

**A**

**PROJECT REPORT**

**ON**

**KANAK- The Soil of India**

Submitted in partial fulfillment for the award of

**Post Graduate Diploma in Advance Computing**

**(PG-DAC) from**

**INSTITUTE OF EMERGING TECHNOLOGIES**

**Authorized Training Centre**



**Under the Guidance of**

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## CERTIFICATE

This is to certify that the project report entitled **Kanak-The Soil of India** is a bonfire work carried out by **Akshay kapse, Akshay Tiwari, Prashant Patel, Pratiyush Pathak** and submitted in partial fulfilment of the requirement for the C-DAC ACTS, DAC course in Institute of Emerging Technology in the batch of Aug 2019.

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## **ACKNOWLEDGEMENT**

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Our most heart full thanks goes to **Mr. Sangram Patil (Director ,IET)** who gave all the required support and kind coordination to provide all the necessities like required hardware , internet facility and extra lab hours to complete the project and throughout the course up to the last day here in C-DAC ACTS, Pune.

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## **Abstract**

This project report will encompass the entire lifecycle of developing the ecommerce platform, from its conceptualization to design, implementation, testing, launch, and initial operations. The report will also touch upon the anticipated challenges, strategies for overcoming them, and the expected impact on the agricultural ecosystem.

As the project unfolds, it will become evident that the integration of e-commerce into the agricultural input sector has the potential to reshape how farmers interact with technology and access critical resources, ultimately contributing to the sustainability and advancement of agriculture.

# Index

Sr. No.	Title	Page No.
1	Introduction	
2	Problem Definition & Scope	
2.1	Problem Definition	
2.2	Goals & Objectives	
2.3	Major Constraints& Outcomes	
3	Software Requirement Specification	
3.1	Purposed System	
3.2	Scope	
4	System Modules	
5	Performance-Requirements	
5.1	H/W Requirements & S/W Requirements	
6	UML Diagram	
6.1	DFD	
6.2	ERD	
6.3	Use case diagram	
6.4	Class Diagram	
6.5	Sequence diagram	
6.6	Activity Diagram	
6.7	Deployment diagram	
6.8	System Architecture	
7	Test Cases	
8	Screenshots	
9	References	

# **1. Introduction**

## **1.1. Introduction**

Agriculture forms the backbone of economies worldwide, providing sustenance, raw materials, and livelihoods for billions. However, traditional methods of procuring agricultural essentials have faced challenges such as limited accessibility, information asymmetry, and inefficiencies in distribution. The integration of e-commerce into the agricultural supply chain addresses these issues by bridging the gap between producers and consumers, enhancing transparency, and empowering farmers with more informed decisions.

In the rapidly evolving landscape of agriculture, the role of technology and digital platforms has become increasingly significant. The emergence of e-commerce in the agricultural sector has transformed the way farmers and stakeholders access vital inputs such as fertilizers, pesticides, and seeds. This project report delves into the creation and development of an e-commerce website dedicated to providing a seamless platform for purchasing agricultural fertilizers, pesticides, small plants, flowers and seeds

## 2. Product overview and Summary

### 2.1. Purpose:

The successful implementation of the proposed e-commerce platform holds several significant implications:

**Accessibility:** The platform bridges geographical gaps, allowing farmers from remote areas to access a wide range of agricultural inputs conveniently.

**Transparency:** Buyers can access comprehensive product information and compare options, fostering an environment of transparency and informed decision-making.

**Market Efficiency:** The platform promotes healthy competition among suppliers, potentially leading to more competitive pricing and improved product quality.

**Empowerment:** Farmers gain more control over their purchasing choices, enabling them to experiment with newer, potentially more sustainable agricultural techniques.

**Technology Adoption:** The project encourages the adoption of digital technology in the agricultural sector, contributing to its modernization and overall growth.

### 2.2. Scope:

This project report will encompass the entire lifecycle of developing the ecommerce platform, from its conceptualization to design, implementation, testing, launch, and initial operations. The report will also touch upon the anticipated challenges, strategies for overcoming them, and the expected impact on the agricultural ecosystem.

As the project unfolds, it will become evident that the integration of ecommerce into the agricultural input sector has the potential to reshape how farmers interact with technology and access critical resources, ultimately contributing to the sustainability and advancement of agriculture.

## **2.3. User Classes and Characteristics:**

### **1. Users:**

Characteristics:

- User authentication and authorization.
- Profile management.
- Role-based access control.
- Password management.

### **2. Products:**

Characteristics:

- Product catalog management.
- Displaying product details.
- Inventory management.

### **3. Product Categories:**

Characteristics:

- Grouping and organizing products into categories

### **4. Address:**

Characteristics:

- Managing user addresses for shipping and billing.

### **5. Orders:**

Characteristics

- Order creation and management.
- Order tracking and status updates.

### **6. Order Details:**

Characteristics:

- Managing individual product details within an order.

### **7. Cart:**

Characteristics:

- Managing user shopping carts.
- Adding/removing items to/from the cart.

These characteristics outline the key attributes and functionalities of the classes in your SpringBoot agricultural ecommerce project.

## **2.4. Design And Implementation Constraints:**

Design and implementation constraints are factors that can limit or influence the design and development of an agri ecommerce online shopping website. Here are some potential constraints you might encounter:

### **1. Technology Stack Constraints:**

- Your organization might have limitations on the technologies you can use, which could impact your choice of programming languages, frameworks, and tools.

### **2. Budget Constraints:**

- Limited financial resources might affect the scope of your project, including features, development time, and the quality of external services you can afford.

### **3. Time Constraints:**

- Tight deadlines might restrict the amount of time available for design, development, testing, and deployment.

### **4. Scalability Constraints:**

- The platform must be able to handle increasing levels of traffic and user activity, which could affect architectural decisions.

### **5. Security and Compliance Constraints:**

- Compliance with industry regulations (e.g., data privacy laws) and security requirements may impose certain design and implementation restrictions.

### **6. Integration Constraints:**

- If your website needs to integrate with external systems or APIs, you'll need to work within the constraints of those systems' capabilities.

### **7. User Experience (UX) Constraints:**

- User preferences, behavior, and accessibility requirements might influence design decisions.

### **8. Browser and Device Constraints:**

- The website must be usable and functional across different browsers, devices, and screen sizes.

**9. Legacy System Constraints:**

- If the website needs to interface with existing legacy systems, compatibility and data migration could be challenges.

**10. Data Volume and Storage Constraints:**

- If dealing with large amounts of data, constraints related to storage, retrieval speed, and data processing might arise.

