SPEAK & SHOP

Submitted in partial fulfillment for the award of the degree of

Bachelor of Technology

In

Department of Computer Science & Engineering

Session: 2021-22

Submitted by

Mohit Kumar Gupta   **(1834210057)**
Pranav Srivastava   **(1834210066)**
Prateek Singh   **(1834210067)**
Pratyush Sharma   **(1834210068)**

Under the supervision of

Ms. Pallavi Shukla
Designation

**UNITED COLLEGE OF ENGINEERING & MANAGEMENT
NAINI, PRAYAGRAJ (U.P.) - 211010**
(Affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow)

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DECLARATION

We hereby declare that work presented in this project report titled *"SPEAK & SHOP"* submitted to the department of Computer Science & Engineering at United College of Engineering and Management, Prayagraj, in partial fulfillment of the requirement for the award of degree of Bachelor of Technology is an authentic record of our original work. We have not submitted the same work for the award of anyu other degree for any other university.

<div style="display:flex">
<div>

STUDENT 1

Signature :-

Name   :- Mohit Kumar Gupta

Roll No   :- 1834210057

Date   :- April 28, 2022

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STUDENT 2

Signature :-

Name   :- Pranav Srivastava

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Date   :- April 28, 2022

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CERTIFICATE

This is to certify that Project Report entitled *SPEAK & SHOP* which is submitted by :- Mohit Kumar Gupta 1834210057, Pranav Srivastava 1834210066, Prateek Singh 1834210067, Pratyush Sharma 1834210068 in the partial fulfillment of the requirement for the award of degree Bachelor of Technology in the department of Computer Science and Engineering from United College of Engineering and Management Prayagraj affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow, is a record of the candidates' own work carried out by them under our own supervision. The matter embodied in this project report is original and has not been submitted for the award of any other degree.

(Signature)   (Signature)

Pallavi Shukla   Jeetesh Srivastava
Supervisor   *HOD Computer Science & Engineering*
Date:- April 28, 2022   Date:- April 28, 2022

ACKNOWLEDGEMENT

It gives us a great sense of pleasure to present the report of the B. Tech Project undertaken during B. Tech. Final Year. We owe special debt of gratitude to Professor Pallavi Shukla, Department of Computer Science and Engineering, United College of Engineering and Management, Prayagraj for his/her constant support and guidance throughout the course of our work. His/her sincerity, thoroughness and perseverance have been a constant source of inspiration for us. It is only his/her cognizant efforts that our endeavors have seen light of the day.

We also take the opportunity to acknowledge the contribution of Professor Jeetesh Srivastava, Head, Department of Computer Science and Engineering, United College of Engineering and Management, Prayagraj for his full support and assistance during the development of the project.

We also do not like to miss the opportunity to acknowledge the contribution of all faculty members of the department for their kind assistance and cooperation during the development of our project. At last, we acknowledge the contribution and help of Lab staff for the completion of the project.

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Name   :- Prateek Singh   Name   :- Pratyush Sharma
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Date   :- April 28, 2022   Date   :- April 28, 2022

ABSTRACT

The purpose of this Speak & Shop, ecommerce project was to provide users an interface where they can fully interact with the application for performing different types of activity whether it be viewing the products to adding to cart and checking out or to just add the product to wishlist.

The problem to which this project is a solution is the increase in number of people who suffer from partial or severe vision impairment. Traditionally users type in a query into a search box to fetch answers this will some time take more time and not too friendly like consumers to shop when they're cooking, multitasking, or even driving.

To propose a solution to this problem, we have come up with a solution of Speak and Shop ecommerce web application which provides an ease to user to completely interact with the application and can give command over voice of the action they want to perform.

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LIST OF SYMBOLS

[x]	Integer value of x.
≠	Not Equal
∈	Belongs to
€	Euro- A Currency
_	Optical distance
_o	Optical thickness or optical half thickness

LIST OF ABBREVIATIONS

AAM	Active Appearance Model
ICA	Independent Component Analysis
ISC	Increment Sign Correlation
PCA	Principal Component Analysis
ROC	Receiver Operating Characteristics

Chapter 1: Introduction, Problem Definition/Statement and Proposed Model

1.1 INTRODUCTION

New technology and techniques are implemented in Ecommerce websites to visually present information due to significant growth in shopping worldwide. A web application that also allows visually impaired and blind users to access and shop. The system gives voice instructions with welcome messages which assist users to use the website and an input is requested from the user. The user is required to hover over the entire page using the cursor to access different voice messages for various fields. The user provides input using the keyboard keys thus taking the process forward. The website also provides recommendations based on customer selection using collaborative filtering algorithms. It is a process of filtering information or patterns using techniques involving collaboration of data gathered from different agents and data sources. The system processes the voice output, and asks for the input by pressing the button of their desired choices.

