



# online pet shop

Let your pet be smarter

EFFICIENT AND RELIABLE WAY TO MEET  
NEEDS OF YOUR FURRY FRIEND

Namrata salunke

## Index

Assignment No	Title	Signature of Instructor
1	<b>Preliminary Investigation and its activities</b>	
	1.1 Problem identification and definition	
	1.2 Problem Description	
	1.3 Fact Finding techniques	
	1.4 Drawbacks of Existing system	
	1.5 Scope of the Proposed System	
	1.6 Feasibility Study	
2	<b>Requirement Specification</b>	
	2.1 Data Requirements of the System	
	2.2 Identify End Users of the System	
	2.3 Input Data to the System	
	2.4 Output Information from the System	
	2.5 Functional/ Nonfunctional/Processing Requirements of the System	
3	<b>Database Design</b>	
	3.1 Identify the entities and the attributes	
	3.2 E-R Diagram	
	3.3 Identifying all tables, fields, relationship between tables etc.	
	3.4 Normalize database	
4	<b>System Design</b>	
	4.1 Class diagram	
	4.2 Object diagram	
	4.3 Component diagram	
	4.4 Deployment diagram	
	4.5 Use case diagram	
	4.6 Activity diagram	
	4.7 State chart diagram	
	4.8 Sequence diagram	
	4.9 Collaboration diagram	

# Preliminary Investigation

## 1.1 Problem Identification and Definition

In today's fast-paced world, pet owners often struggle to find a reliable and efficient way to meet their pet's needs. Traditional pet stores have several limitations such as restricted operating hours, limited inventory, and lack of personalized customer service. Additionally, geographical location can make it difficult for pet owners in remote or urban areas to access high-quality pet supplies.

Many pet owners also lack proper guidance when it comes to pet care, diet, and health, which leads to incorrect purchases. Current online platforms often fall short in offering recommendations, choices, etc.

By addressing these challenges, the Online Pet Shop seeks to enhance accessibility, convenience, and overall pet ownership experience, ensuring that pets and their owners receive the best possible care and support.

## 1.2 Problem Description

Issues in the current manual/physical shop system:

### 1. Limited Accessibility (Restricted to Shop Hours)

Customers can only purchase products during the physical shop's working hours. This creates difficulties for people who work late, live far away, or need emergency pet supplies outside of business hours.

### 2. No Centralized Record of Customers, Orders, and Services

The existing system does not maintain proper digital records of customer details, past orders, or service usage. This makes it hard to analyse customer behaviour, provide personalized offers, or track regular requirements like repeat purchases of food or medicines.

### 3. Manual Inventory Tracking Leads to Stock Errors

Since most shops still record stock manually, mistakes are common. Products may run out without the shopkeeper realizing, leading to stock shortages. On the other hand, some products may be overstocked, causing wastage of resources and storage space.

### 4. Customer Relationship Gap

Traditional shops rarely keep track of customer purchase history or preferences. As a result, they cannot provide loyalty discounts, personalized offers, or subscription-based packages (e.g., monthly dog food delivery). This reduces long-term customer retention and satisfaction.

## 1.3 Fact-Finding Techniques

### 1. Observation

Direct visits to local pet shops and veterinary clinics can help in understanding how customers currently purchase products and avail services. By observing customer behaviour, waiting times, and transaction handling, one can identify the shortcomings of the manual system. For example, noticing frequent customer complaints about out-of-stock products highlights the need for a digital inventory system.

### 2. Interviews

Talking directly with pet owners, shopkeepers, veterinarians, and grooming staff provides first-hand information about their needs, problems, and expectations. Shopkeepers may mention difficulties in stock management, while customers may stress on the need for online delivery or appointment booking. Such interviews give valuable insights into system requirements.

### 3. Questionnaires / Surveys

Distributing surveys (online or offline) to pet owners can help collect large-scale data about their preferences. Questions can include:

How often do you purchase pet supplies?

Would you prefer home delivery of pet food and medicines?

How important is online appointment booking for grooming/vet services?

What payment methods do you prefer (cash, UPI, card)?

Analysing this data ensures the system is designed according to actual customer needs.

#### 4. Document Review

Reviewing competitor websites, online pet care platforms, and industry reports provides useful secondary data. It helps in understanding what features are commonly offered (like product categories, adoption listings, and delivery options) and what gaps exist in the market. Studying such documents also ensures that the new system includes modern features and remains competitive.

## 1.4 Drawbacks of Existing System

### 1. Paper-Based Registration and Billing

In the current system, most small pet shops record sales and customer details on paper or in basic notebooks. This leads to data loss, human errors, and difficulties in tracking customer history or repeated purchases. Over time, managing these records becomes highly inefficient.

### 2. No Digital Record of Customers, Orders, or Inventory

Since there is no centralized digital database, shopkeepers cannot access detailed information about past sales, current stock, or customer behaviour. This prevents data-driven decision making, personalized offers, or loyalty programs, which are common in modern online platforms.

### 3. No Online Payment

Customers are restricted to physical payments, usually cash, when purchasing products or booking services. With the increasing trend of digital transactions (UPI, debit/credit cards, net banking), the lack of online payment support makes the system outdated and less convenient..

#### **4. Time-Consuming and Error-Prone Processes**

Manual entry of sales, orders, and appointments consumes a lot of time for both shop staff and customers. Mistakes like incorrect billing, mismanaged stock updates, or lost appointment details are common. This reduces overall efficiency and customer satisfaction.

### **1.5 Scope of the Proposed System**

The Online Pet Shop will provide:

#### **1. Wide Range of Pet Supplies**

The system will allow customers to browse and purchase a variety of products such as pet food, grooming items, medicines, toys, and accessories. Categories will be well-organized, making it easy to search and compare products.