**11. Regulatory Constraints:**

- Depending on the region or industry, certain regulations might dictate how you handle user data, payments, and other aspects of your website.

**12. Cultural and Language Constraints:**

- If targeting a diverse audience, the website might need to support multiple languages and cultural differences.

**13. Testing and QA Constraints:**

- Constraints related to testing environments, availability of test data, and regression testing could impact your development process.

**14. Operational Constraints:**

- Operational aspects like maintenance, updates, and support might have limitations that affect the website's design.

**15. Team Constraints:**

- The size, skills, and availability of your development team could impact the complexity and speed of implementation.

**16. Third-Party Service Constraints:**

- Dependencies on third-party services (payment gateways, APIs, etc.) might introduce constraints based on their capabilities and limitations.

- It's important to thoroughly assess and manage these constraints throughout your project to ensure a successful and well-functioning agri ecommerce online shopping website.

### 3. Requirements

### **3.1 FUNCTIONAL REQUIREMENTS:**

### **3.1.1 USE CASE FOR ADMIN/VENDOR:**

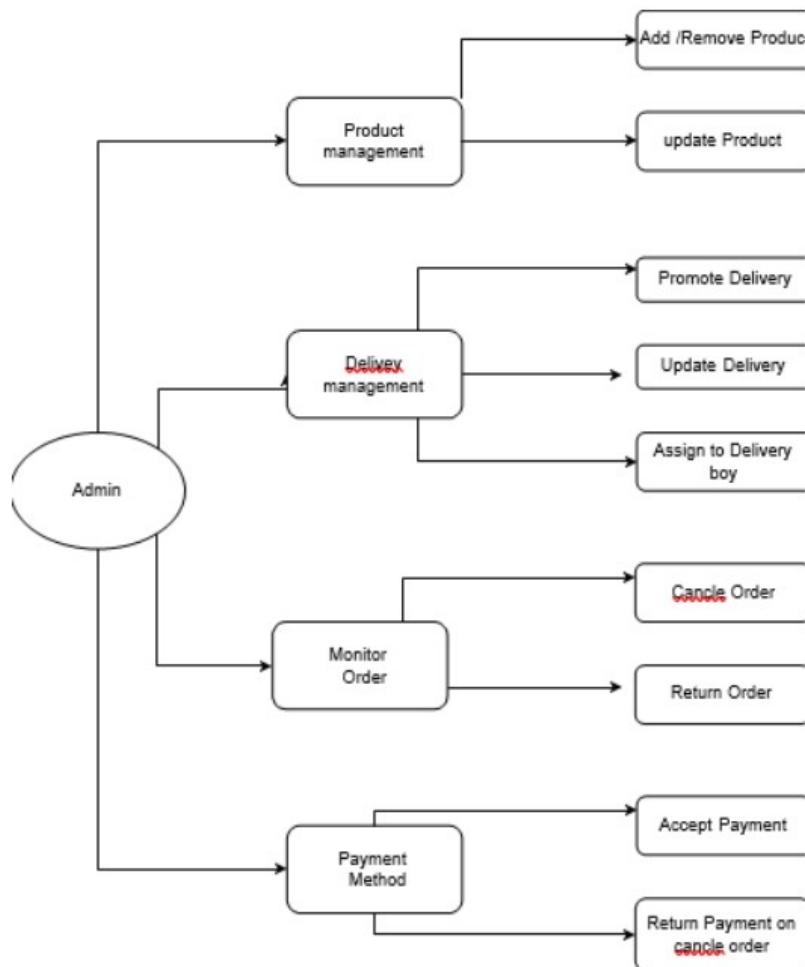
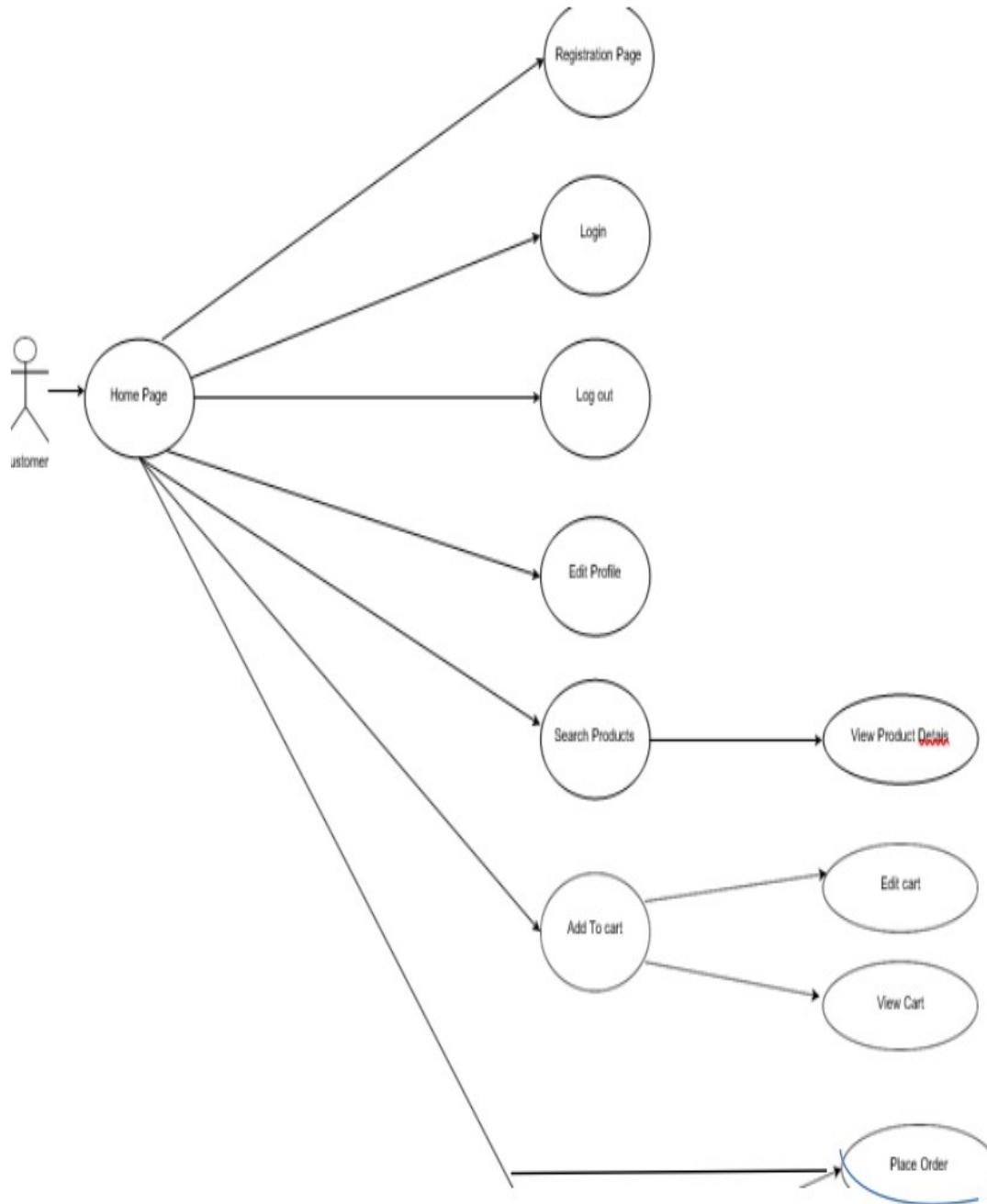


