

# **Product Sergeant**

**BY**

**Shahriar Aziz Akash (171-35-170)**

**Md Meraj Hossain (171-35-178)**

**Md Akash (171-35-200)**

**Md Mehedi Hasan (171-35-181)**

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Science in Software Engineering.

**Supervised By**

**SK. Fazlee Rabby**

**Lecturer**

**Department of SWE**

**Daffodil International University**



**DAFFODIL INTERNATIONAL UNIVERSITY**

**DHAKA, BANGLADESH**

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## DECLARATION

We hereby declare that, this project has been done by us under the supervision of **SK. Fazlee Rabby, Lecturer, Department of SWE, Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for award or any degree.

### Supervised by:

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**SK. Fazlee Rabby**

**Lecturer**

Department of Software Engineering  
Daffodil International University

### Submitted by:

---

**Shahriar Aziz Akash (171-35-170)**

**Md Meraj Hossain (171-35-178)**

**Md Akash (171-35-200)**

**Md Mehedi Hasan (171-35-181)**

Department of Software Engineering  
Daffodil International University

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I'm really grateful and wish our profound our indebtedness to **SK. Fazlee Rabby . Lecturer**, Department of SWE, Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice makes possible to complete this project.

## ABSTRACT

The report presents the development of “**Product Sergeant**”- app to check authenticity of any product anywhere. Consumer only need a mobile phone with a camera to know if the product is authentic or not. They can scan the given bar code given on the body of the product and also can search for new product. Companies can get registered to the system and add their product. Hopefully it will be handy for both consumers and companies.

This application is developed with **JS & Ruby languages, framework like React native & Vuex & Ruby on Rails, expo-cli and additional library like react-native-paper**, backend is developed with **Ruby on Rails API**.

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# **Chapter 1: INTRODUCTION**

## **1.1 Introduction**

This document is prepared in order to determine a documentation for Product Sergeant. Product sergeant is a handy app for consumer so that they can check the authenticity of any product. Consumer can scan the unique code provided on the product body and check if the product is authentic and if the product was used before. Companies can create new account and add new product. But they can't erase any product. Only the admin got that power. In addition, system got features such as searching product.

## **1.2 Objective**

People face problem while buying any new product. They feel worried about the authenticity of the product. Our app is for them so they can check and be sure that the product is ok. The objectives of Product Sergeant are:

- Check the authenticity of new product
- Helping companies in their selling
- Searching new product

## **1.3 Expected Outcome**

This app is for helping consumer and companies. So expected outcome of this project is

- App will be user friendly
- People get advantages
- Our app will be popular around the whole world

## **Chapter 2: Overall Description**

### **2.1 INTRODUCTION**

Our proposed system will be available for all types of users. The system will provide different features such as Scan code, create account, search product, Check product authenticity, adding new product.

### **2.2 Product Perspective**

Product sergeant is a system in which consumer from worldwide can check the authenticity of any product. They will scan the unique code given on the product body and will be sure that the product is authentic. They will also be able to search new product. Companies from the whole world be able to create account and add product to the system. Admin will be able to provide new password and delete any product.

### **2.3 Product Functions**

After opening the app the consumer will see a page opening option to scan the code and they can scan the code. Consumer will also see a search bar to search new product. Companies will see a option to login and if the company is new they will see a page to create new account. Admin page will be raw and they can only delete any product and provide new password.

### **2.4 User characteristics**

Product Sergeant doesn't require any specific compute knowledge to use it except the developers and administrators of it. Standard users are thought to be from any age and gender and from any nationality who can use the app. On the other hand, administrators and potential developers need a high level of expertise to understand technologies.

## Chapter 3: BACKGROUND ANALYSIS

### 3.1 Introduction

Product sergeant is a handy app for consumer so that they can check the authenticity of any product.

### 3.2 Related work

There are many app to scan bar code but those app don't give features like our app. We are giving background check and confirming that a particular product wasn't used before ever. And we are giving option to add product and search product. There are apps like

**Bar code Scanner,      QR code Scannner**

There are some apps for scanning bar or QR code we can describe how those work.

**Bar code Scanner:**





**Discussion about Bar code Scanner:**

Only scan bar code. And Check the origin of any product.

**QR code Scanner:****Discussion about QR code Scanner:**

Scan QR code of any product.

**3.3 Challenges**

There are so many challenges in this project because this is developed with different environment with different programming language.

- New coding Environment
- Difficult to learn new framework
- Difficult for draw any diagram for lack of resources
- Difficult to make it User friendly.

## CHAPTER 4: REQUIREMENT SPECIFICATION

### 4.1 Introduction

In this section, all software requirements will be explained in detail. All requirements are divided into two groups as functional and non- functional.

### 4.2 Functional Requirements

A functional requirement defines a function of a system or its component.

- **F.R. 1 – Scan product**

**DESCRIPTION-** By opening this application user can scan a product

**INPUT-**Bar Code of a Product.

**PROCESSING-**Retrieves the provided information and application will give the information of that product.

**OUTPUT-** Displays All the information of the product.

- **F.R. 2 – Search Product**

**DESCRIPTION-**user can search product.

**INPUT-**Product name with vendor name.

**PROCESSING-**Retrieves the provided information and give information about new product.

**OUTPUT-** Displays All the information of the product.

- **F.R. 3 – Search History**

**DESCRIPTION**-user can see search history of a product.

**INPUT**-N/A.

**PROCESSING**-Shows the history of searched products.

**OUTPUT**- Displays All the information of the products.

- **F.R. 4 – Company Registration & Authentication**

**DESCRIPTION**-Company can register & login in the admin portal.

**INPUT**-For registration: Company Name, Username, Email, Password, Password Confirmation. For authentication: Email, Password.

