# 1. PROJECT OVERVIEW

## 1.1 Purpose

The purpose of this system is to develop a **secure, scalable backend server** for the Week-8 E-Commerce frontend application.
 This backend provides authentication, product management, and order handling services using RESTful APIs.

## 1.2 Objectives

- Provide user authentication using JWT

- Manage product catalog (CRUD)

- Handle order placement and tracking

- Secure all sensitive routes

- Enable frontend–backend communication

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# 2. SYSTEM ARCHITECTURE

The backend follows **MVC Architecture**:

| Layer | Description |
|---|---|
| Routes | Handles HTTP endpoints |
| Controllers | Contains business logic |
| Middleware | Provides authentication & protection |
| Server | Initializes API services |

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# 3. SETUP INSTRUCTIONS

## 3.1 Software Requirements

- Node.js v18+

- NPM

- VS Code

- Postman

## 3.2 Installation Steps

```
git clone https://github.com/yourusername/week9-backend.git

cd backend

npm install
```

Create .env file:

```
PORT=5000

JWT_SECRET=securekey123
```

Start server:

```
npm start
```

Server URL:

```
http://localhost:5000
```

# 4. DIRECTORY STRUCTURE

backend/

|

├── server.js

├── package.json

├── .env

└── src/

    ├── routes/

    │   ├── productRoutes.js

    │   ├── authRoutes.js

    │   └── orderRoutes.js

    ├── controllers/

    │   ├── productController.js

    │   ├── authController.js

    │   └── orderController.js

    └── middleware/

        └── auth.js

# 5. API ENDPOINT SPECIFICATION

## 5.1 Authentication APIs

| Method | Endpoint | Description |
|--------|----------|-------------|
| POST | /api/auth/register | Register new user |
| POST | /api/auth/login | Authenticate user |

Request Example:

```
{
  "email": "user@mail.com",
  "password": "123456"
}
```

## 5.2 Product APIs

| Method | Endpoint | Description |
|--------|----------|-------------|
| GET | /api/products | Fetch all products |
| POST | /api/products | Create product |
| PUT | /api/products/:id | Update product |
| DELETE | /api/products/:id | Delete product |

### 5.3 Order APIs

| Method | Endpoint | Description |
| --- | --- | --- |
| GET | /api/orders | Fetch orders |
| POST | /api/orders | Place order |