#### **2. Doorstep Delivery of Pet Products**

The system will integrate a delivery service where customers can receive their orders at home. Delivery status updates and tracking features will improve customer satisfaction and trust.

#### **3. Customer Accounts and Order Tracking**

Each registered customer will have an account to view their order history, track ongoing deliveries, and manage appointments. This improves transparency and enhances user experience.

#### **4. Online Payments and Multiple Modes of Transaction**

The platform will support secure online payments through UPI, debit/credit cards, net banking, and digital wallets. Customers can also opt for cash on delivery. This flexibility ensures convenience and caters to different user preferences.

#### **5. Special Offers, Discounts, and Subscriptions**

Customers can benefit from loyalty programs, discount coupons, and subscription packages (e.g., monthly food delivery). These features will increase customer retention and ensure regular sales for the business.

#### **6. Feedback Collection and Continuous Improvement**

After every purchase or service, customers will be able to rate their experience and leave suggestions. This feedback will help administrators improve product quality, service efficiency, and overall customer satisfaction.

## 7. Scalability for Future Expansion

The proposed system will be designed to handle more users, products, and services in the future. It can also integrate advanced features like AI-based pet care tips, live vet consultations, or GPS tracking for pet safety.

## 1.6 Feasibility Study

A feasibility study ensures that the proposed system is practical, cost-effective, and can be implemented successfully within the available resources and time. The following aspects are considered:

### 1. Technical Feasibility

The proposed system is technically feasible because:

It can be developed using widely available technologies such as web applications (HTML, CSS, PHP, etc.) and a relational database (MySQL).

Hosting can be done on affordable cloud platforms such as AWS, Azure, or even shared hosting providers.

No specialized or high-end hardware is required. A normal PC or laptop for administrators and a mobile/desktop browser for customers are sufficient.

Existing open-source frameworks and payment gateway integrations (PayPal) make development faster and reliable.

Thus, there are no major technical barriers to implementing the system.

### 2. Economic Feasibility

The system is cost-effective because:

Initial development can be done at a low cost using open-source tools and frameworks.

Hosting and domain charges are relatively affordable.

Compared to manual record-keeping, the system reduces costs related to paper, printing, and physical storage.

Automation of tasks like inventory management, billing, and notifications saves manpower costs.

Online marketing and digital presence can increase sales and revenue, balancing the investment quickly.

Therefore, the project is economically viable.

### 3. Operational Feasibility

The system is easy to operate and manage because:

Customers will find the interface user-friendly, with clear navigation for shopping and making payments.

Shop administrators can easily update products, manage stock, and handle appointments without requiring advanced technical skills.

Automated notifications reduce human errors and ensure smooth operations.

Training requirements for staff are minimal since the system is designed with simplicity in mind.

Hence, the system is operationally practical and can be adopted smoothly.

### 4. Time Feasibility

The project can be completed within a reasonable time frame, depending on the scope:

A basic version (product listings, orders, payments, simple appointment booking) can be developed within 2–3 weeks.

A full-featured version (adoption listings, loyalty programs, advanced notifications) may take 1–2 months with proper planning.

Since the tools required are easily available and the design is straightforward, deadlines can be met without significant delays.

Thus, the project is time-feasible and can be delivered on schedule.

# ❖ Requirement Specification

## 2.1 Data Requirements of the System

### 1. Customer Data:

- Full Name
- Contact Number
- Email ID
- Address
- Pet Type (Dog, Cat, Bird, etc.)
- Order History

### 2. Product Data:

- Product ID
- Name
- Category (Food, Toys, Grooming, Accessories)
- Price
- Stock Quantity
- Supplier details

### 3. Order Data:

- Order ID
- Customer ID
- Product Details
- Total Price
- Payment Status
- Delivery Status

## 2.2 Identify End Users of the System

### 1. Customers/Pet Owners

- Browse and purchase products.
- Review and rate products.

## 2. Shop Administrator

- Manage inventory, orders, and services.
- Provide articles, blogs, or guides on pet care, grooming, and health.
- View reports and customer feedback.

## 2.3 Input Data to the System

From Customers:

- ✓ Registration form
- ✓ Order details
- ✓ Payment details

From Admin:

- ✓ Product details
- ✓ Service listings
- ✓ Stock updates

## 2.4 Output Information from the System

Order confirmation email/SMS

Payment receipts

Delivery tracking updates

Sales and inventory reports

## 2.5 Functional Requirements

For Customers:

Register/login to the system.

Browse products and services.

Place orders and make online payments.

For Admin:

Add/edit/remove products and services.

Manage orders and delivery.

Track inventory.

Manage customer accounts.

## **Non-Functional Requirements**

Performance: Fast loading and processing for smooth shopping experience.

Usability: Simple and responsive interface for all users.

Security: Secure payment gateway and data encryption.

Reliability: Stable system with minimal downtime.

Availability: Accessible 24/7.

Scalability: Can handle more customers, products, and services in future.

Compatibility: Works on mobile and desktop devices.

Maintainability: Easy to update and expand features.