**PROCESSING**-Registers the company. Logs in to the company profile.

**OUTPUT**- Shows admin portal.

- **F.R. 5 – Product Insertion**

**DESCRIPTION**-Company can insert product from Admin Portal.

**INPUT**-Product name, Vendor, Origin, Expiry, UPC.

**PROCESSING**-Inserts and creates new product record in the database.

**OUTPUT**- Alerts about successful product creation.

## 4.3 Non-Functional Requirements

- **Security**

As Mentioned before the end-user don't need to give any information in this system. They will only can scan any product and search any product. So, this is very secure site for the end-user.

- **Reliability**

The system provides storage of all databases on redundant computers with automatic switch over. The reliability of the overall program depends on the reliability of the separate components. The main pillar of reliability of the system is the backup of the database which is continuously maintained and updated to reflect the most recent changes. Thus, the overall stability of the system depends on the stability of container and its underlying operating system.

- **Availability**

The system should be available at all times, meaning the user can access it using a Phone browser, only restricted by the down time of the server on which the system runs. In case of a of a hardware failure or database corruption, a replacement page will be shown. Also, in case of a hardware failure or database corruption, backups of the database should be retrieved from the server and saved by the administrator. Then the service will be restarted. It means 24 X 7 availability.

- **Maintainability**

A commercial database is used for maintaining the database and the application server takes care of the site. In case of a failure, a re-initialization of the program will be done. Also, the software design is being done with modularity in mind so that its maintainability can be done efficiently.

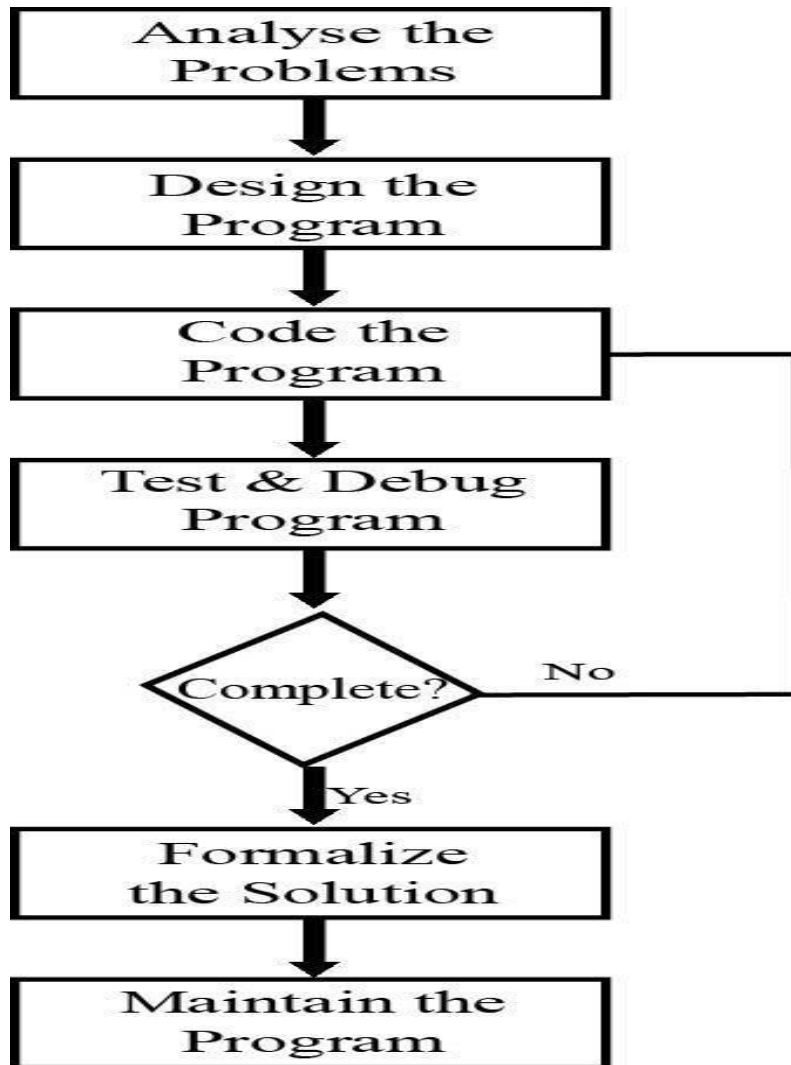
- **Portability**

Ruby language, Ruby on rails framework and API architecture is used for making this application. So That end user part is fully portable and using any phone should be able to use the features of the system, including any hardware platform that is available or will be available in the future. An end-user can use this system on phone. either it is Android or IOS. The system shall run on Phone.

## CHAPTER 5: SYSTEM DESIGN AND IMPLEMENTATION

- **Development Methodology**

We have followed below methodology while developing the app.