Fig.3.1.1

### 3.1.1 USE CASE FOR USER:



## **3.2 NON FUNCTIONAL REQUIREMENTS:**

### **3.2.1 Usability Requirements:**

Usability is a crucial aspect of any ecommerce website, especially one focused on agricultural products like fertilizers, seeds, and pesticides. Here are some usability requirements to consider for your agricultural ecommerce website project:

#### **Intuitive Navigation:**

-The website should have clear and intuitive navigation menus that make it easy for users to find the products they are looking for. Use categories and subcategories to organize products logically.

#### **Search Functionality:**

- Implement a robust search feature that quickly returns accurate results based on keywords and filters. Provide auto-suggestions as users type in the search bar.

#### **Clear Product Information:**

-Each product page should have comprehensive and easy-to-understand information, including descriptions, specifications, usage instructions, and safety guidelines.

#### **High-Quality Images:**

-Use high-resolution images that showcase products from different angles. Enable users to zoom in for closer inspection.

#### **Responsive Design:**

- Ensure the website is responsive and functions well on various devices, including desktops, tablets, and smartphones.

### **3.2.2 PERFORMANCE REQUIREMENTS:**

Ensuring optimal performance for your agricultural ecommerce website is essential to provide a seamless and enjoyable user experience while also improving search engine rankings. Here are some performance requirements you should consider for your project:

#### **Page Load Speed:**

-Pages should load quickly to prevent user frustration and reduce bounce rates. Aim for a load time of around 2-3 seconds or less.

#### **Optimized Images:**

-Use compressed and appropriately sized images to reduce page load times. Implement lazy loading to load images only when they're visible to the user.

#### **Caching Mechanisms:**

- Implement browser caching and server-side caching to store frequently accessed resources, reducing load times for returning visitors.

#### **Content Delivery Network (CDN):**

-Use a CDN to distribute website content across multiple servers geographically, reducing latency for users from different locations.

#### **Minimized HTTP Requests:**

- Minimize the number of HTTP requests by combining CSS and JavaScript files, reducing the load on the server.

#### **Efficient Code and Scripts:**

- Optimize code and scripts to ensure they are clean, concise, and free from unnecessary elements.

#### **Mobile Performance:**

-Prioritize mobile performance with responsive design and mobile-specific optimizations. -Database Optimization: Optimize database queries and reduce the load on the database server to enhance overall website speed.

#### **Server Resources:**

-Choose a reliable and scalable web hosting provider that can handle the expected traffic and resource demands.

### **3.2.3 RELIABILITY REQUIREMENTS:**

For an agricultural ecommerce website project, reliability is crucial to ensure that the website functions smoothly and consistently for users. Here are some reliability requirements to consider:

#### **Uptime and Availability:**

- Aim for a high uptime percentage (e.g., 99.9%) to ensure the website is accessible to users at all times. Choose a reliable hosting provider with redundant servers and data centers.

#### **Backup and Disaster Recovery:**

- Implement regular automated backups of the website and its database to prevent data loss. Have a well-defined disaster recovery plan in place to quickly restore the website in case of unexpected events.

#### **Server Monitoring:**

- Utilize server monitoring tools to track server health, resource utilization, and potential issues in real-time.

#### **Downtime Notifications:**

- Implement a mechanism to notify users in advance if maintenance or upgrades are planned, minimizing disruptions.

#### **Data Integrity and Security:**

- Implement robust security measures to prevent unauthorized access and data breaches. Use encryption for sensitive customer data.

#### **Bug Tracking and Resolution:**

- Set up a system to track and prioritize reported bugs and issues, and ensure timely resolution.

#### **Quality Assurance Testing:**

- Conduct thorough testing before deploying any changes or updates to the website to avoid introducing new issues.

### **3.2.4 PORTABILITY REQUIREMENTS:**

Portability is important to ensure that your agricultural ecommerce website can be easily moved or adapted to different environments, platforms, or technologies. Here are some portability requirements to consider for your project:

#### **Cross-Browser Compatibility:**

-Ensure the website works well and looks consistent across different web browsers (Chrome, Firefox, Safari, etc.).

#### **Responsive Design:**

-Design the website to be responsive, adapting to various screen sizes and devices (desktops, tablets, smartphones).

#### **Platform Independence:**

-Build the website using technologies and frameworks that are not tied to a specific platform, allowing for deployment on different systems.

#### **Database Independence:**

-Use a database management system that supports standard SQL queries, making it easier to switch to a different database if needed.

#### **Code Modularity:**

-Design the codebase with modularity in mind, so that individual components can be easily modified or replaced without affecting the entire system.

#### **API Integration:**

-Implement APIs for external services, enabling smooth integration with third-party systems such as payment gateways or shipping providers.

#### **Data Format Consistency:**

-Ensure consistent data formats and structures to facilitate data exchange and integration with other systems.

#### **Dependency Management:**

-Use package managers to handle dependencies, making it easier to install and manage external libraries.

**Documentation:**

-Provide clear and comprehensive documentation for developers and administrators, making it easier to understand the system's architecture and components

**Configuration Management:**

- Store configuration settings separately from the codebase to facilitate easy configuration changes for different environments.

### **3.2.5 SECURITY TECHNIQUES:**

Security is of utmost importance for an agricultural ecommerce website that handles customer data, financial transactions, and sensitive information. Here are some security techniques to implement in your project:

**Secure Authentication and Authorization:**

-Implement strong password policies for user accounts. Use multi-factor authentication (MFA) to add an extra layer of security. Limit user privileges to access only the necessary parts of the system.

**Secure Payment Processing:**

-Integrate trusted and PCI DSS-compliant payment gateways. Ensure that credit card information is never stored on your servers.

**SSL Encryption:**

-Use SSL certificates to encrypt data transmission between users' browsers and your server (HTTPS).