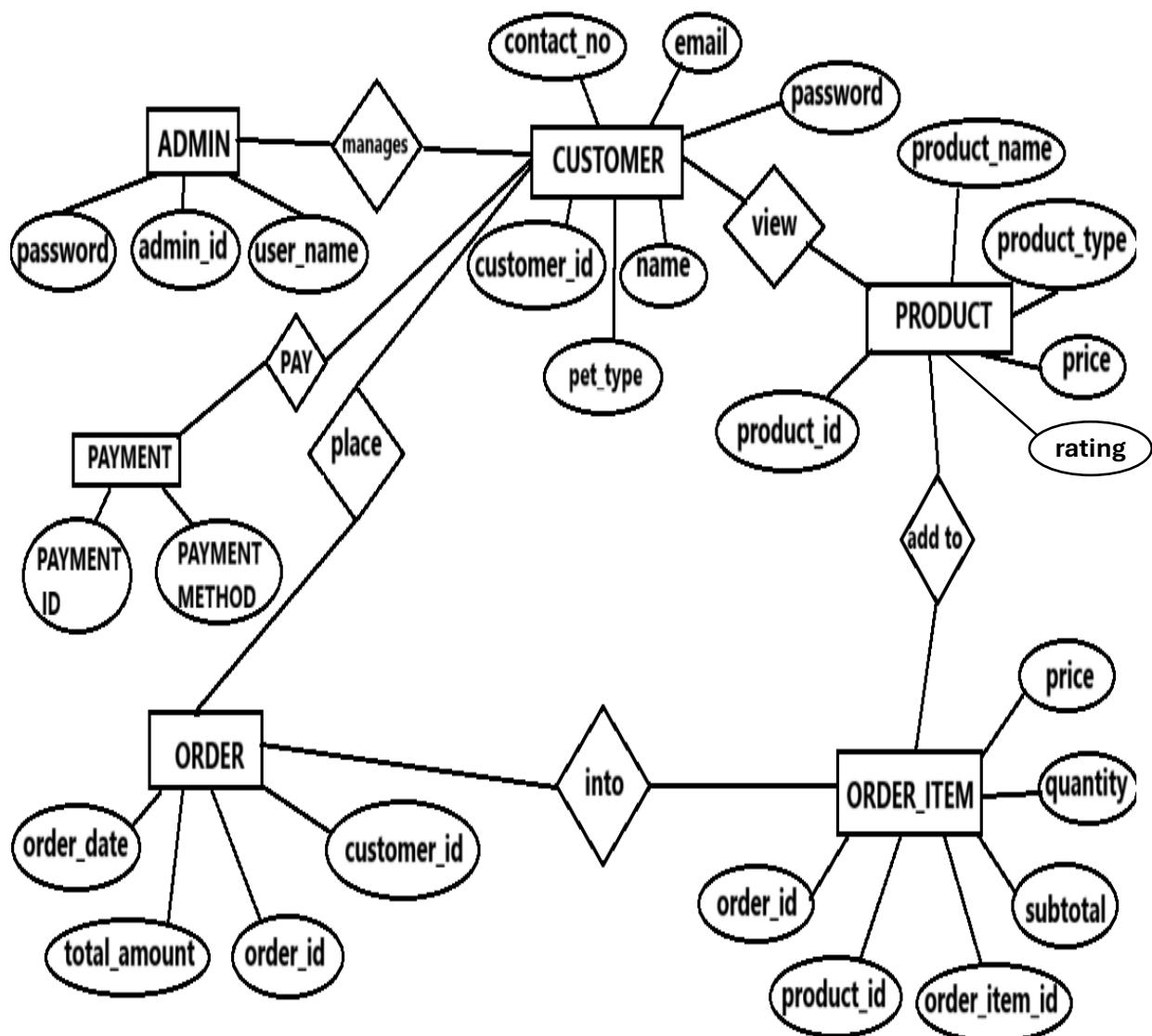
## ❖ DATABASE DESIGN

### 3.1 Identify entities and attributes

ENTITIES	ATTRIBUTES
ADMIN	admin_id User name password
CUSTOMER	Customer_id name Contact_no email Pet_type password
PRODUCT	Product_id Product_name Product_type Price ratings
ORDER ITEM	Order_item_id Order_id Product_id Price Quantity sub total
ORDER	Order_id Customer_id

	Order_date
	Total_amount
PAYMENT	Payment_id
	Payment_method

### 3.2 ER diagram



### 3.3 identify all tables , fields , relationship between tables

**Table 1- admin**

Field name	Data type	key	description
Admin_id	INT	PK	Unique id for each admin
User_name	VARCHAR(100)		Admin's name
password	VARCHAR(100)		Password for admin

**Table 2- customer**

Field name	Data type	key	Description
Customer_id	INT	PK	Unique id for each customer
Name	VARCHAR(100)		Customer's full name
Email	VARCHAR(100)		Customer's email
Pet_type	VARCHAR(50)		Breed name
password	VARCHAR(100)	UK	Unique password to each customer

**Table 3- product**

Field name	Data type	key	description
Product_id	INT	PK	Unique id for each product
Product_name	VARCHAR(100)		Product's name
Product_type	VARCHAR(100)		Product's type
price	FLOAT		Price of product

rating	FLOAT		Product quality based rating
--------	-------	--	------------------------------

**Table 4 – order\_item**

Field name	Data type	key	description
Order_item_id	INT	PK	Unique id for order item
Order_id	INT	FK	Links to order table
Product_id	INT	FK	Links to product table
Price	FLOAT		Price of product
Quantity	INT		Quantity of product
Sub total	FLOAT		Subtotal of price and quantity

**Table 5- order**

Field name	Data type	key	description
Order_id	INT	PK	Unique id for each order
Customer_id	INT	FK	Links to customer table
Order_date	DATE		Date of order
Total amount	FLOAT		Total amount of order

**Table 6 – payment**

Field name	Data type	key	description
------------	-----------	-----	-------------

Payment_id	INT	PK	Unique id for each payment
Payment_method	VARCHAR(50)		Types of available payment methods

### 3.4 Normalise database

**Table 1- admin**

Field name	key
Admin_id	Primary key
User_name	
password	

**Table 2 -customer**

Field name	key
Customer_id	Primary key
Name	
Email	
Pet_type	
password	Unique key

**Table 3 – product**

Field name	key
Product_id	Primary key

Product_name	
Product_type	
price	
rating	

**Table 4- order\_item**

Field name	key
Order_item_id	Primary key
Order_id	Foreign key
Product_id	Foreign key
Price	
Quantity	
Sub total	