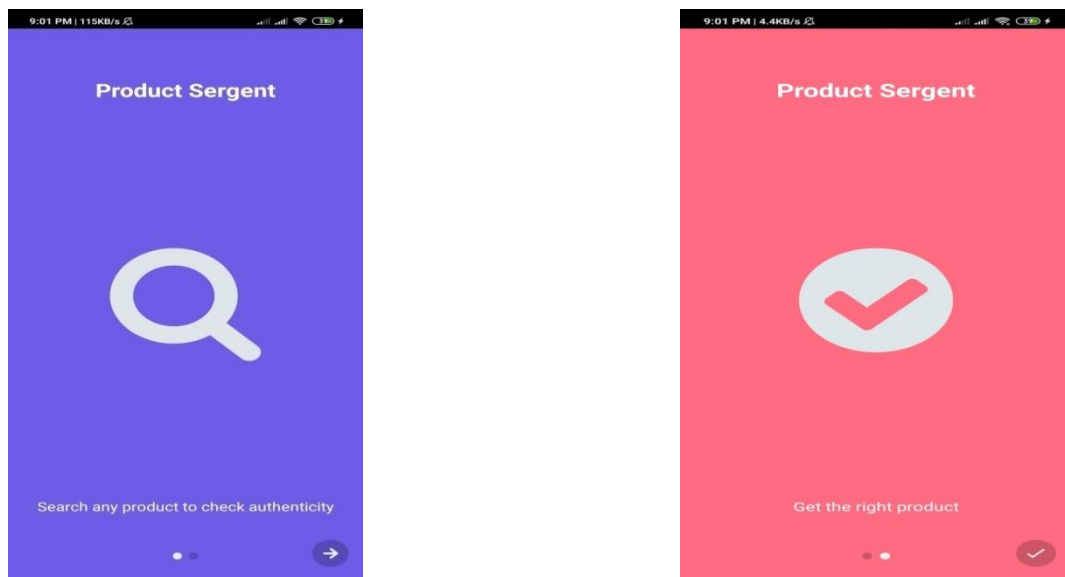


**Figure 5.1: Development Process of Software**

- **Front-End Design**
  - React native
  - React native paper
  - Vuex
- **Back-End design**
  - Ruby on Rails
- **Database**
  - PostgreSQL
- **Implementation of Front-End Design**

In front-end design this project is used lot of tools for making this app user friendly.

Design is given below



*Fig 1. Starting page.*

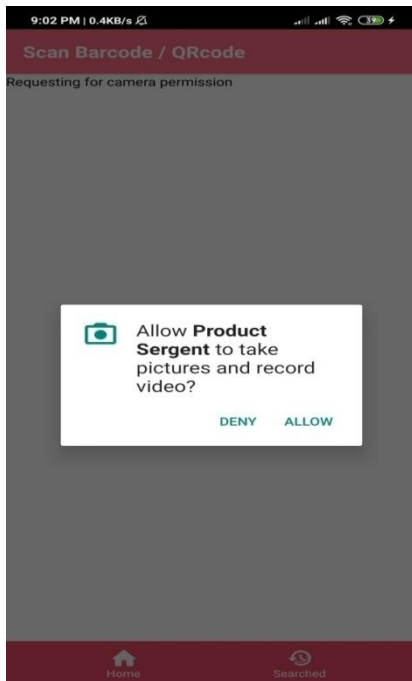


Fig 2. Asking permission for camera.

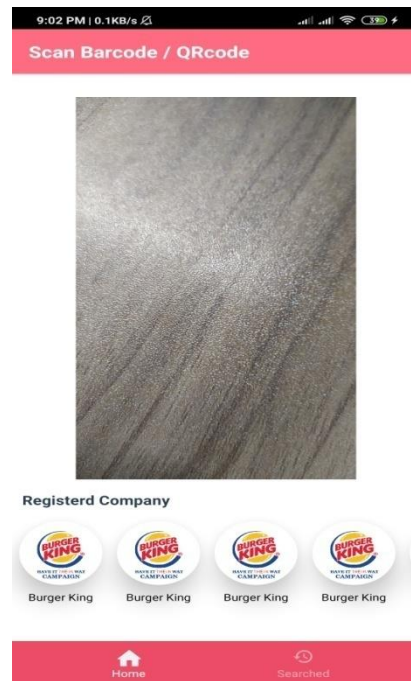


Fig 3. Bar code scanner.

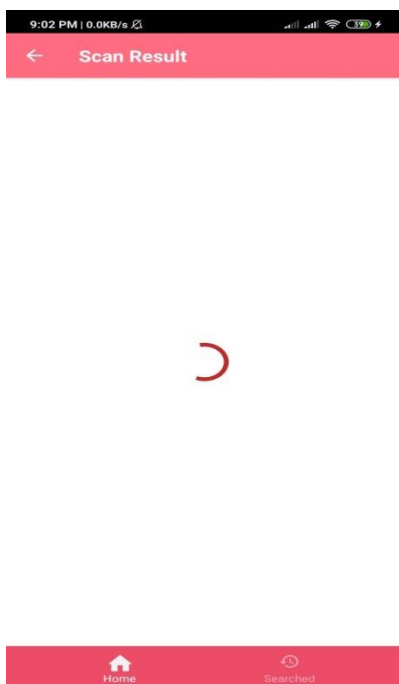


Fig 4. Scanning bar code

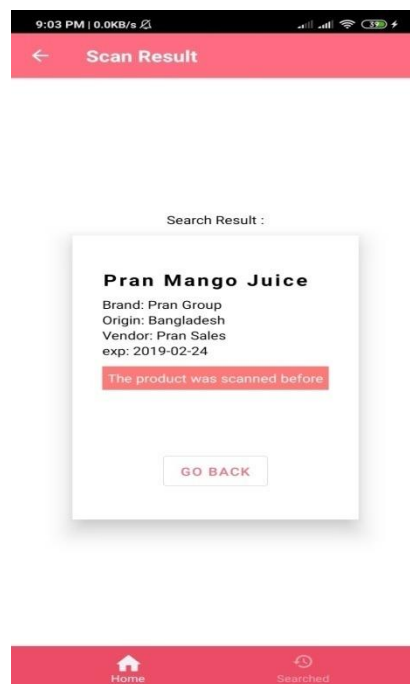



Fig 5. Giving info about that product.