This will help them to buy their desired things online. Every kind of instruction will give them in mode of audio they need to hear and follow the instructions.

1.2 PROBLEM DEFINITION/STATEMENT

According to WHO, globally 1 billion people suffer from partial or severe vision impairment or blindness. When the number is so huge, it is needless to say that your e-commerce store design should consider web accessibility for shoppers with partial or complete blindness. Consider a blind individual who lives alone, but wants to make a purchase from an ecommerce site. He doesn't have anybody there by his side, at the moment, to either guide him on what to do on the site, or make the purchase for him. Traditionally users type in a query into a search box to fetch answers this will some time take more time and not too friendly like consumers to shop when they're cooking, multitasking, or even driving.

It is also difficult for blind people to choose clothes with different colors or they find it difficult to shop online. People with complete blindness use screen readers to access the web content. Screen readers are software that allows people with blindness to read the web content either with a Braille display or a sound synthesizer. Now it often happens that the screen readers don't work properly due to browser compatibility issues. People with visual impairments find it difficult to differentiate between the foreground and background when they encounter low-contrast color schemes. With this in mind, how can any seller make sure that e-commerce store stands out from the crowded competition? Further to it, to make online shopping more convenient, voice-enabled searches are becoming immensely popular and are being widely adopted.

1.3 BACKGROUND STUDY

E-commerce is fast gaining ground as an accepted and used business paradigm. More and more business houses are implementing web sites providing functionality for performing commercial transactions over the web. It is reasonable to say that the process of shopping on the web is becoming commonplace. The objective of this project is to develop a general-purpose e-commerce store where any product (such as books, groceries, cloths, computers, mobile phones, electronic items, and home appliances) can be bought from the comfort of home through the Internet. However, for implementation purposes, this paper will deal with an online ecommerce store.

An online store is a virtual store on the Internet where customers can browse the catalog and select products of interest. The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented as an order. At that time, more information will be needed to complete the transaction.

Usually, the customer will be asked to fill or select a billing address, a shipping address, a shipping option, and payment information such as a credit card number but in our case we have one added feature of voice based module which can help to do shopping of the product till adding to cart. An email notification is sent to the customer as soon as the order is placed.

1.4 PROPOSED SOLUTION

A system is developed to assist people by automatically recognizing product patterns and colors. The system processes the voice output, and asks for the input by pressing the button of their desired choices. This will help them to buy their desired things online. Every kind of instruction will give them in mode of audio they need to hear and follow the instructions. Just try to keep our online store website as simple and minimalistic as possible. In short, our website is less flashy in terms of graphics. We wil try to use high-contrast color schemes when choosing colors for your online store. We can take the help of tools like Wave and CheckMyColours to figure which component of your online store is high contrast or low contrast. A rise in adoption of smart speakers by consumers, plus the growing usage in voice-enabled searches, combined with an increasing inclination to use voice assistants for shopping, voice-based eCommerce will be the next major disruption for online retail. This is just the right time for retailers to focus on voice search optimization strategy in their eCommerce business to stay ahead of the curve. When users can do pretty much everything by their voice, they are more likely to spend less time on device keyboards. From how the things are shaping currently, voice commerce is all poised to gain more traction.

1.5 MODULE DESCRIPTION

Products module: The shop owner has the authority to add or delete items from the web mall. Shop owner also has the right to modify those details. This includes the information about a particular product, such as product number, item, name, category, images of products,

description, features, constraints of products, product price which are to be displayed on the website.

Orders Module: When a customer goes through checkout, the information on their order is automatically transferred to the Orders section for you to keep track of. In the administration, you can view all of the orders made on their site, manually add orders, or edit the details of existing orders. The Orders section is located under Sales > Orders. On this page, every order ever made from the store is listed in detail.

Categories Module: In the default theme of the store front, parent categories are listed in the top menu of the home page, and on the left side of product pages. This navigational feature is used to guide customers to similar products within the same category. Exposing customers to different products within a category lets the customer compare the similarities and differences between products to make the most informed purchase. When adding products to the store, you will be asked for a product category to sort them in. It is a good idea to establish these categories before adding products, to save yourself the trouble of adding the category name to the products later.

Shopping module: The customer can select the items and put it into a cart and as soon as he clicks on finish, the total amount to be paid is displayed and also provides a discount if any. The customer can pay cash on delivery or else he can pay by entering his credit card number and address to which the items have to be shipped.

Customer Module: Shop owners should know who their customers are and how to manage their information. In the administration, customer information will need to be stored efficiently to remember any transactions made with their account. To access customer information, you can log into the administration panel of the store. The Customer management sections are located under Sales> Customers.