**Table 5 – order**

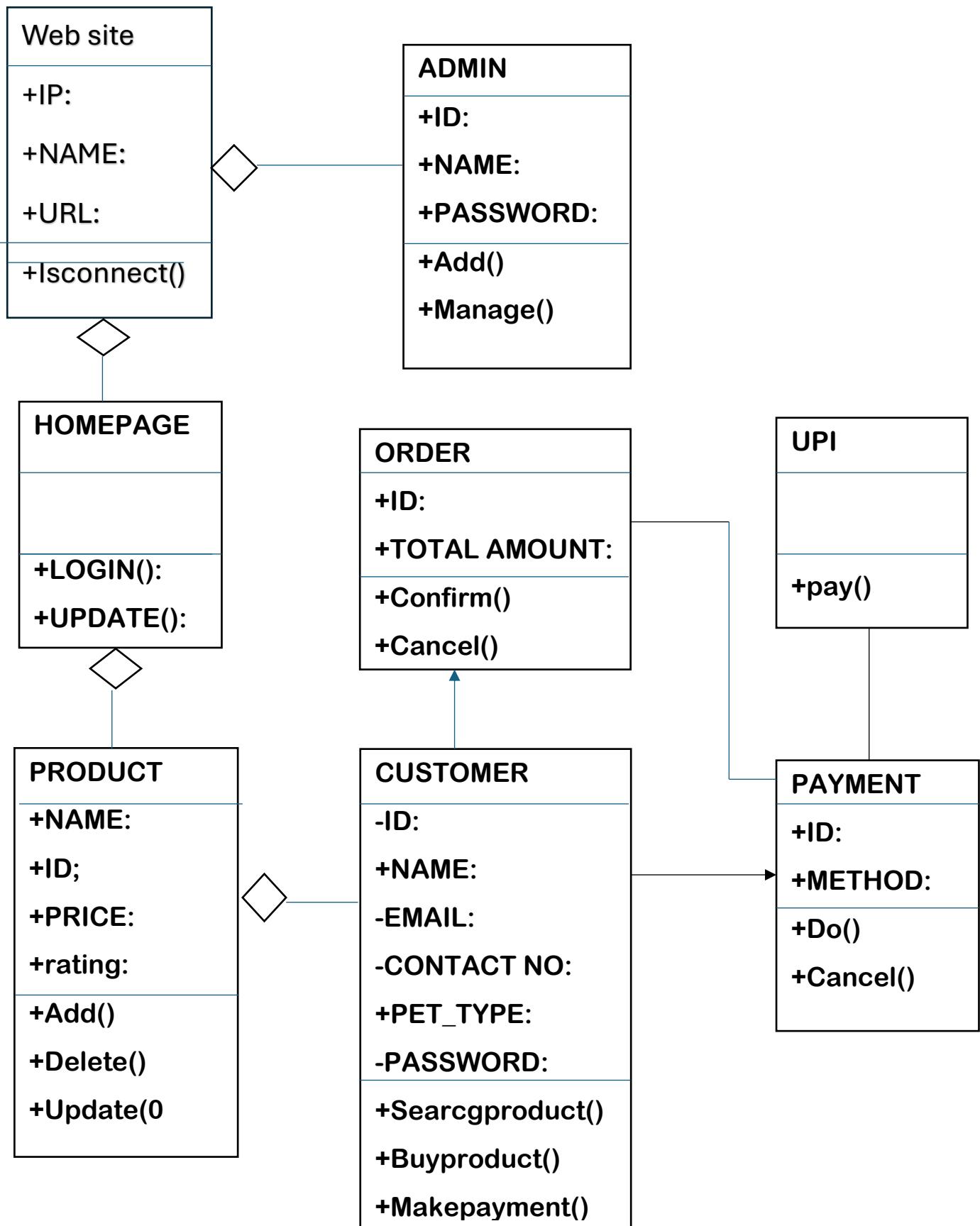
Field name	key
Order_id	Primary key
Customer_id	Foreign key
Order_date	
Total amount	