Login in Web:



**Product Sergeant**

---

Login to Admin Portal

---

Email address

admin@apple.com

Password


\*\*\*\*\*

[Sign in](#)

[Sign up](#)

*Figure 1: Login Page*

Registration in Web:



**Product Sergeant**

---

Register Your Company

---

Company Name

ABC Inc.

Username

admin@apple.com

Email address

email@example.com

Password

\*\*\*\*\*

Password Confirmation

Password Confirmation


[Sign up](#)

[Sign in](#)

*Figure 2: Register Page*



## Product Insertion in Web:



**Product Sergeant**

---

Insert New Product

---

Product Name

Product Origin

Product Vendor

Product Expiry Date

Product UPC

[Sign out](#)

*Figure 3: Product Insertion Page*

## CHAPTER 6: TESTING AND DISCUSSION

Software testing is a process where software is investigating. There are lot of ways of testing software There are some testing description we are doing over our software that are given below.

- **Usability Testing:**

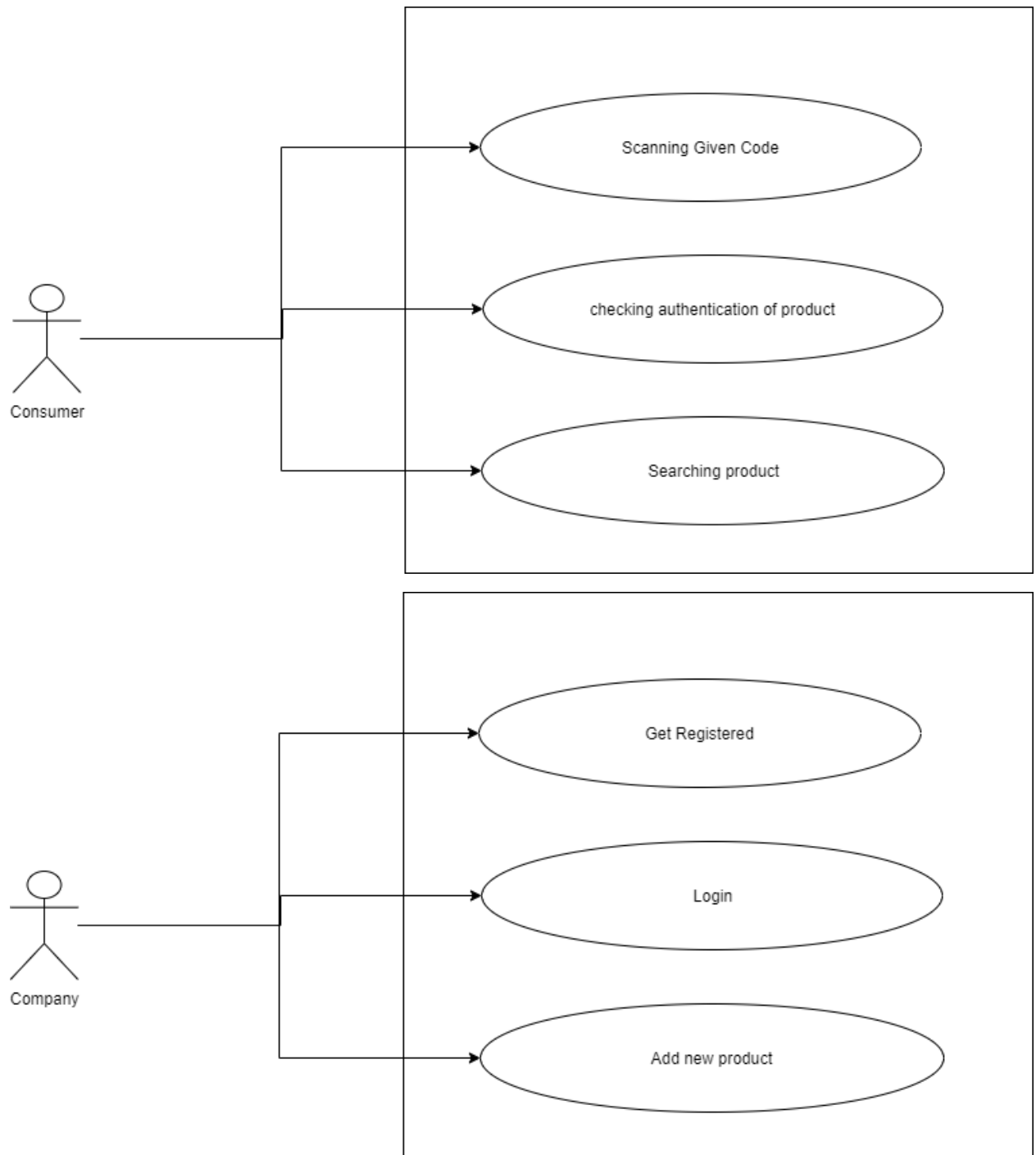
Usability testing is the process that user interface is easy to use or not that check here. In this software we are testing the usability of our software.