**Regular Security Updates:**

-Keep all software, plugins, and frameworks up to date with the latest security patches.

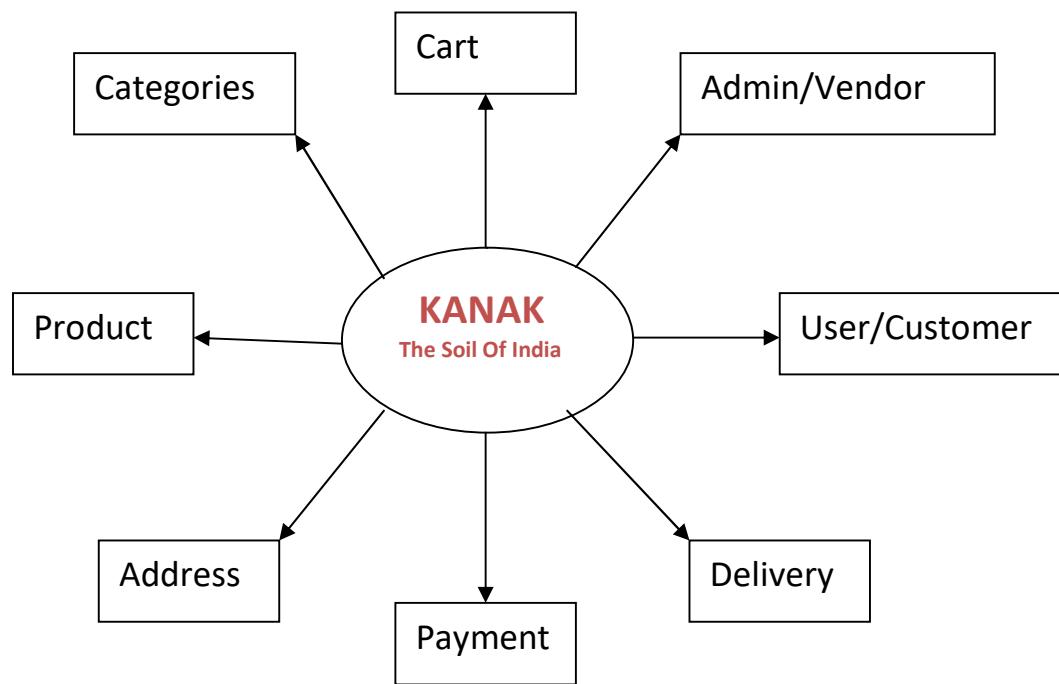
**Input Validation and Sanitization:**

-Validate and sanitize user inputs to prevent SQL injection, cross-site scripting (XSS), and other injection attacks.

**Firewall Protection:**

-Implement web application firewalls (WAF) to filter out malicious traffic and attacks.

## 4. System Modules



# 5. PERFORMANCE REQUIREMENTS

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**Server Resources:**

-Choose a reliable and scalable web hosting provider that can handle the expected traffic and resource demands.

# 6. UML DIAGRAMS

## 6.1. CLASS DIAGRAM:

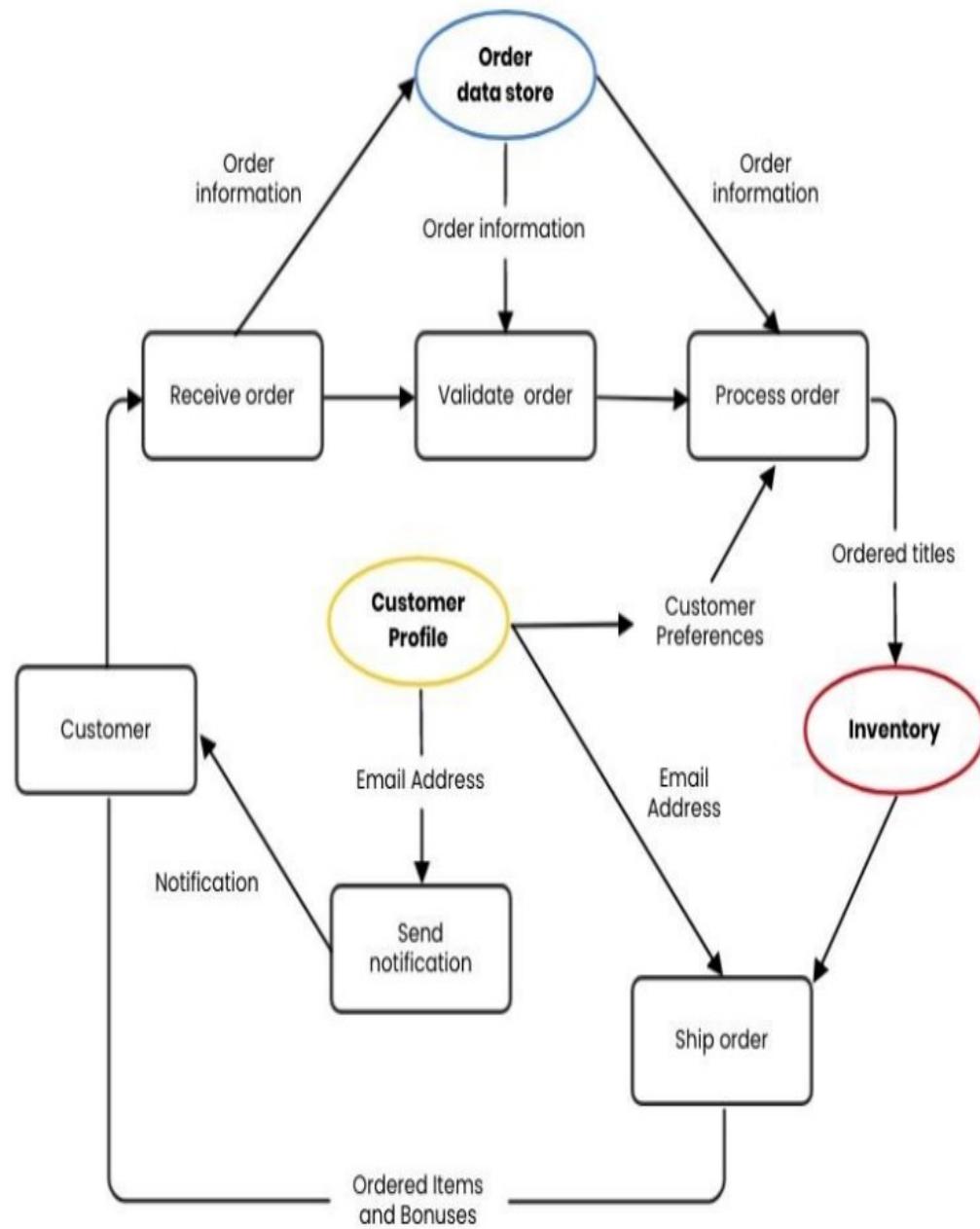
<b>Users</b> [userId] INT [firstName] VARCHAR(25) [lastName] VARCHAR(25) [email] VARCHAR (25) [mobNo] VARCHAR (10) [gstInNo] VARCHAR (15) [city] VARCHAR (25) [roleType] VARCHAR (15) [password] VARCHAR (50)	<b>Products</b> [productId] INT [productName] VARCHAR (50) [price] FLOAT (53) [qty] INT [volume] FLOAT (53) [brand] VARCHAR (50) [userId] INT [prodSubCatId] INT [description] VARCHAR (100) [image] VARCHAR (500)
<b>Login()</b> <b>GetUsers()</b> <b>PutUser()</b> <b>Registration()</b> <b>DeleteUser()</b>	<b>GetProduct()</b> <b>PostProduct()</b> <b>PutProduct()</b> <b>DeleteProduct()</b>