**Table 6 - payment**

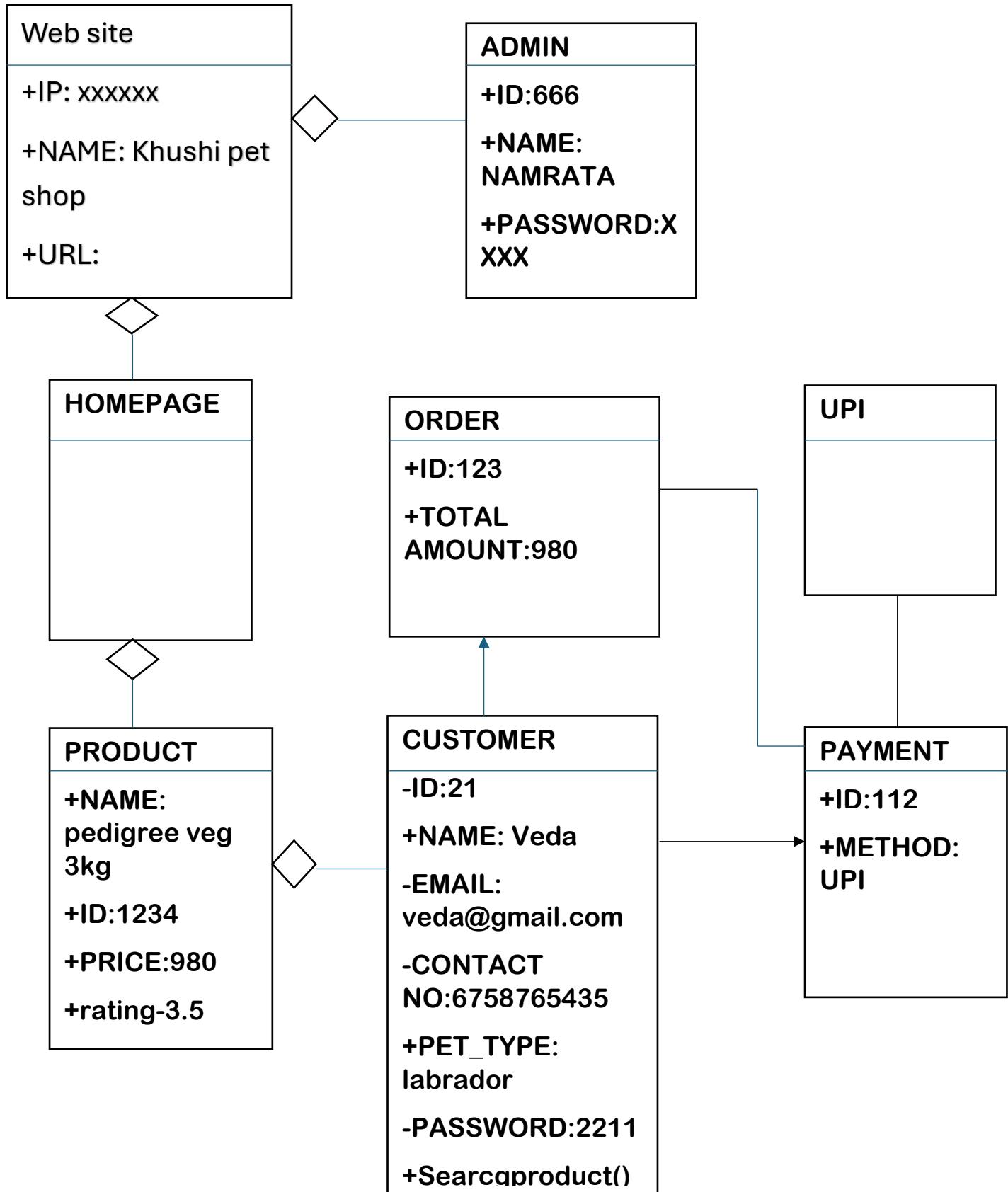
Field name	key
Payment_id	Primary key
Payment_method	

