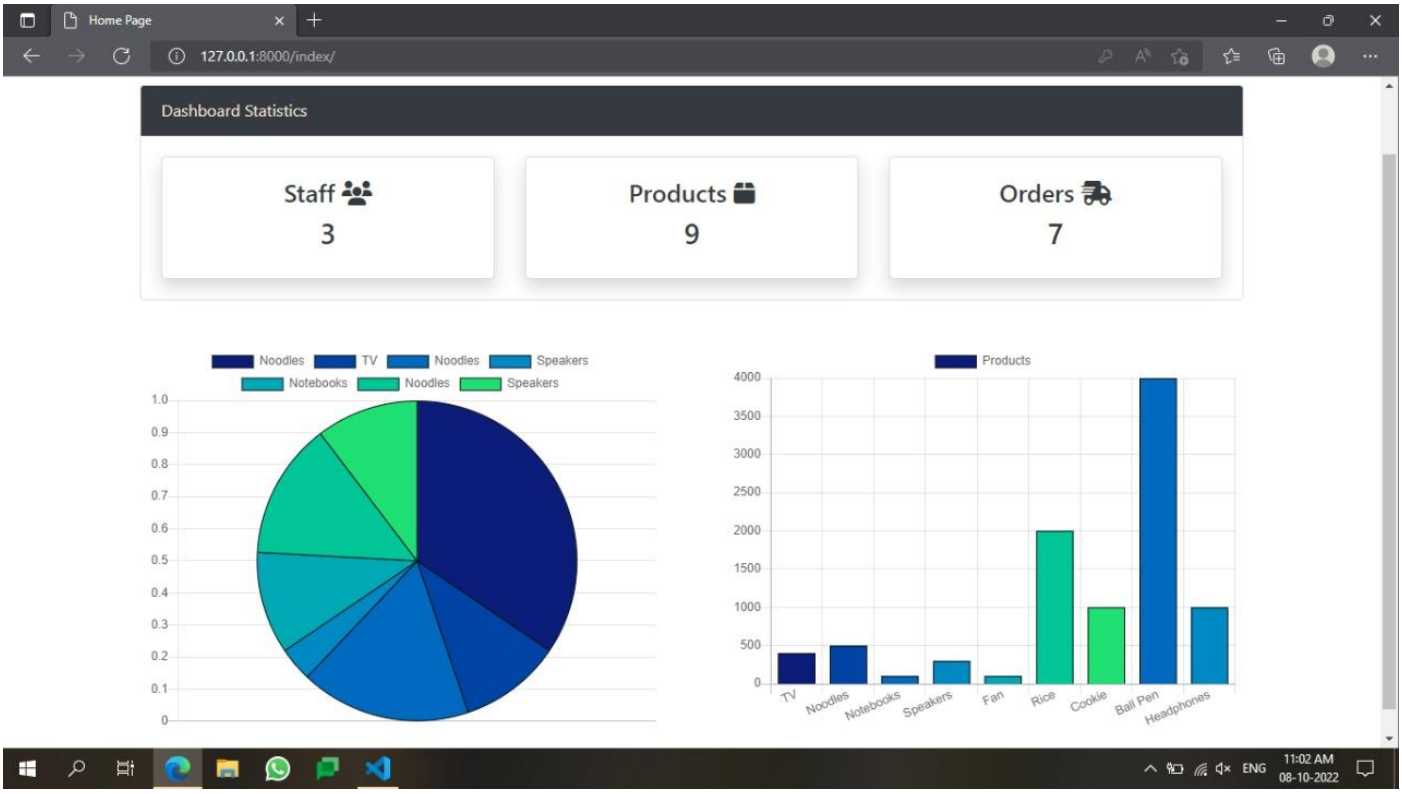

Figure 6: ADMIN Diagram

Admin interface display graph of order and products also have record

of number of products, order and staff.

USER DASHBOARD:-

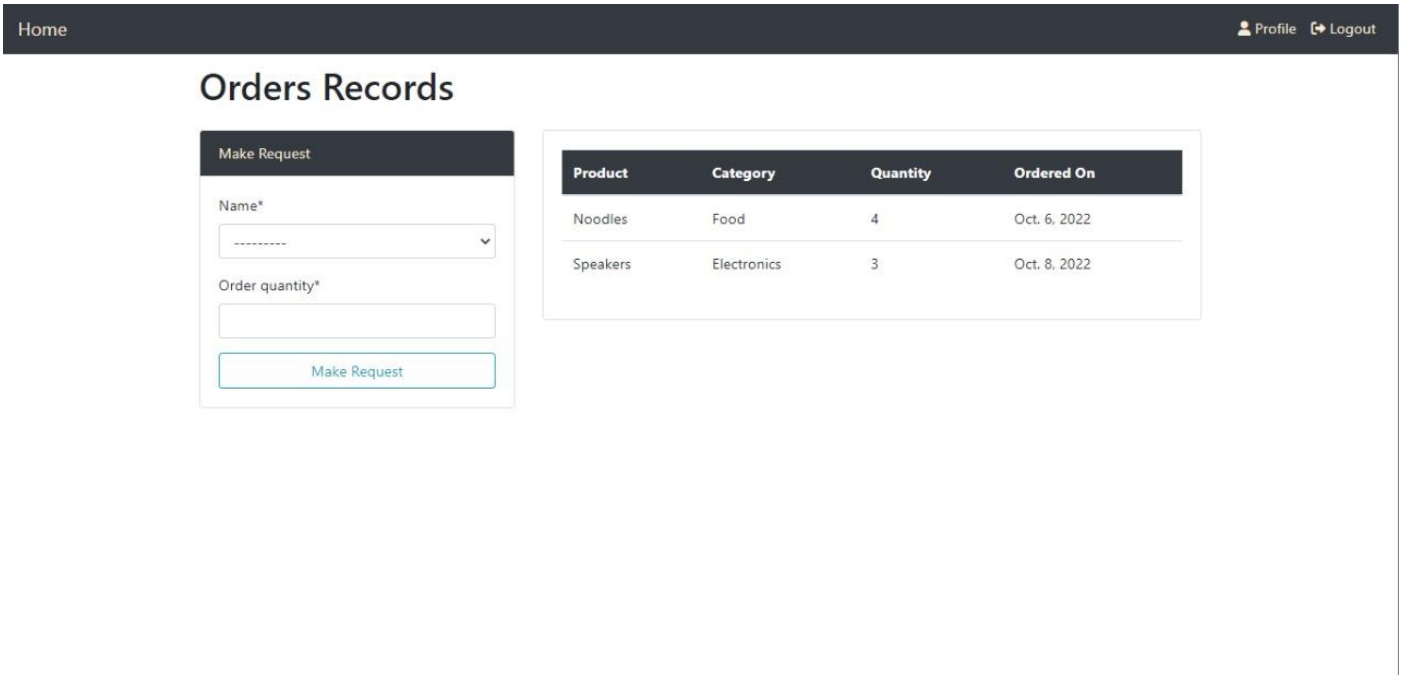

Figure 7: USER Diagram

User can make order view the details of her orders and edit it profile.

CONCLUSION

- To conclude, Inventory Management System is a simple desktop based application basically suitable for small organization.
- It has every basic items which are used for the small organization.
- Our team is successful in making the application where we can update, insert and delete the item as per the requirement.
- This application also provides a simple report on daily basis to know the daily sales and purchase details.

REFERENCE

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