<b>ProductCatagories</b> [userId] INT [firstName] VARCHAR(25) [lastName] VARCHAR(25) [email] VARCHAR (25) [mobNo] VARCHAR (10) [gstInNo] VARCHAR (15) [city] VARCHAR (25) [roleType] VARCHAR (15) [password] VARCHAR (50)
<b>GetProductCategory()</b> <b>PostProductCategory()</b> <b>PutProductCategory()</b> <b>DeleteProductCategory()</b>

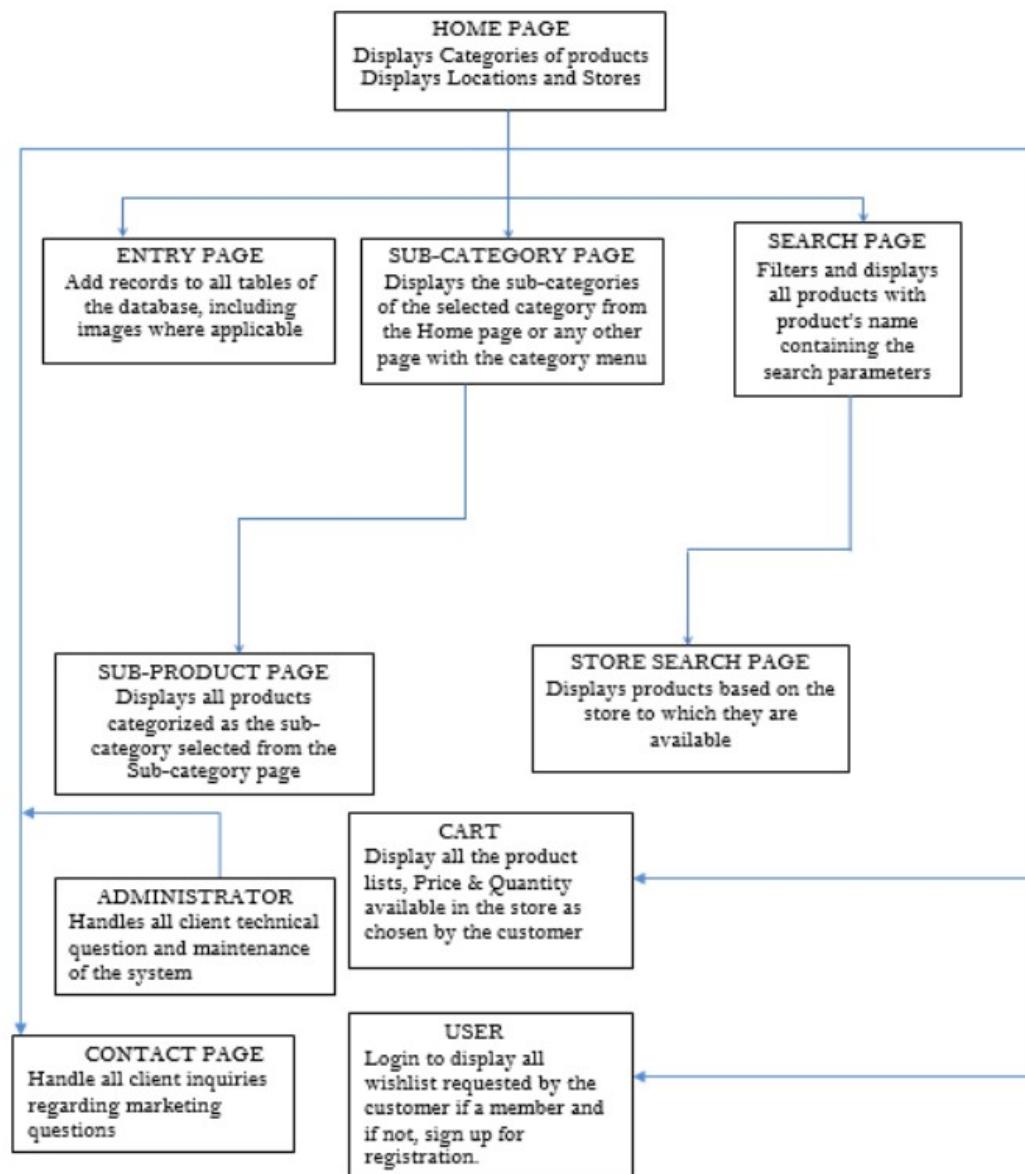
<b>Address</b>	<b>Orders</b>
[addressId] INT [city] VARCHAR (50) [state] VARCHAR (50) [zip] VARCHAR (6) [country] VARCHAR (50) [district] VARCHAR (50)	[orderId] INT [orderDate] DATE [userId] INT [addressId] INT [paymentId] INT
<b>GetAddress()</b> <b>PostAddress ()</b> <b>PutAddress ()</b> <b>DeleteAddress ()</b>	<b>GetOrders()</b> <b>PostOrders()</b> <b>PutOrders()</b> <b>DeleteOrders()</b>

<b>OrderDetails</b>	<b>Cart</b>
[Id] INT [productId] INT [qty] INT [orderId] INT	[cartId] INT [userId] INT
<b>GetOrders()</b> <b>PostOrders()</b> <b>PutOrders()</b> <b>DeleteOrders()</b>	<b>GetCart()</b> <b>PutCart()</b> <b>DeleteCart()</b>