## ❖ SYSTEM DESIGN

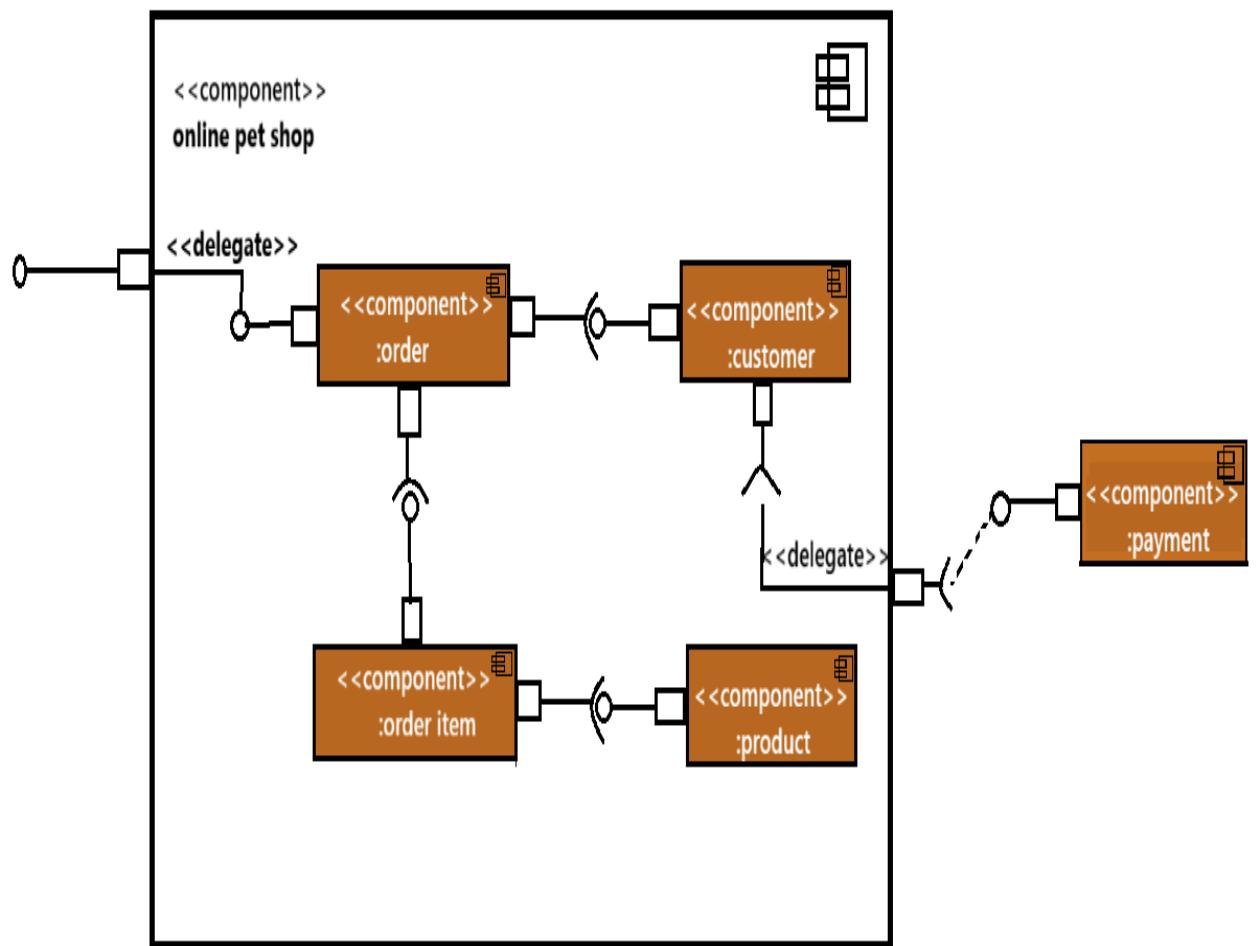
### 4.1 CLASS DIAGRAM



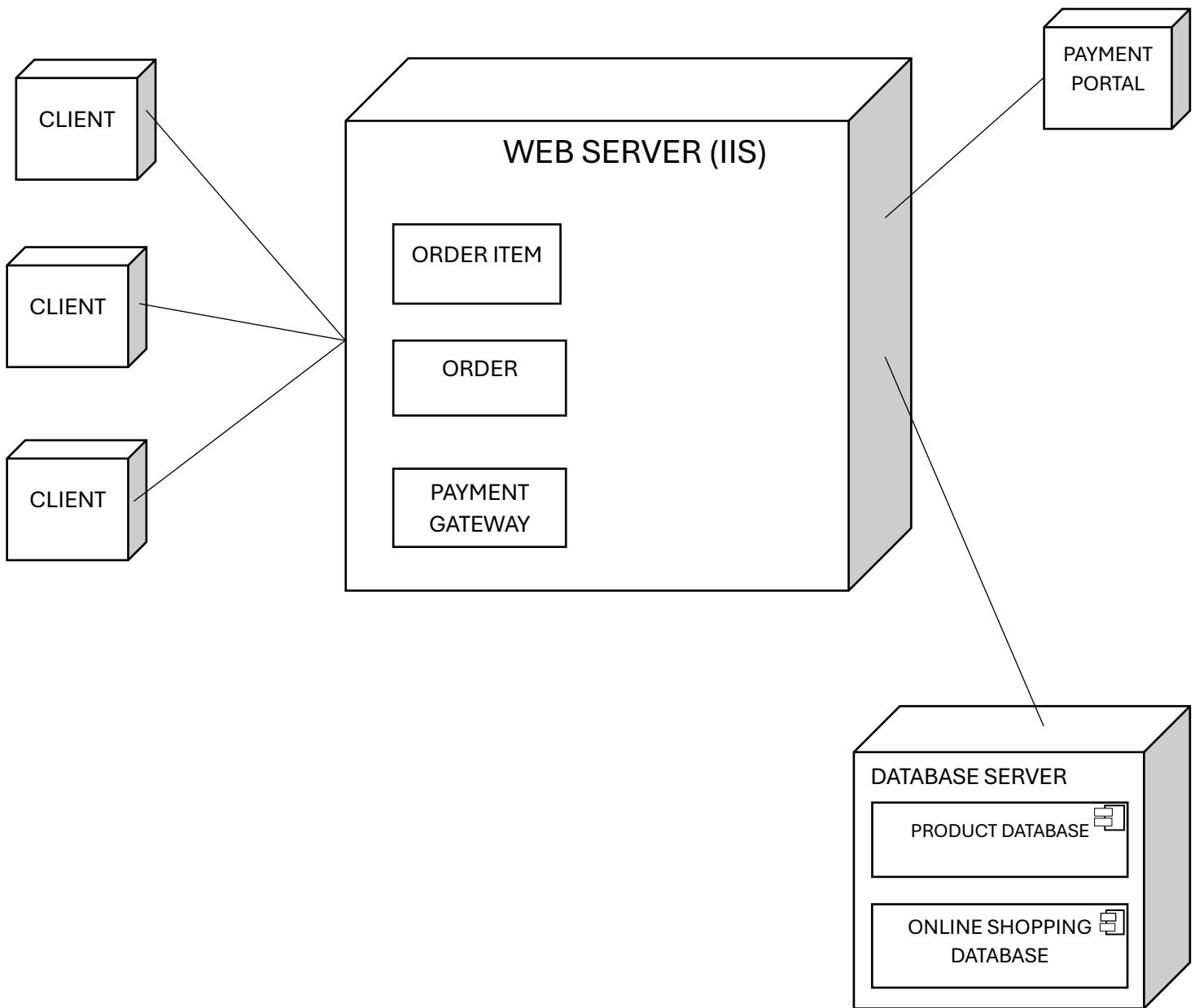
## 4.2 OBJECT DIAGRAM



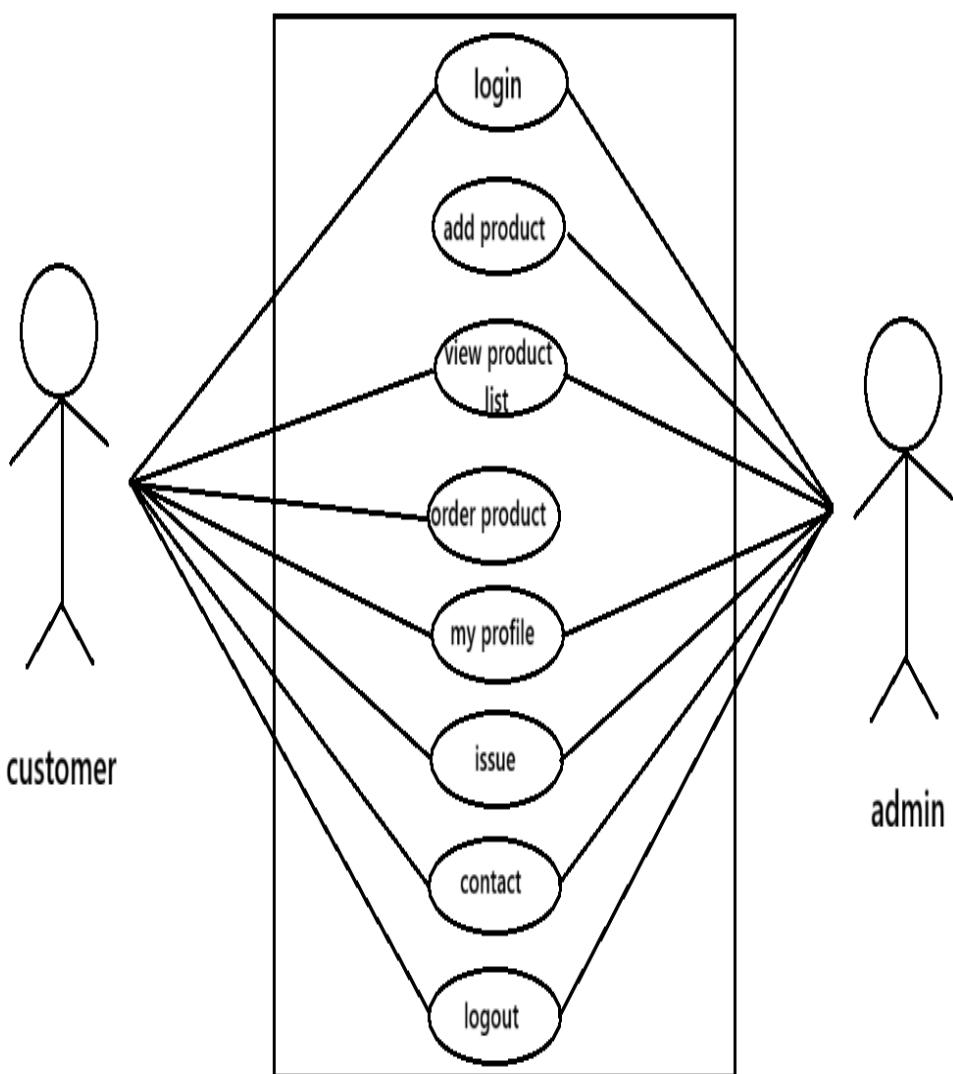