Request Example:

```
{
  "items":[{"id":3,"qty":2}],
  "total":2999
}
```
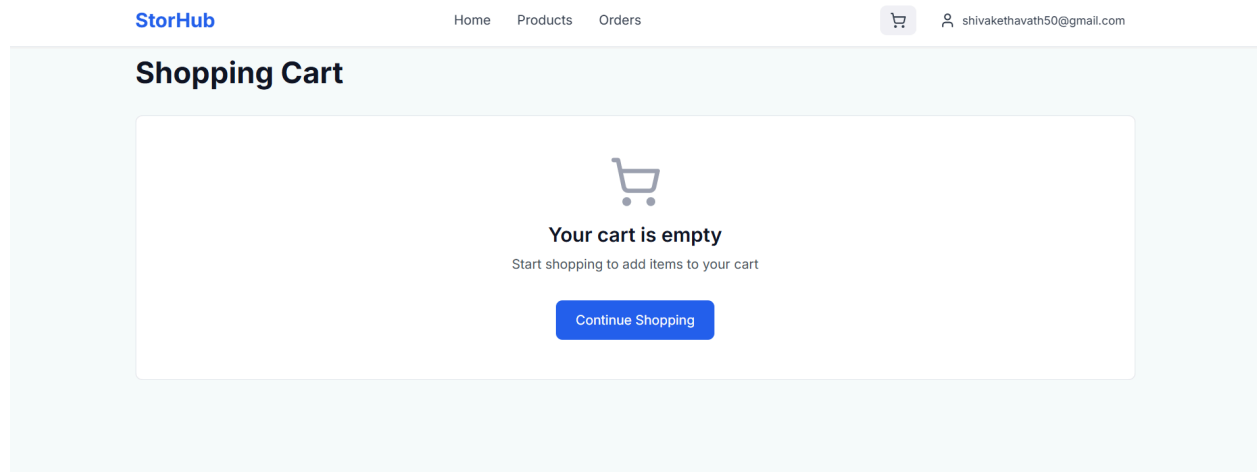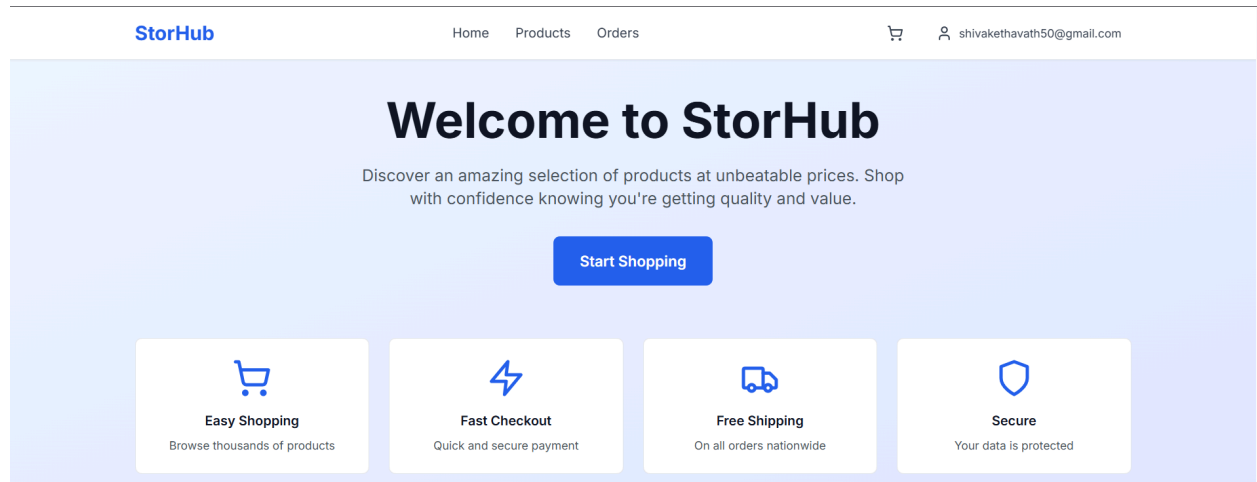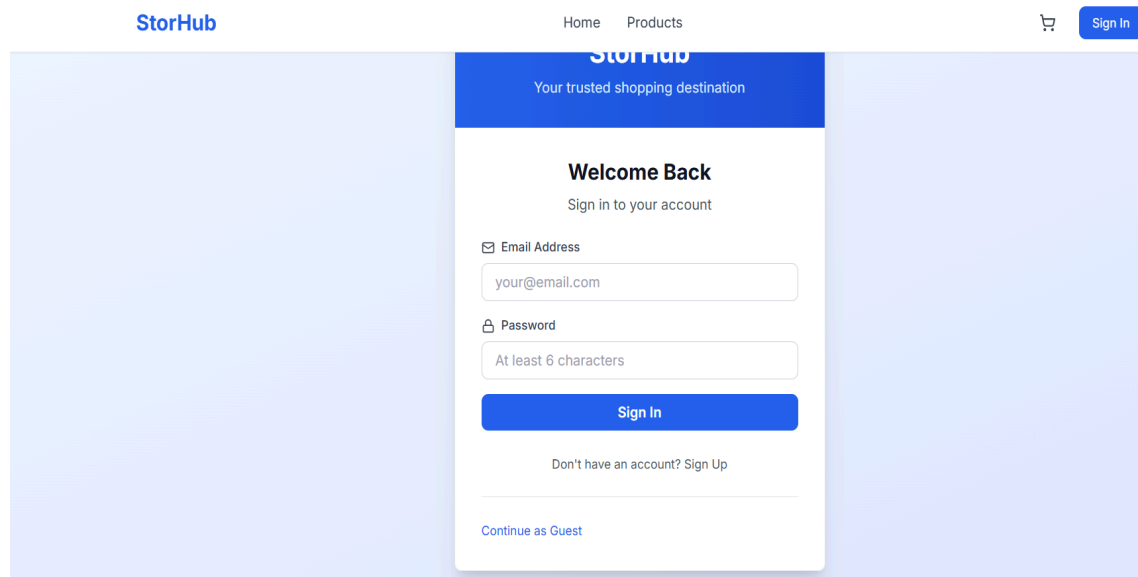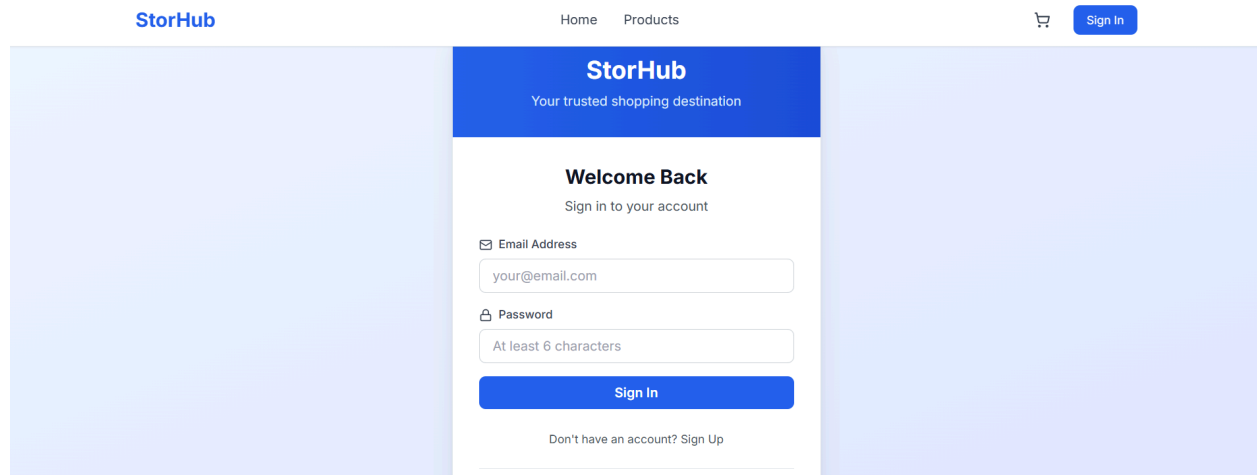
# 6. SECURITY IMPLEMENTATION