Billing Module: Here customers can view billing reports and order reports. Admin module: Administrator has full permission to access this web site. Administrators or employees can handle customer details, and he can communicate with customers through mail. If a customer forgets his password, the employee can reset his password.

Report module: This module deals with report management of the entire system.

Coupons Module: You may create and designate coupons to specific products or product categories under Sales > Coupons. The Coupons page will display a list of all the coupons created in the administration.

1.6 PURPOSES

The project is about to handle all the information of the shop regarding members. Also it manages resources which were managed and handled by manpower previously. The main

purpose of the project is to integrate distinct sections of the shop into consistent manner so that complex functions can be handled smoothly. The project aims at the following matters:

- Automation of product manipulation.
- Buying products.
- To manage information of different types of items.
- Consistently update information of all the item.
- Managing security by providing authorized email & password. Manages database efficiently

Chapter 2: Objective, Scope & Limitations

2.1 Objective

The main objective of the Speak and Shop Portal is to manage the details of Products, Customer, Shipping, Payment, and Category with voice command. It manages all the information about Products, Sales, Category, and Products. 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 with the help of voice oriented system for managing the Products, Customer, Sales, and Shipping. It tracks all the details about the Shipping, Payment, and Category.

2.2 Scope of Project

This website is created so that it helps visually impaired and blind people to use the e-commerce websites with ease. This will also help other normal users to shop easily. In future with the new studies additional technologies can be integrated with the existing website which further prove to be helpful for the audience in better navigation. In the future the website can also be converted to a mobile application which can help users navigate with the help of gestures. With the increasing efforts by major companies like Google, Netflix, Uber, Apple, and Samsung to incorporate accessibility, in future the technologies used in the website can also act as an extension to other e-commerce websites so that it increases target audience on a global level.

2.3 Limitations

Security: One of the main limitations of e-commerce is security. In most cases, people are hesitant to provide their personal and financial details in spite of advanced data encryption security systems in place. Moreover, there are some websites that do not have the capability and features installed to authenticate transactions. As such, there are instances of fraudulent activities. The fear of providing financial information like credit card details hinders the growth of e-commerce.

Lack of Privacy: To some extent, the privacy of a customer is compromised in e-commerce. You need to provide your personal details, such as an address, telephone number, and so on to the seller. There are still lots of sites that do not have the advanced technology to protect sensitive information. Moreover, there are also sites that illegally collect consumer statistics without permission. This is one reason why people get skeptical while using e-commerce.

Product Suitability: As already mentioned, it is not possible for people to physically examine The product in e-commerce. In many cases, the original product may not match the picture or specifications in the e-commerce site. This absence of 'touch and feel' creates a discouraging effect.

Technical Limitations: e-commerce requires advanced technology platforms for better performance. Some limitations, such as lack of proper domain, network and software issues, and so on can affect the seamless performance of an e-commerce site.

Delivery Guarantee: Many people fear that their product might not be shipped or the website might be a fraud. Businesses need to work to build customer trust with reviews, testimonials, etc. to add more value to their website.

Legal Issues: A lot of legal compliances and cyber laws need to be taken care of in an e-commerce business. These regulations may vary from country to country. All these reasons deter businesses from going electronic.

2.4 Planning

1. Competitor analysis. In the early stages of the project, we conduct in-depth competitor and market research. It helps us to identify the weaknesses and strengths of the market leaders. Moreover, we receive insights on the mistakes we can avoid and the best practices we can adopt.

2. Feature list. This stage includes selecting the features we will integrate into the e-commerce website or the future online platform. The list of features has an impact on the user experience of your future customers.

3. Shipment and payment providers. Our team carefully selects the payment and shipment providers. The choice has a direct impact on the number of future sales, expenses, and the online shop's trustworthiness.

4. Design. Our team could recommend using some particular layouts or design elements distinguished as your competitor's best practices. The team also offers several options of themes from websites. In addition, we can develop a custom e-commerce design according to your business needs.

5. Data migration. In some cases, a customer already has an online shop with databases to import into the future project. We include the database migration to the workflow since it has an impact on the cost scope and the time of the online shop development.

6. The e-commerce platform. We offer several options of the e-commerce platforms depending on the customer business needs, goals, budget, and other factors. In some cases, we develop custom ecommerce platforms.

Then, to keep the project progress transparent and measurable, we use six main deliverables.

2.5 Feasibility

Whatever we think need not be feasible. It is wise to think about the feasibility of any problem we undertake. Feasibility is the study of impact, which happens in the organization by the development of a system. The impact can be either positive or negative. When the positives nominate the negatives, then the system is considered feasible. Here the feasibility study can be performed in two ways such as technical feasibility and Economical Feasibility.