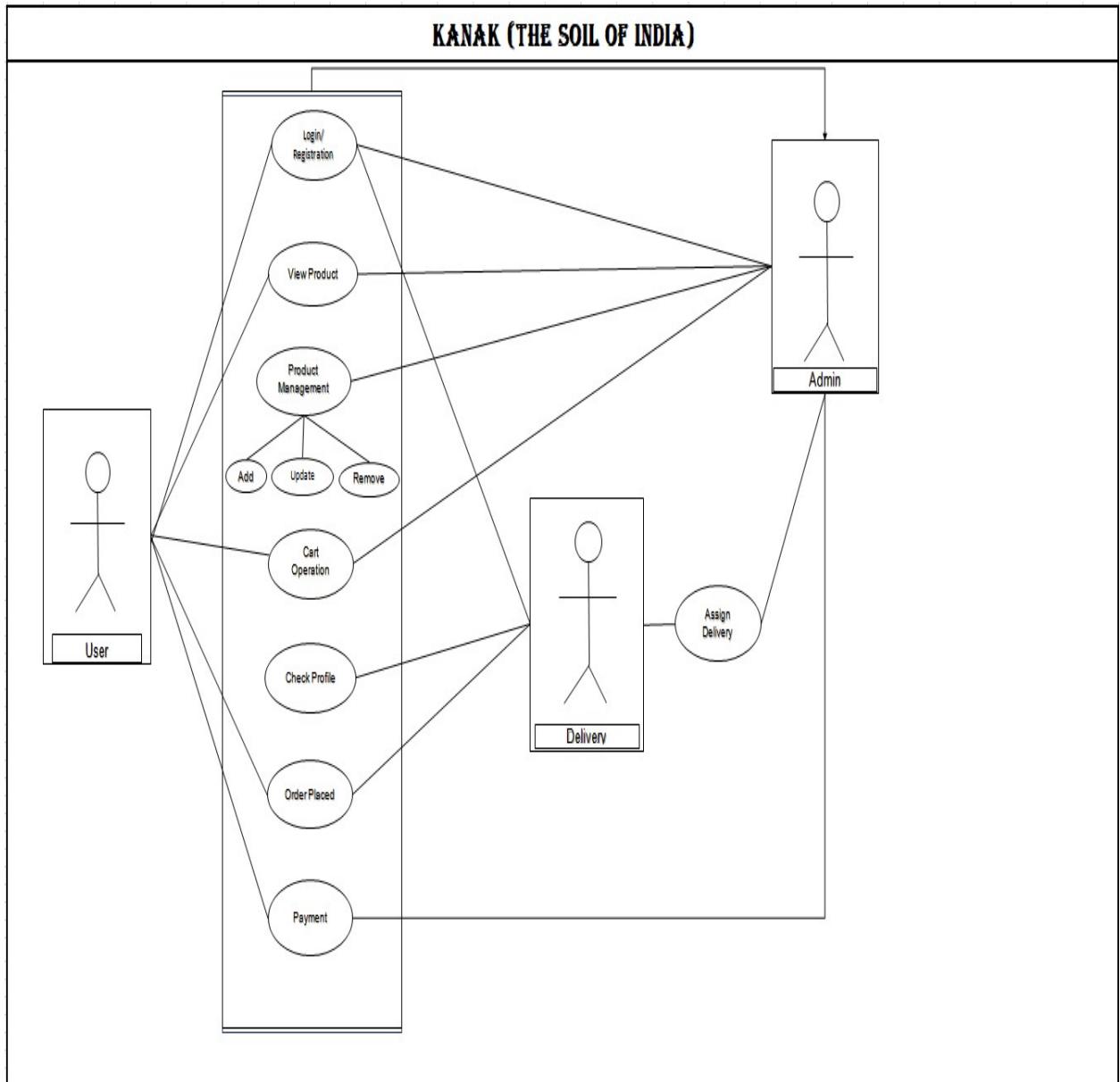
## 6.2. DATA-FLOW DIAGRAM:



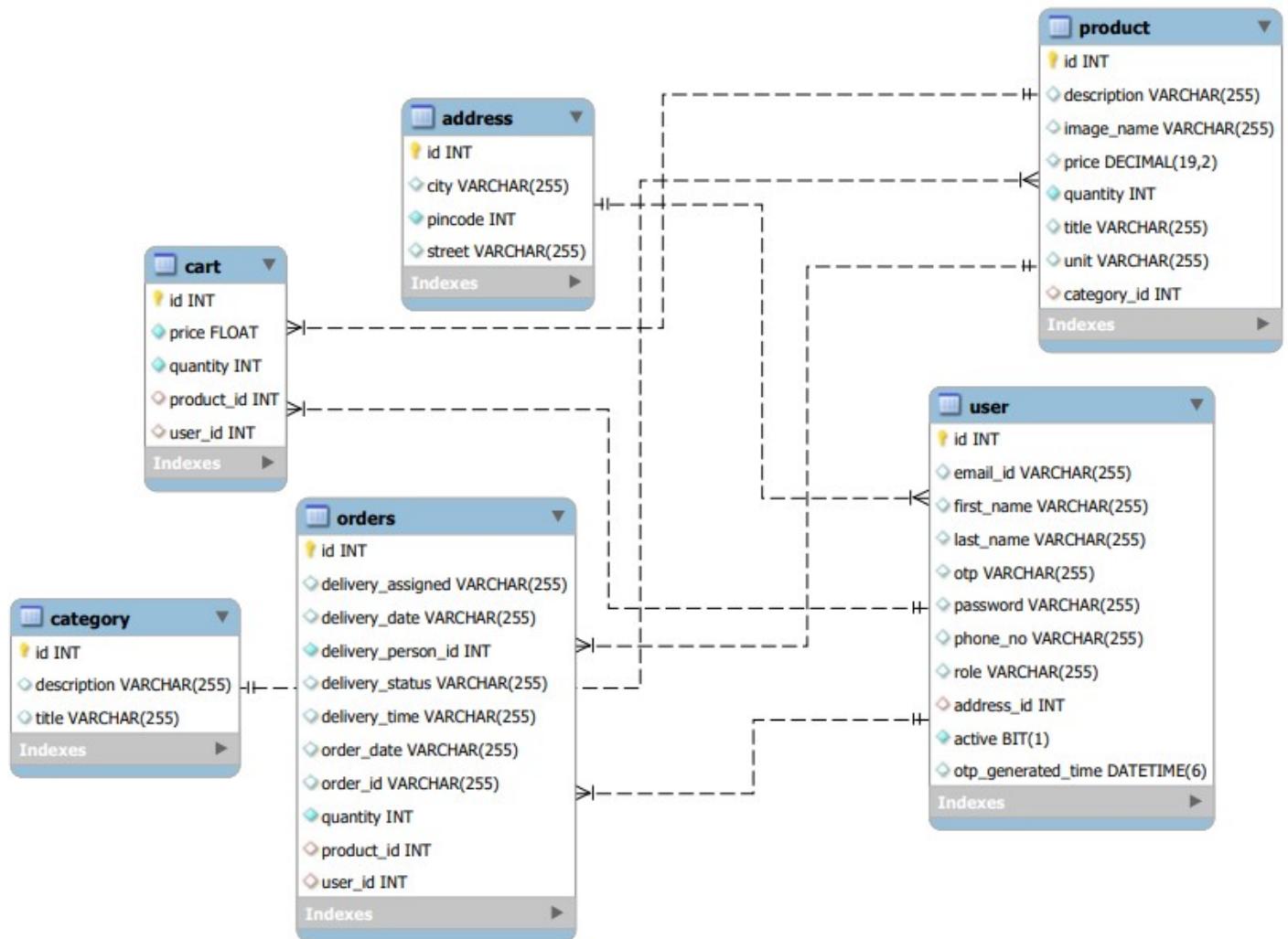
### 6.3. FUNCTIONALITY DIAGRAM:



## 6.4. USE CASE DIAGRAM:



## 6.5. ER DIAGRAM:



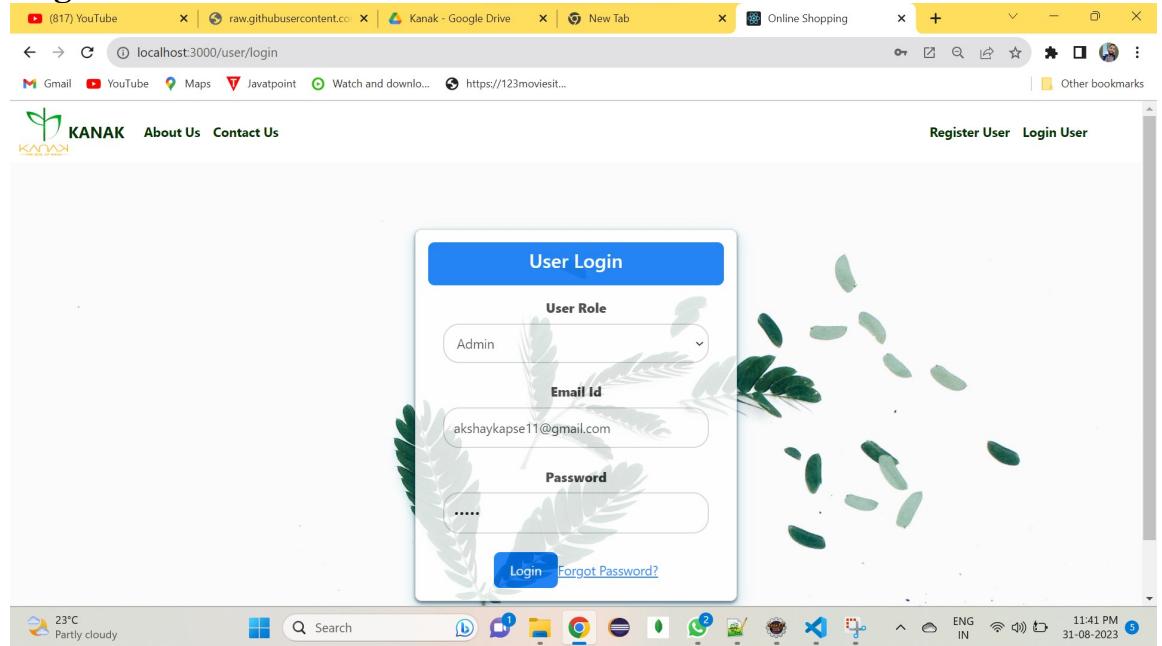
# 7. TEST CASE RESULTS

## GENERAL TESTING:

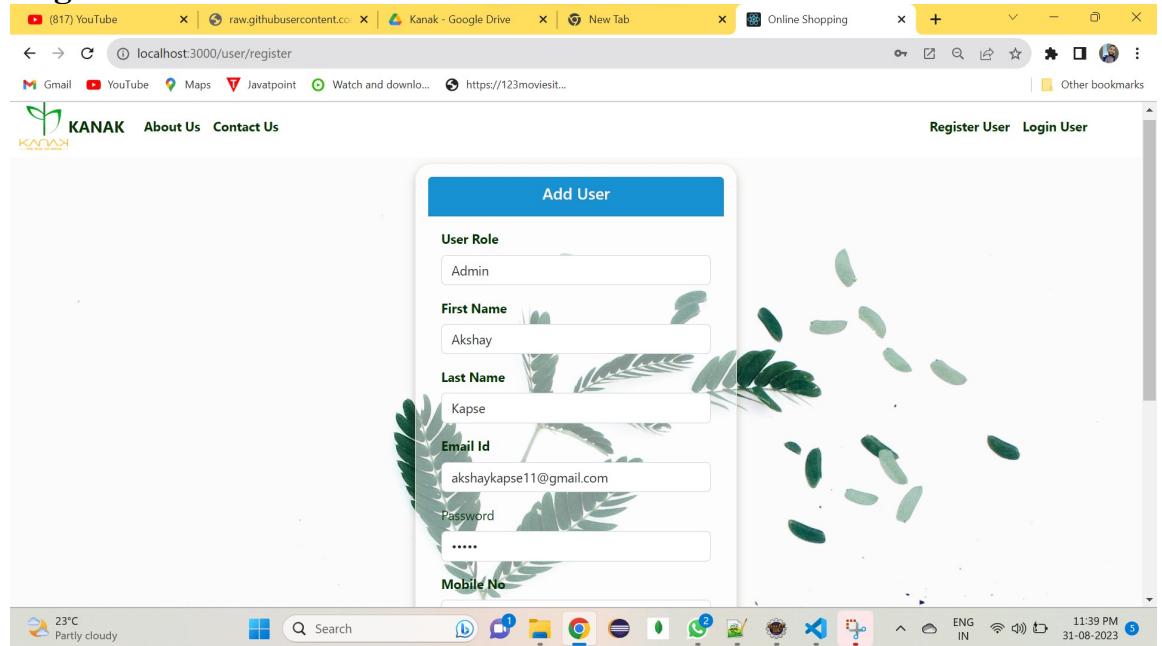
SR-NO	TEST CASE	EXPECTED RESULT	ACTUAL RESULT	ERROR MESSAGE
1	Register Page	Redirected to Next page	OK	Nothing
2	Login Page	Pop-up will come	Ok	Please enter username and password again .
3	Reset login	Only users password will be reseted	Ok	Nothing
4	Quick search products	Gives all flight details	Ok	Nothing
5	Selecting product for adding into cart	All the fields should be filled for submission	Ok	Nothing
6	Checking login or not	User is logged in or not	Ok	Nothing
7	Add person details for tickets	Add informations according to no of seats allocated	Ok	Nothing
8	Goto ticket page	Set added information about person	Ok	Nothing
9	Add information in booking table	Save this all data into booking table	Ok	Nothing
10	Transaction	On back it should be reverted to previous page	Ok	Nothing
11	View transaction done	It shows you all transactions done previously	Ok	Nothing
12	Logout	It will logout from user profile.	Ok	Nothing