### 4.3 Component diagram



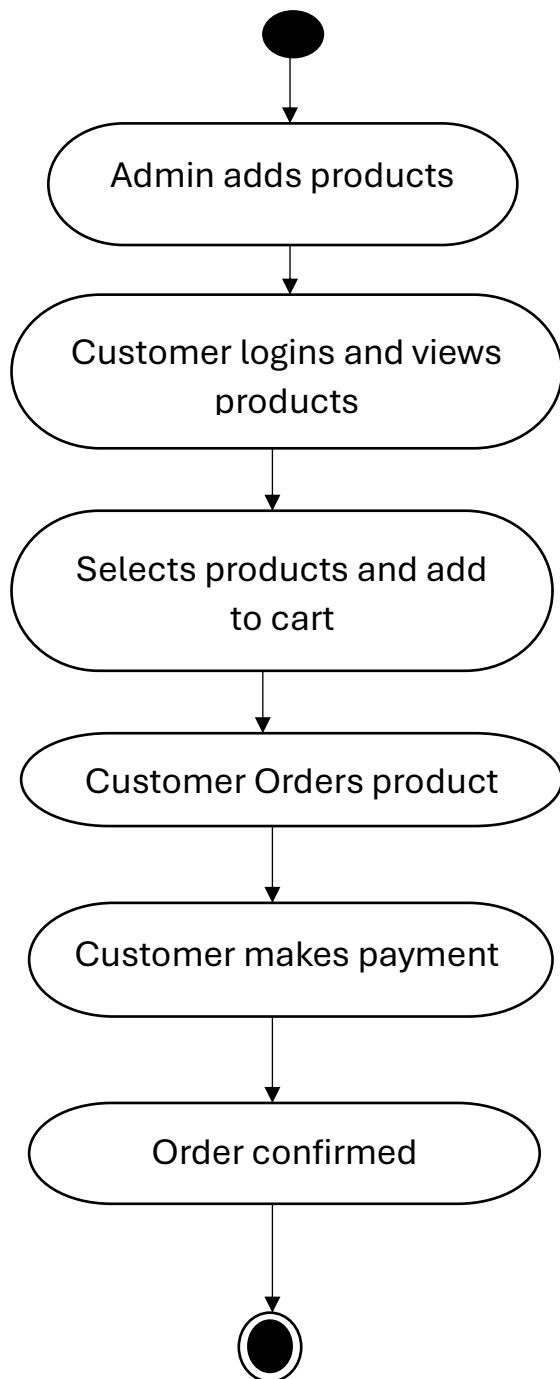
#### 4.4 deployment diagram



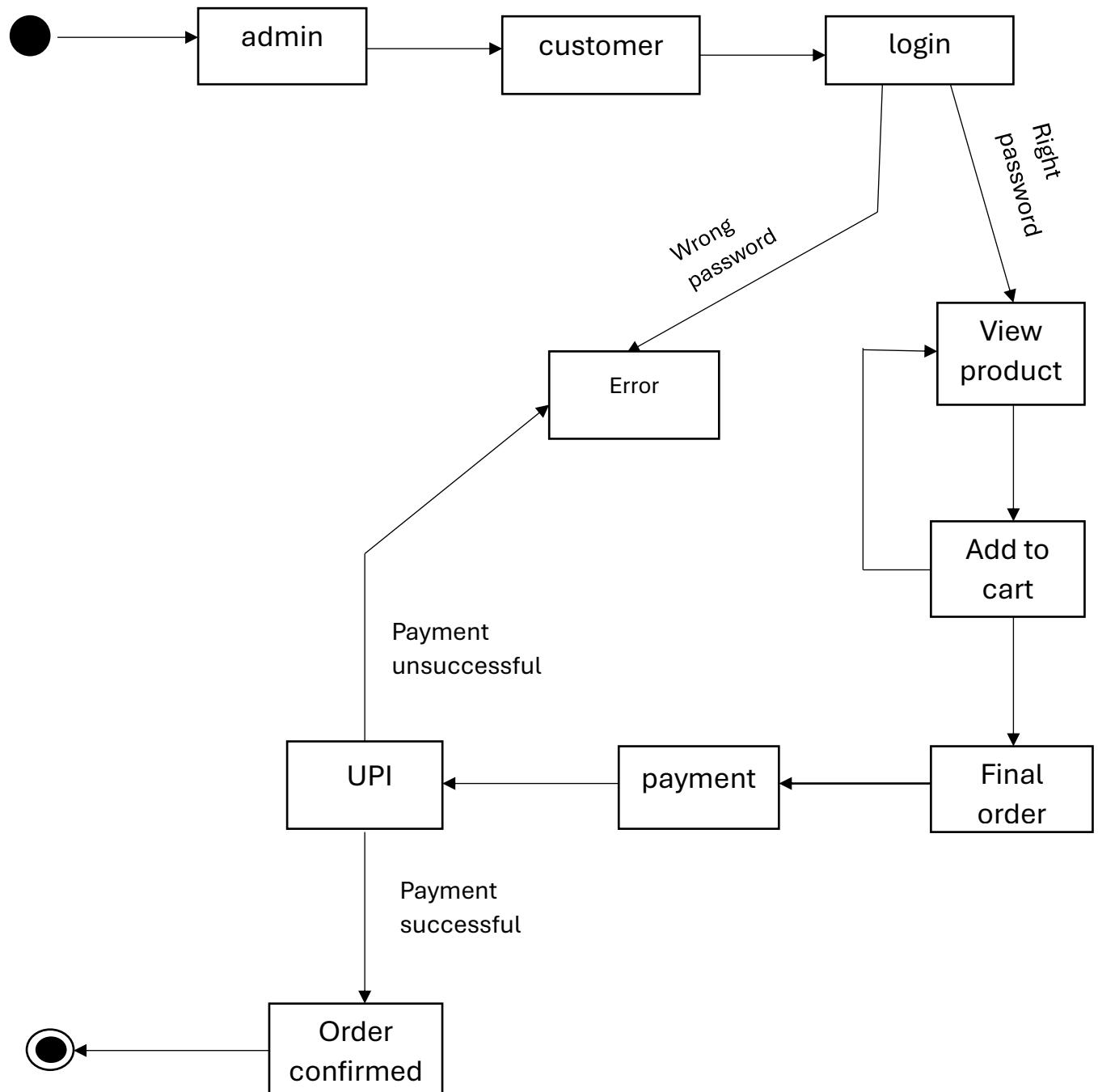