Technical Feasibility

It is technically feasible, since there will not be much difficulty in getting required resources for the development and maintaining the system as well. All the resources needed for the development of the software as well as the maintenance.

Economical Feasibility

Development of this application is highly economically feasible .The organization needed not spend much m one for the development of the system already available. The only thing is to be done is making an environment for the development with an effective supervision. I f we are doing so , we can attain the maximum usability of the corresponding resources .Even after the development , the organization will not be in a condition to invest more in the organization .Therefore , the system is economically feasible.

2.6 Hardware & Software Requirements

2.6.1 Client Side

	DESCRIPTION	ALTERNATIVE (if any)
HARDWARE	PC with 20 GB hard-disk and minimum 512 MB RAM with Internet facility.	Not Applicable
SOFTWARE	Internet Explorer	Mozilla Firefox / Google Chrome / Apple Safari

Table 1.1: Client Side Requirements

2.6.2 Server Side

	DESCRIPTION	ALTERNATIVE (if any)
HARDWARE	PC with 1 TB hard-disk and minimum 2 GB RAM with Internet facility.	AWS(or any other cloud platform)
SOFTWARE	Python & MySQL Server	Not Applicable

Table 1.1 : Server Side Requirements

Chapter 3: Planning and Feasibility Analysis

3.1 Planning

Planning for every project is very individual and specific. However, several major steps are going to be similar for many projects of the businesses. These major steps are described in the next paragraphs.

STEP #1: CONSIDER ECOMMERCE WEBSITE SCOPE OF WORK

The first step to start with is to craft a scope statement and a general outline for the project. Creating the outline and the scope is usually the first step towards writing technical documentation and specs. Certainly, documentation is going to be changed in the scope of developing the project but initially, it is created by stakeholders and a project manager. The first step also contains developing the purpose and objectives of the project as well as the business justification for the project and is practically a basis for the entire future work.

STEP #2: ORGANIZE DELIVERABLES INTO A WORK BREAKDOWN STRUCTURE

When it comes to implementing project ideas effectively and promptly, there is a need to prepare deliverables. In turn, making deliverables is a part of the WBS that is the work breakdown structure for the project. A manager is the one to create the WBS according to the requirements of the customer, which need to include project scope, project tasks, and tasks split into simpler subtasks. Such an approach helps to make one step at a time and build the project quicker. Thus, the WBS is necessary as a project roadmap.

STEP #3: GET TO KNOW YOUR DEPENDENCIES

When you already have the parts of your project to do with the WBS, it is time to create a to-do list for every subtask. At this point, many managers often ignore dependencies and this might create bottlenecks in the project. To avoid bottlenecks, there is a need to plan tasks, taking in mind their dependencies on other tasks and subtasks. It is important to know whether there are subtasks that need to be completed before another task or at least initiated. With this knowledge, it is easier to create a smooth working process. It is a duty of a project manager to specify dependencies in the WBS and to make sure these dependencies are taken into account when the work is planned.

STEP #4: CREATE A TIMELINE

Have you heard about a Gantt chart? It is a very convenient tool to use when it comes to planning the milestones and the dependencies. With a Gantt chart, you can plan time and tasks in a way that at any given moment you can see the status your project is in. The example of a Gantt chart is represented in the picture below. Usually, a Gantt chart is created in Excel but you can generally use whatever you find comfortable. The main idea is to be specific enough, to keep planning close to the needs of your project, and to make sure that all the dependencies are taken into account when planning those steps.

STEP #5 PLAN BUDGET

It goes without saying, before starting the project, there is a need to estimate the total cost that you can afford. Ideally, there should be several estimations, depending on the timeline and features added to the project. For example, you might want to have the lowest and the highest total cost of your project at hand so you can estimate the project from several points of view. Potentially, this helps to be more realistic with the budget, and determine the features that are a must for the project and the ones that are auxiliary but desired.

3.2 Feasibility

After doing the project speak and shop project, study and analyzing all the existing or required functionalities of the system, the next task is to do the feasibility study for the project. All projects are feasible - given unlimited resources and infinite time. Feasibility study includes consideration of all the possible ways to provide a solution to the given problem. The proposed solution should satisfy all the user requirements and should be flexible enough so that future changes can be easily done based on the future upcoming requirements. Preliminary investigation examine project feasibility, the likelihood the system will be useful to the organization. The main objective of the feasibility study is to test the Technical, Operational and Economical feasibility for adding new modules and debugging old running system. All system is feasible if they are unlimited resources and infinite time. There are aspects in the feasibility study portion of the preliminary investigation:

• Technical Feasibility

• Operation Feasibility

• Economical Feasibility

Technical Feasibility

The technical issue usually raised during the feasibility stage of the investigation includes the following:

- Does the necessary technology exist to do what is suggested?
- Do the proposed equipment's have the technical capacity to hold the data required to use the system?
- Will the proposed system provide adequate response to inquiries, regardless of the number or location of users?
- Can the system be upgraded if developed?
- Are there technical guarantees of accuracy, reliability, ease of access and data security?