# 8. SCREENSHOTS

## Login:



## Register:



## HOME:

The screenshot shows the homepage of the KANAK Online Shopping website. At the top, there is a navigation bar with links for 'About Us' and 'Contact Us'. Below the navigation bar, a large banner features the text 'Flowers and More' and 'Making your life smell beautiful'. A search bar is present, along with a sidebar for 'All Categories' including Seeds, Pesticides, Farming tools, and Fertilizers. On the right side, there is a large image of pink tulips. The bottom of the screen shows a taskbar with various application icons and system status.

## Categories:

The screenshot shows the categories page of the KANAK Online Shopping website. It features a 'COMING SOON' banner at the top. Below it, there is a sidebar for 'All Categories' and a main area displaying four product cards: 'Peace Lily Plant' (Price: ₹249/units), 'Jade Plant Mini' (Price: ₹200/units), 'Bamboo Palm' (Price: ₹320/units), and 'Snake Plant - Golden Hahnii' (Price: ₹200/units). Each card includes an 'Add to Cart' button and a stock count (e.g., Stock : 25, Stock : 20, Stock : 24). The bottom of the screen shows a taskbar with various application icons and system status.

## Add Products to Cart:

The screenshot shows a product detail page for a 'Bamboo Palm Plant'. At the top, there's a navigation bar with links for 'All Categories', 'Seeds', 'Pesticides', 'Farming tools', 'Fertilizers', and 'Plant'. Below the navigation is a sidebar with a large image of the plant in a white pot. The main content area has a blue header 'Bamboo Palm Plant' and a green decorative border. It includes a 'Description' section with '1 unit', a 'Unit' section with 'units', a price of '₹320', and a stock level of 'Stock : 20'. A 'Related Products:' section is visible at the bottom. The browser taskbar at the bottom shows various open tabs and system status.

## Add New Product:

The screenshot shows a 'Product Description' form. It includes fields for 'Category' (with a dropdown placeholder 'Select Category'), 'Unit' (with a dropdown placeholder 'Select Unit'), 'Product Quantity' (an input field), 'Product Price' (an input field), and 'Select Product Image' (a file upload field showing 'Choose File' and 'No file chosen'). A large green decorative border surrounds the form. The browser taskbar at the bottom shows various open tabs and system status.

## All Orders:

Screenshot of the 'All Orders' page from a web application. The page displays a table of orders with columns: Order Id, Product, Name, Description, Quantity, Total Price, Customer Name, Street, City, Pin code, Mobile No., Order Date, Delivery Date, Delivery Status, and Delivery Person. The table contains four rows of data.

Order Id	Product	Name	Description	Quantity	Total Price	Customer Name	Street	City	Pin code	Mobile No.	Order Date	Delivery Date	Delivery Status	Delivery Person
DFFLA2ZUFK		Adhaar (Amino Acid 20%)	1 lit.	2	1100.0	Nikhil Dhole	pune	pune	411052	8830874977	28-08-2023	2023-09-01	Delivered	Pratiyush
G3NQHAVG8K		Aandhi - Ethion 40% + Cypermethrin 5% EC	1 Lit.	1	1149.0	pra pat	pune	pune	411015	1234567890	28-08-2023	13:36	Pending	Pending
G3NQHAVG8K		Auto Sprayer	Automatic Spray	2	26000.0	pra pat	pune	pune	411015	1234567890	28-08-2023	13:36	Pending	Pending
ZWGQDQBB0J		Advene -	500 ml	4	1600.0	Akshay Karve	Karve	Pune	411051	9521429873	28-	2023-	Delivered	Pratiyush

Below the table, the system status is shown as '23°C Partly cloudy'. The taskbar at the bottom includes icons for various applications like Mail, Calendar, and Browser.

## Assign Delivery:

Screenshot of the 'Assign Delivery' page from a web application. The page displays a table of customer orders with columns: Order Id, Product, Name, Description, Quantity, Total Price, Customer Name, Street, City, Pin code, Mobile No., Order Date, Delivery Date, Delivery Status, Delivery Person, and More. The table contains two rows of data.

Order Id	Product	Name	Description	Quantity	Total Price	Customer Name	Street	City	Pin code	Mobile No.	Order Date	Delivery Date	Delivery Status	Delivery Person	More
G3NQHAVG8K		Aandhi - Ethion 40% + Cypermethrin 5% EC	1 Lit.	1	1149.0	pra pat	pune	pune	411015	1234567890	28-08-2023	13:36	Pending	Pending	Pending
G3NQHAVG8K		Auto Sprayer	Automatic Spray	2	26000.0	pra pat	pune	pune	411015	1234567890	28-08-2023	13:36	Pending	Pending	Pending

Below the table, the system status is shown as '23°C Partly cloudy'. The taskbar at the bottom includes icons for various applications like Mail, Calendar, and Browser.

## About Us:

localhost:3000/about

Gmail YouTube Maps Javatpoint Watch and download https://123moviesit...

Other bookmarks

### Our Team

Akshay Tiwari akshay@kanak.com Member	Pratyush pathak pratyush@kanak.com Member	Akshay Kapse Kapse@kanak.com Leader
Prashant patel prashant@kanak.com Member		

23°C Near record

Search

ENG IN 11:34 PM 31-08-2023

## Contact Us:

localhost:3000/contact

Gmail YouTube Maps Javatpoint Watch and download https://123moviesit...

Register User Login User

### Get In Touch

Send

EUR/INR -0.58%

Search

ENG IN 11:35 PM 31-08-2023



## **9. References**

<http://www.google.com>

<https://start.spring.io/>

<http://www.atlassian.com>

<http://www.agricoop.in>

<http://www.w3.org>

<http://www.wikipedia.org>

<http://www.legacy.reactjs.org>