#### 4.5 Use case diagram



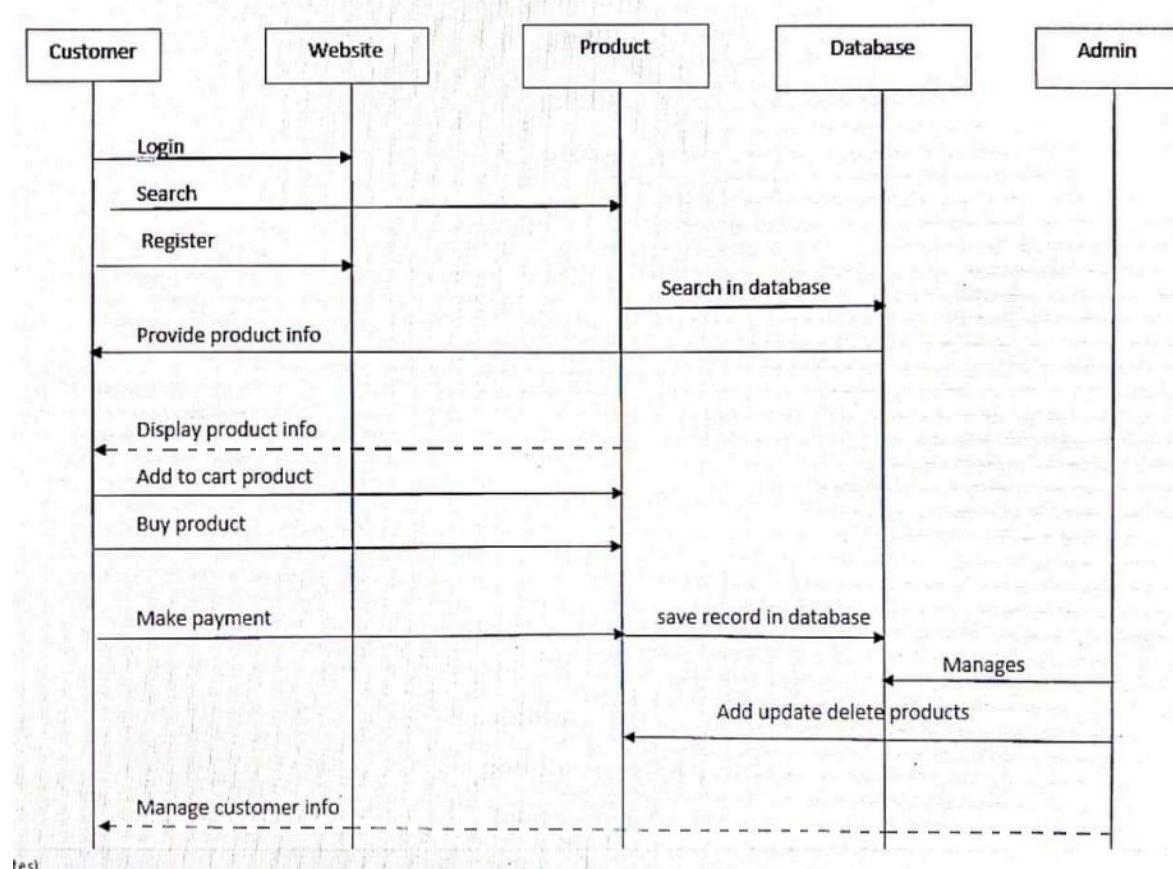
#### 4.6 Activity diagram



#### 4.7 State chart diagram



## 4.8 sequence diagram



## 4.9 Collaboration diagram