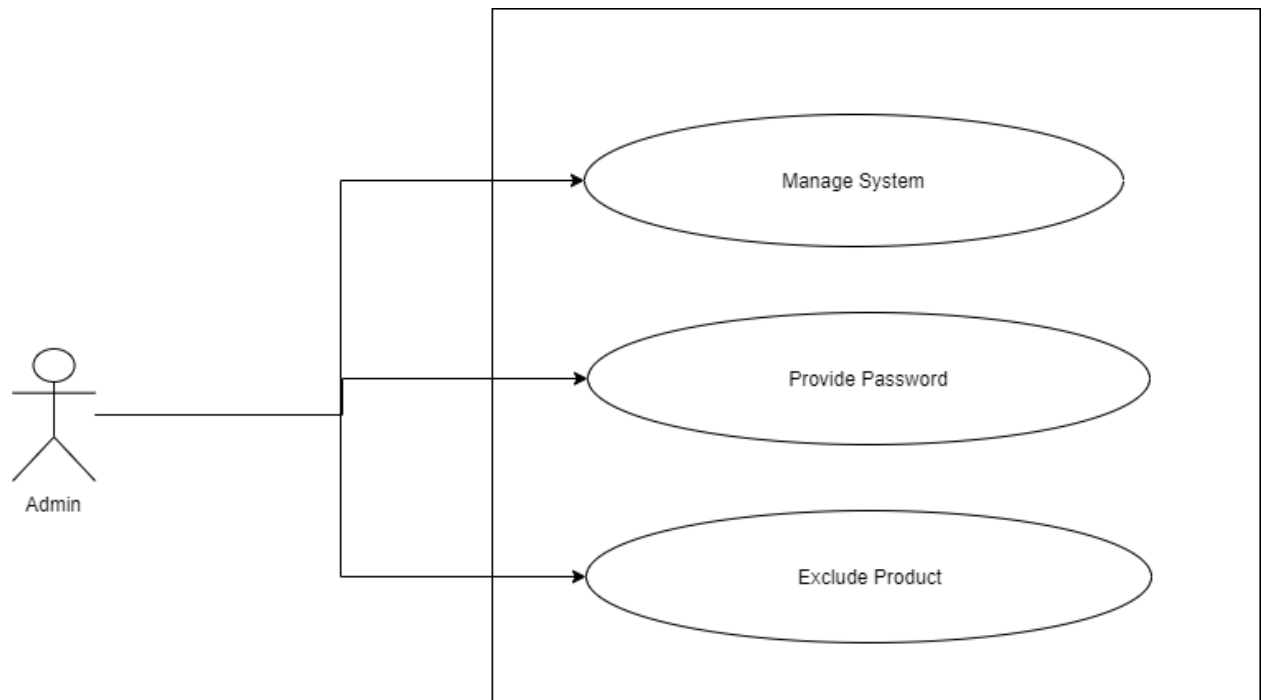
- **Functional Testing:**

In this test tester use the use-case diagram like if the many user submitted their Application is it possible in our app. Our app has passed in this test.