Earlier no system existed to cater to the needs of 'Secure Infrastructure Implementation System'. The current system developed is technically feasible. It is a web based user interface for audit workflow at NIC-CSD. Thus it provides an easy access to the users. The database's purpose is to create, establish and maintain a workflow among various entities in order to facilitate all concerned users in their various capacities or roles. Permission to the users would be granted based on the roles specified. Therefore, it provides the technical guarantee

of accuracy, reliability and security. The software and hard requirements for the development of this project are not many and are already available in-house at NIC or are available as free as open source. The work for the project is done with the current equipment and existing software technology. Necessary bandwidth exists for providing a fast feedback to the users irrespective of the number of users using the system.

Operational Feasibility

Proposed projects are beneficial only if they can be turned out into information system. That will meet the organization's operating requirements. Operational feasibility aspects of the project are to be taken as an important part of the project implementation. Some of the important issues raised are to test the operational feasibility of a project includes the following: -

- Is there sufficient support for the management from the users?
- Will the system be used and work properly if it is being developed and implemented?
- Will there be any resistance from the user that will undermine the possible application benefits?

This system is targeted to be in accordance with the above-mentioned issues. Beforehand, the management issues and user requirements have been taken into consideration. So there is no question of resistance from the users that can undermine the possible application benefits. The well-planned design would ensure the optimal utilization of the computer resources and would help in the improvement of performance status.

Economic Feasibility

A system can be developed technically and that will be used if installed must still be a good investment for the organization. In the economical feasibility, the development cost in creating the system is evaluated against the ultimate benefit derived from the new systems. Financial benefits must equal or exceed the costs. The system is economically feasible. It does not require any addition hardware or software. Since the interface for this system is developed using the existing resources and technologies available at NIC, There is nominal expenditure and economical feasibility for certain.

Chapter 4: Software Design

4.1 System Design

System Design of Speak and Shop System In this phase, a logical system is built which fulfils the given requirements. Design phase of software development deals with transforming the client's requirements into a logically working system. Normally, design is performed in the following in the following two steps:

1. ***Primary Design Phase:***
   In this phase, the system is designed at block level. The blocks are created on the basis of analysis done in the problem identification phase. Different blocks are created for different functions emphasis is put on minimizing the information flow between blocks. Thus, all activities which require more interaction are kept in one block.

2. ***Secondary Design Phase:***
   In the secondary phase the detailed design of every block is performed. The general tasks involved in the design process are the following:

   i. Design various blocks for overall system processes.
   ii. Design smaller, compact and workable modules in each block.
   iii. Design various database structures.
   iv. Specify details of programs to achieve desired functionality.
   v. Design the form of inputs, and outputs of the system.
   vi. Perform documentation of the design.
   vii. System reviews.

User Interface Design

User Interface Design is concerned with the dialogue between a user and the computer. It is concerned with everything from starting the system or logging into the system to the eventually presentation of desired inputs and outputs. The overall flow of screens and messages is called a dialogue The following steps are various guidelines for User Interface Design:

1. The system user should always be aware of what to do next.
2. The screen should be formatted so that various types of information, instructions and messages always appear in the same general display area.
3. Message, instructions or information should be displayed long enough to allow the system user to read them.
4. Use display attributes sparingly.
5. Default values for fields and answers to be entered by the user should be specified.
6. A user should not be allowed to proceed without correcting an error.