- JWT Token authentication
- Protected routes using middleware
- Secure password validation
- Unauthorized access blocking

# 7. FRONTEND INTEGRATION

The React E-Commerce frontend connects to this backend to:

- Authenticate users

- Load products

- Place orders

- Track purchases

**StorHub**

Your trusted shopping destination

## Welcome Back

Sign in to your account

✉ Email Address

your@email.com

🔒 Password

At least 6 characters

**Sign In**

Don't have an account? Sign Up

StorHub                    Home    Products                    🛒    Sign In

# Welcome to StorHub

Discover an amazing selection of products at unbeatable prices. Shop with confidence knowing you're getting quality and value.

**Start Shopping**

🛒

**Easy Shopping**

Browse thousands of products

⚡

**Fast Checkout**

Quick and secure payment

🚚

**Free Shipping**

On all orders nationwide

🛡

**Secure**

Your data is protected

← Back to products

clothing

# Athletic Running Shoes

★★★★★  4.6 (421 reviews)

Lightweight mesh running shoes with cushioned sole

Stock Available: 42

## $89.99

Quantity:  [−]  1  [+]

🛒 Add to Cart

# Our Products

🔍 Search products...

▽ Category
All Categories

Sort By
Name (A-Z)

| clothing | books | clothing | clothing |
|---|---|---|---|

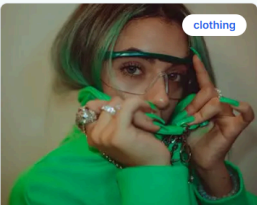**Athletic Running Shoes**

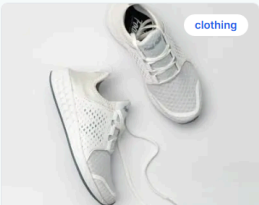Lightweight mesh running shoes with cushioned sole
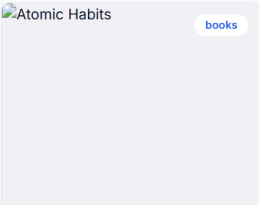
**Atomic Habits**