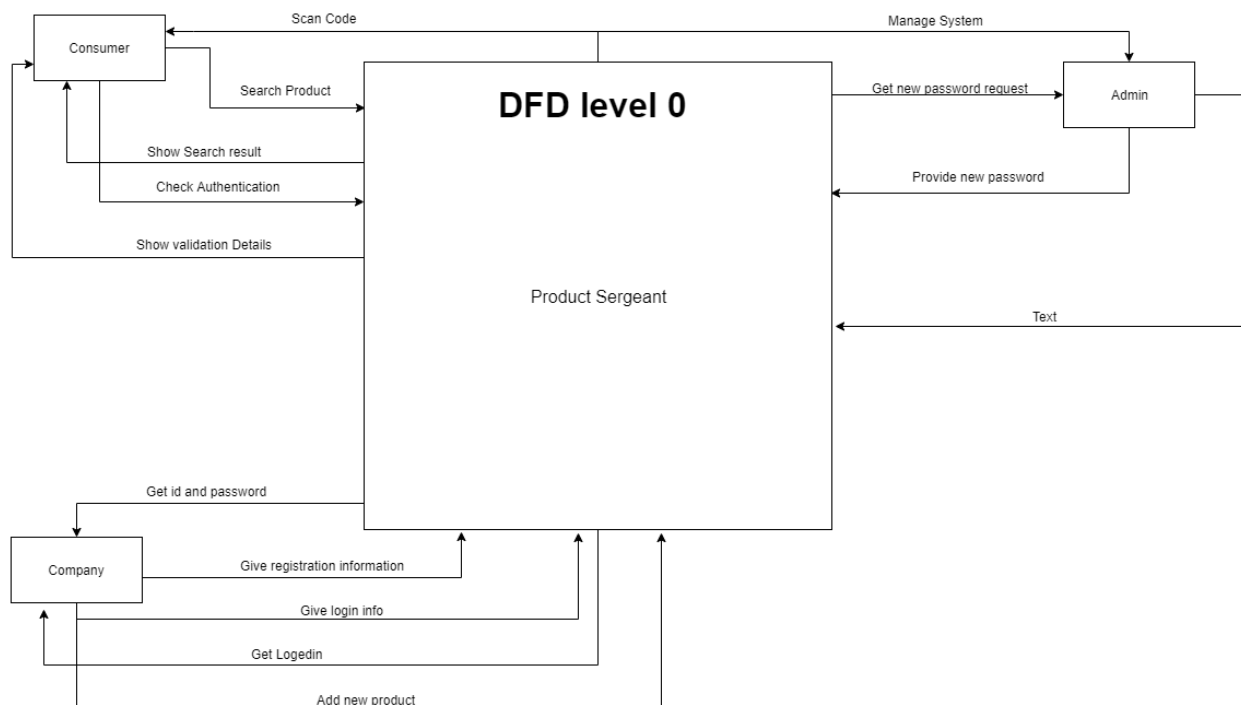
## CHAPTER 7: DIAGRAMS

### Usecase Diagram:

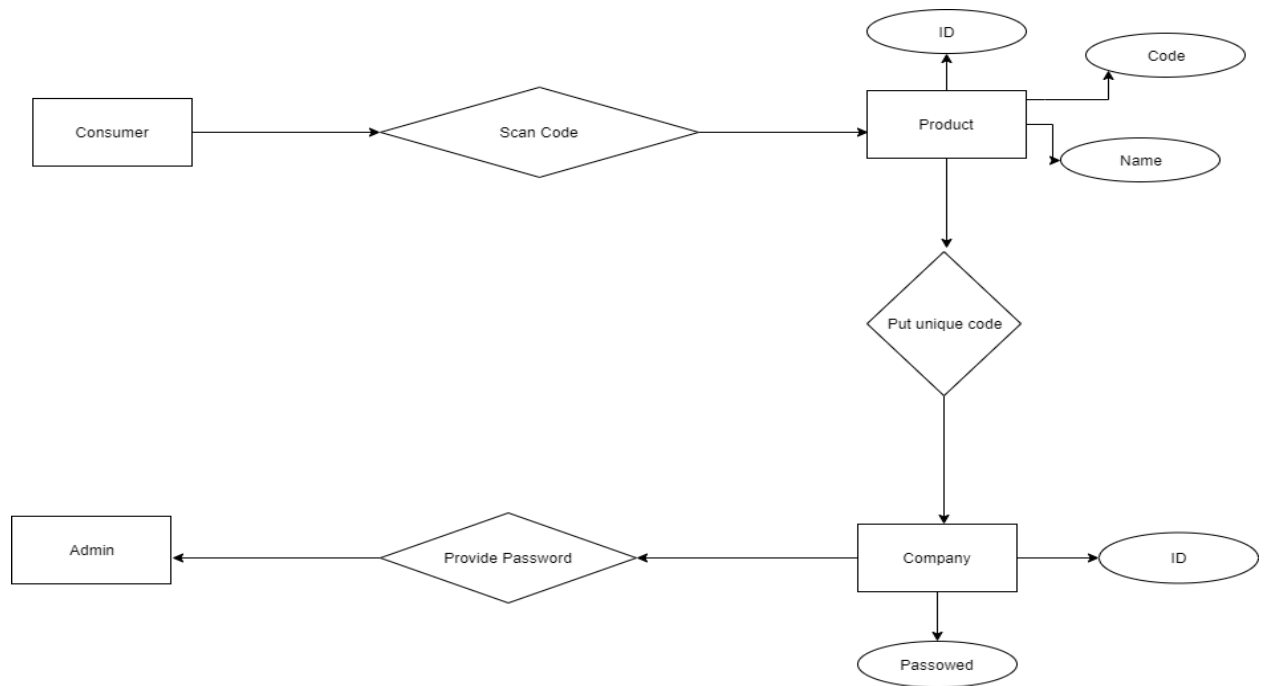




Dataflow Diagram:



ERD:



Activity Diagram:

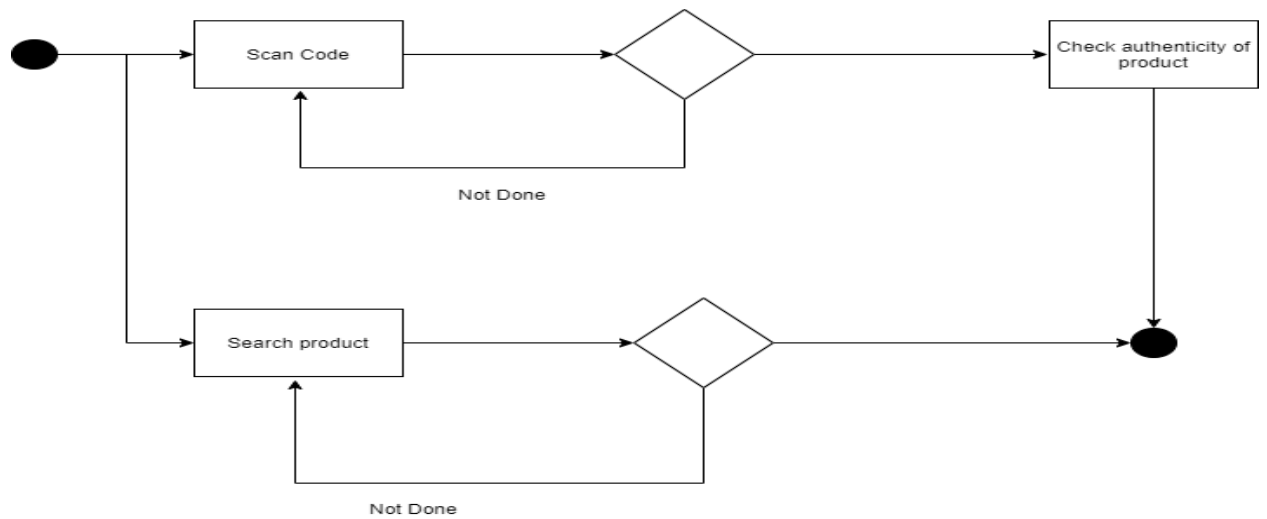


Fig: Activity Diagram Consumer

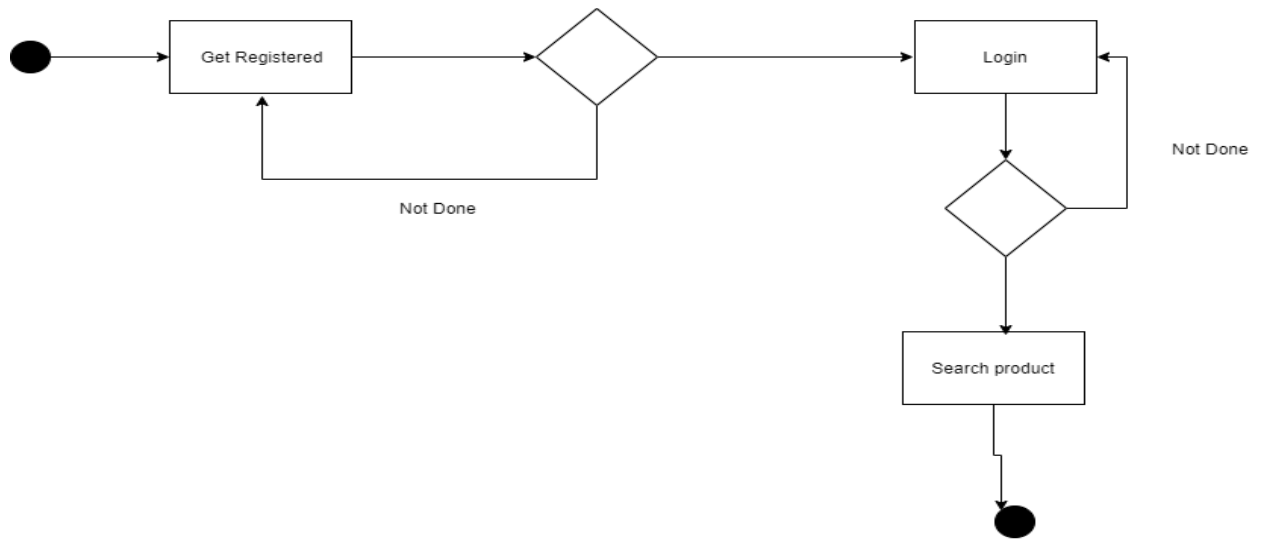


Fig: Activity Diagram Company

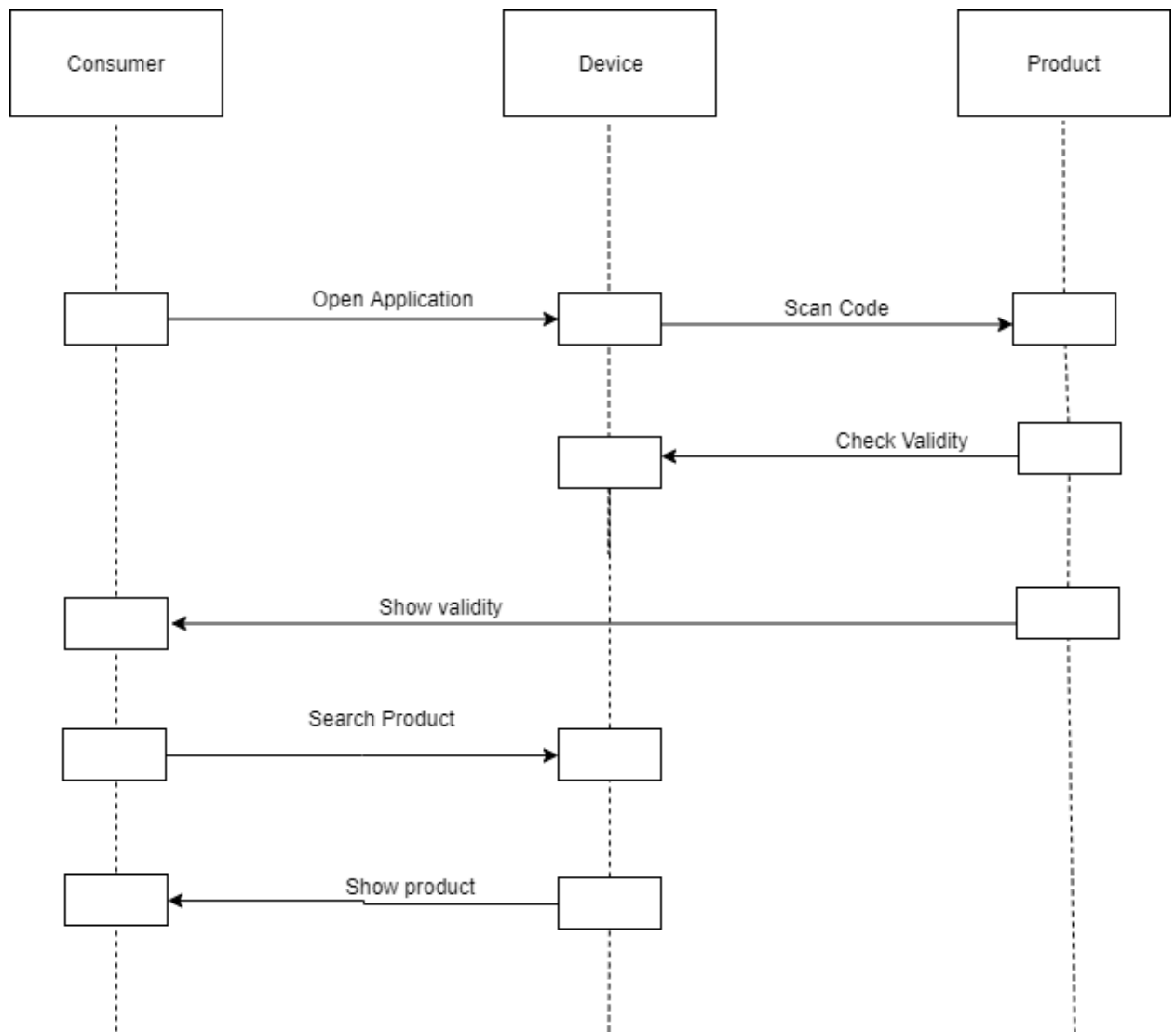


fig:Sequence diagram Consumer

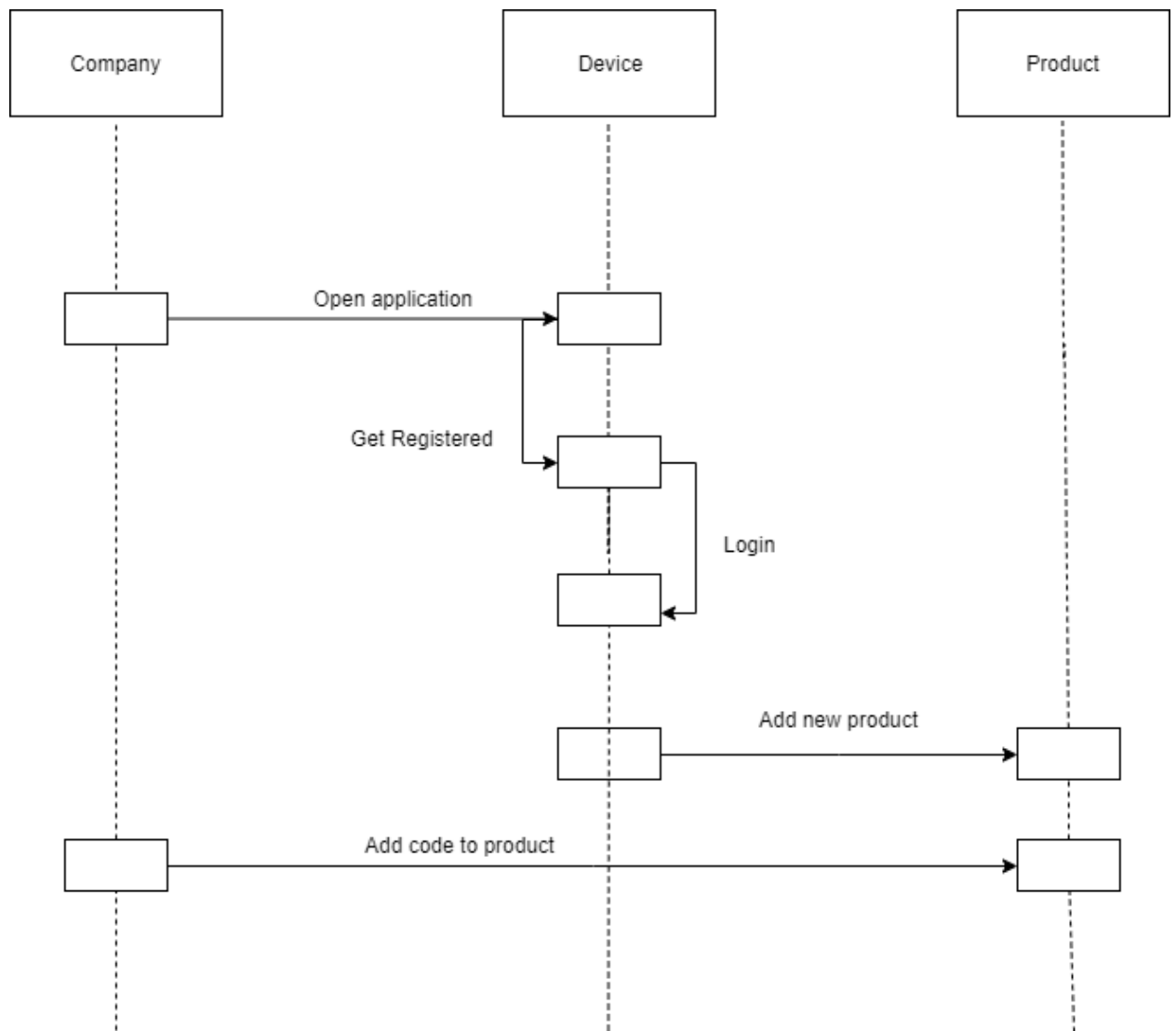


fig:Sequence diagram Company



## CHAPTER 8: CONCLUSION AND FUTURE SCOPE

- **Discussion and Conclusion:**

In this modern day each and every hour new product are coming to market and also their replica is being made. So, buying authentic and genuine product consumer should use our app. It is totally free. On the other hand, companies can get their product sold easily. Overall it will be handy for everyone.

- **Scope for Future Development:**

- ❖ Spread it world wide
- ❖ Adding new features
- ❖ Registration system for user
- ❖ Upgrade the system