7. The system user should never get an operating system message or fatal error.
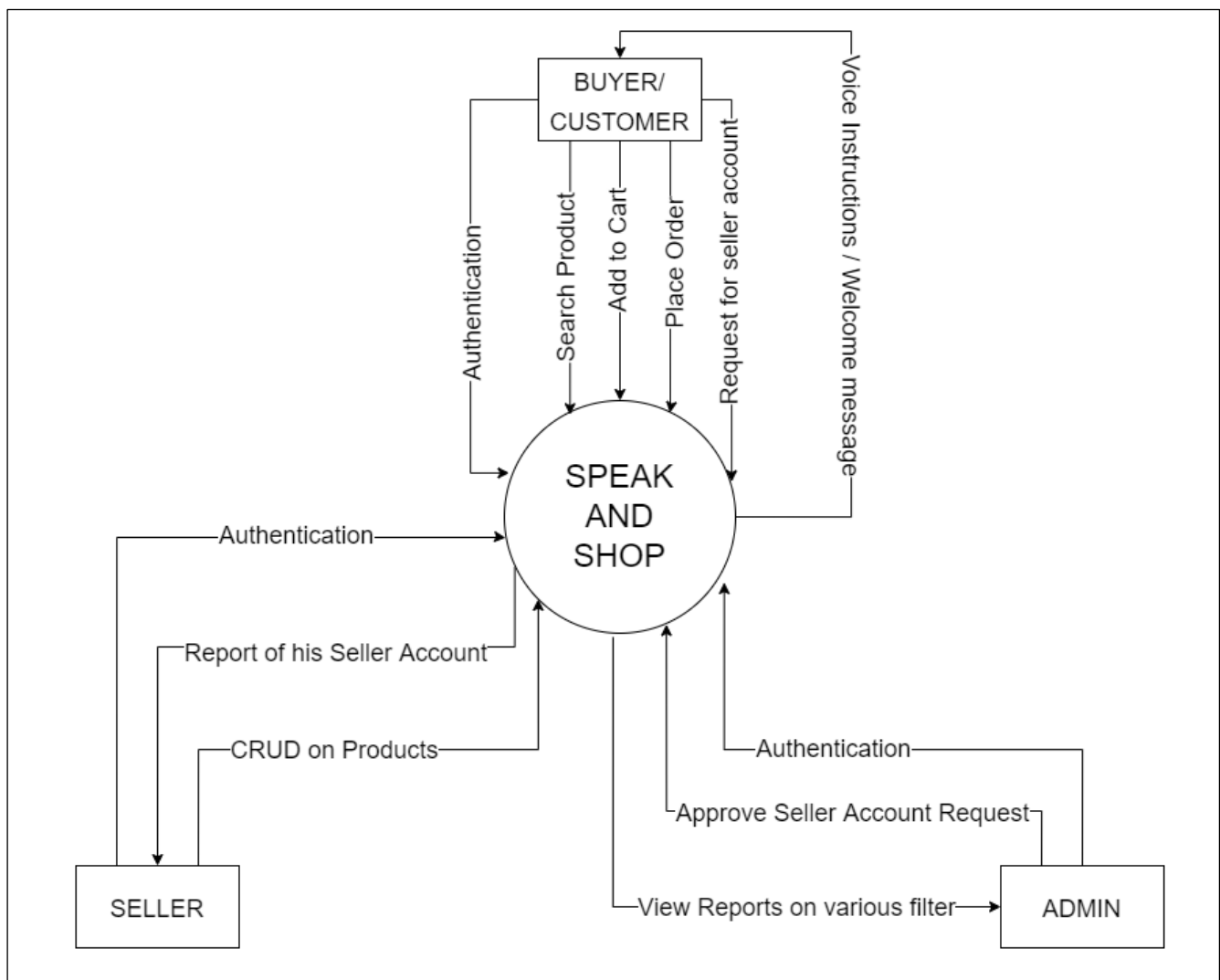
4.2 Detailed Design

4.2.1 0 level DFD
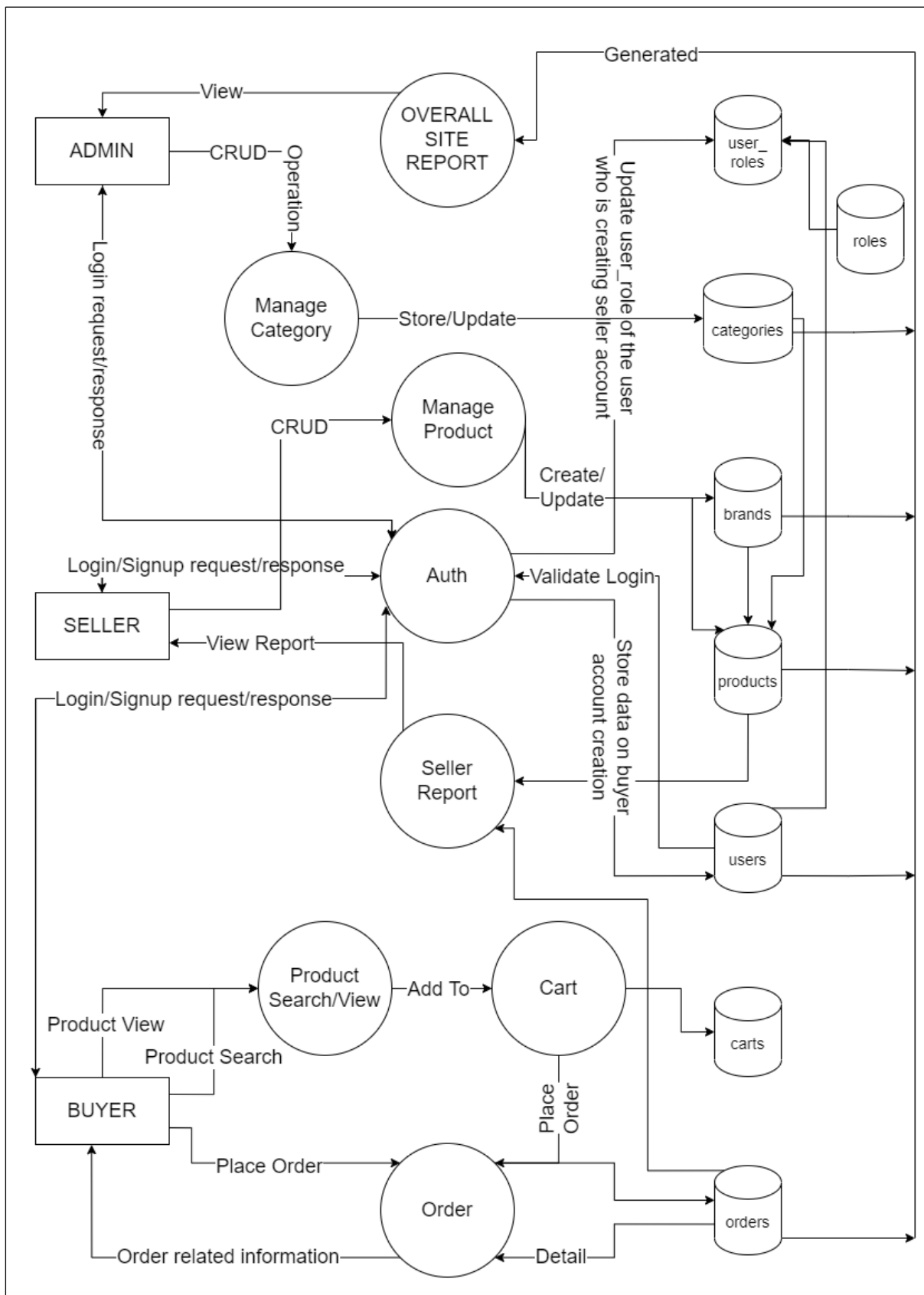

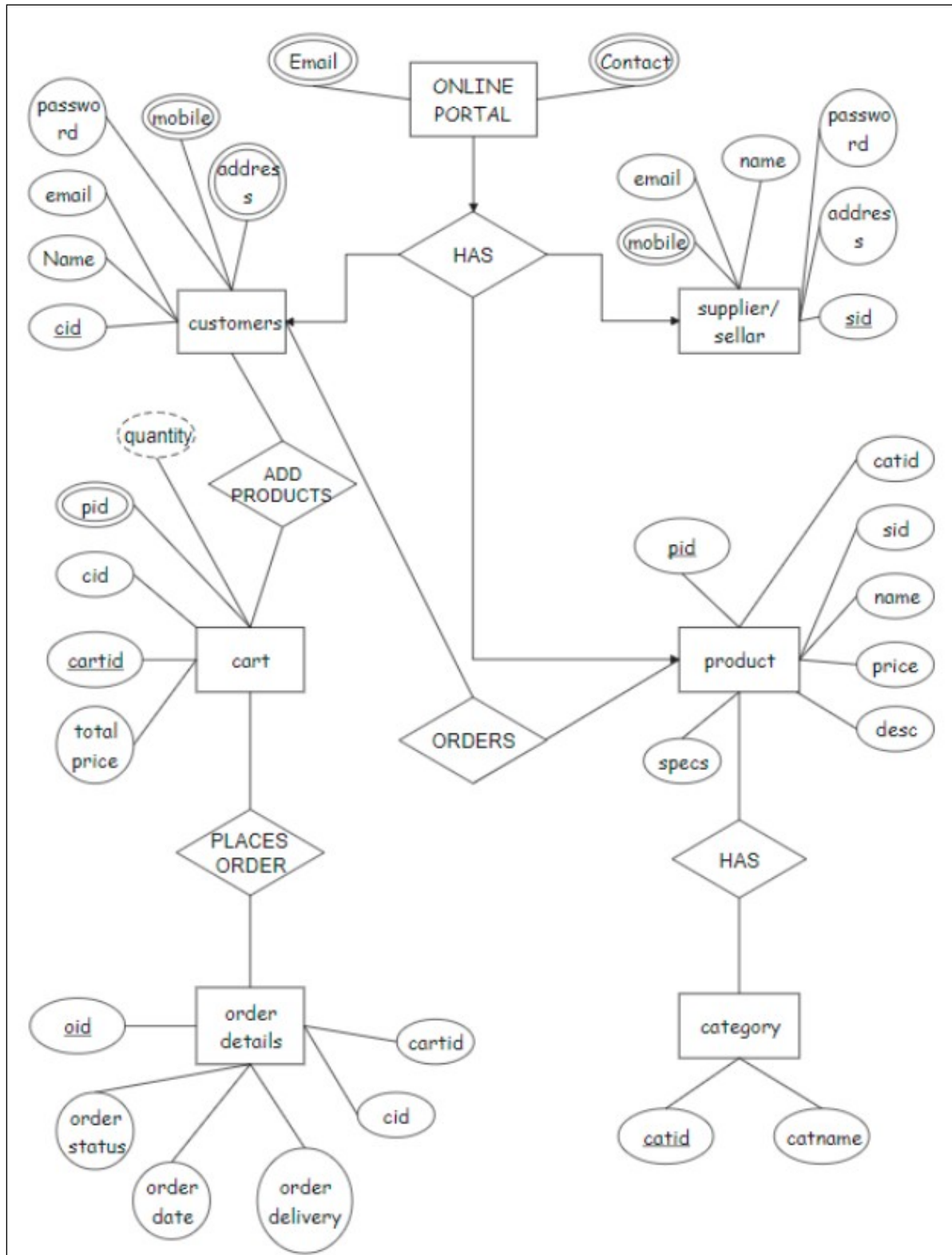Figure 1.1: 0 Level DFD

4.2.2 1 level DFD

Chapter 5: Database Design

5.1 ER Diagram

5.2 Schema Diagram
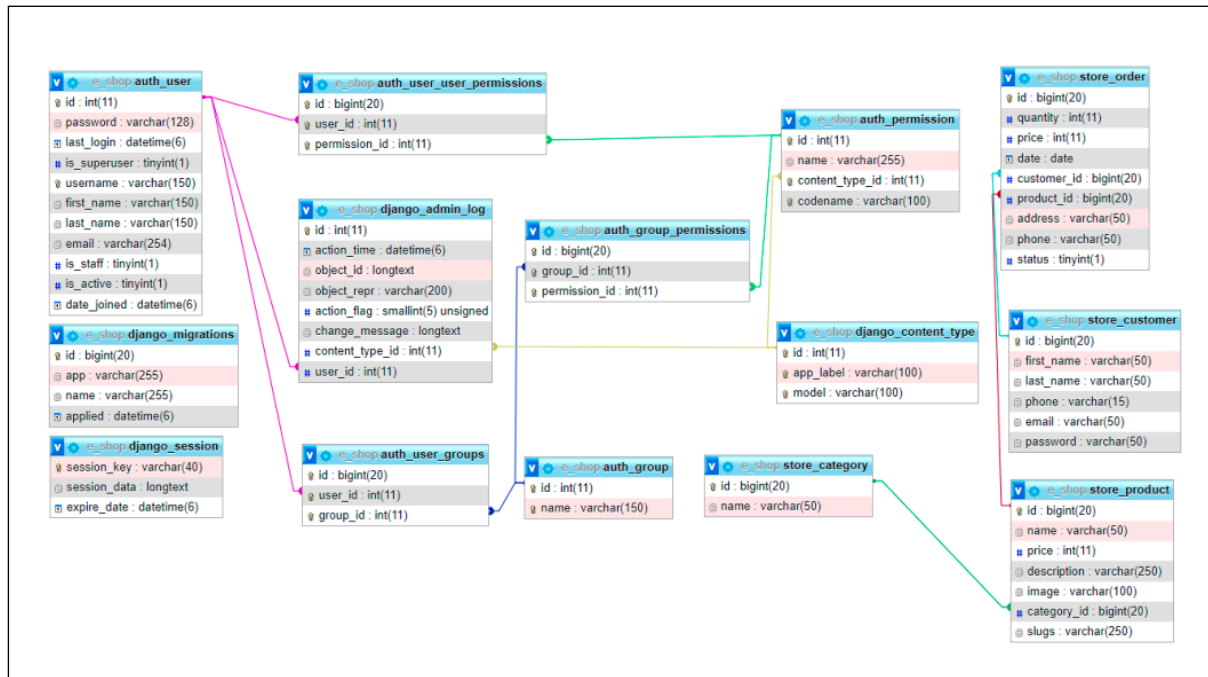

Figure 1.4: Schema Diagram

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8.2.1 Black Box Testing

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RESEARCH PAPER