Build good habits and break bad ones with proven strategies

**Blue Denim Jeans**

Classic fit denim jeans made from premium cotton blend

**Casual Sneakers**

Versatile white sneakers suitable for any casual outfit

### Athletic Running Shoes

Lightweight mesh running shoes with cushioned sole

**$89.99**

−  3  +

**$269.97**

Clear Cart

## Order Summary

| | |
|---|---|
| Subtotal | $269.97 |
| Shipping | Free |
| Tax | $21.60 |

| | |
|---|---|
| **Total** | **$291.57** |

**Proceed to Checkout**

Continue Shopping

← Back to cart

# Checkout

1 Shipping    2 Payment    3 Review

### Shipping Information

Email

Full Name

📍 Address

City                                    State

👤 Shipping Information

Email

shivakethavath100@gmail.com

Full Name

KETHAVATH

📍 Address

lulu mal

City

hyderabad

State

Telangana

ZIP Code

509201

**Continue to Payment**

City

State

ZIP Code

**Continue to Payment**

### Order Summary

| | |
|---|---|
| Athletic Running Shoes × 3 | $269.97 |
| Subtotal | $269.97 |
| Tax (8%) | $21.60 |
| Shipping | Free |
| **Total** | **$291.57** |

**StorHub**                    Home    Products                    🛒 ³    Sign In

← Back to cart

# Checkout

✓ Shipping    ✓ Payment    ③ Review

### Order Review

Email
shivakethavath100@gmail.com

Full Name
KETHAVATH

Shipping Address
lulu mal, hyderabad, Telangana 509201

[ Back ]    [ Place Order ]

✓
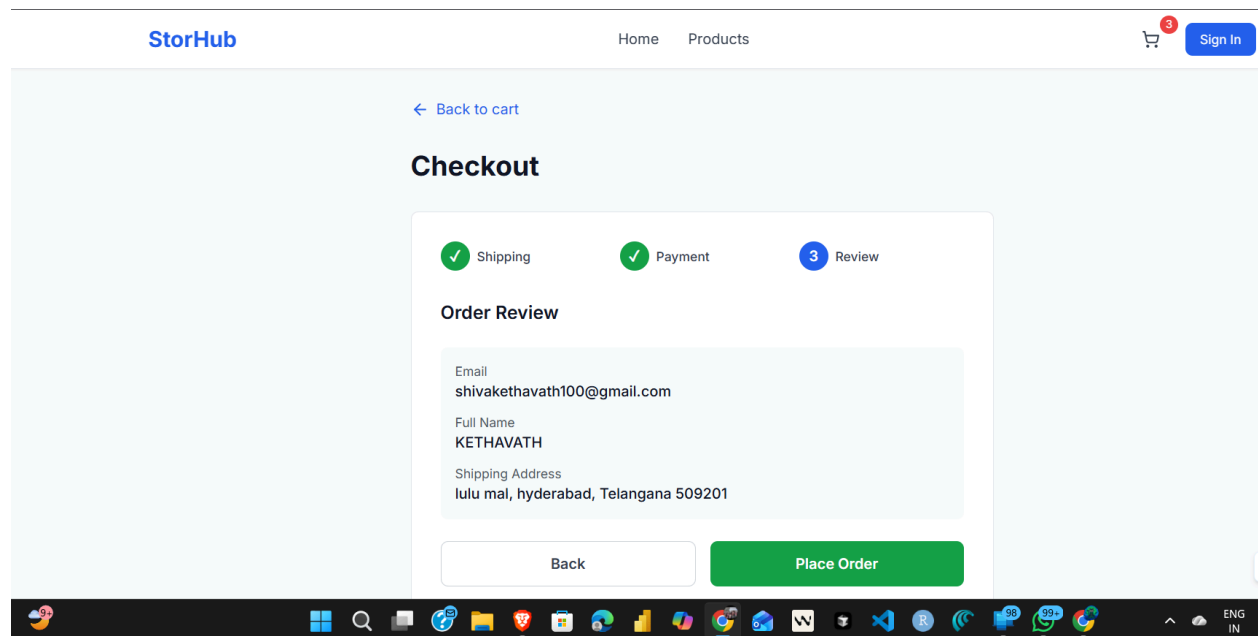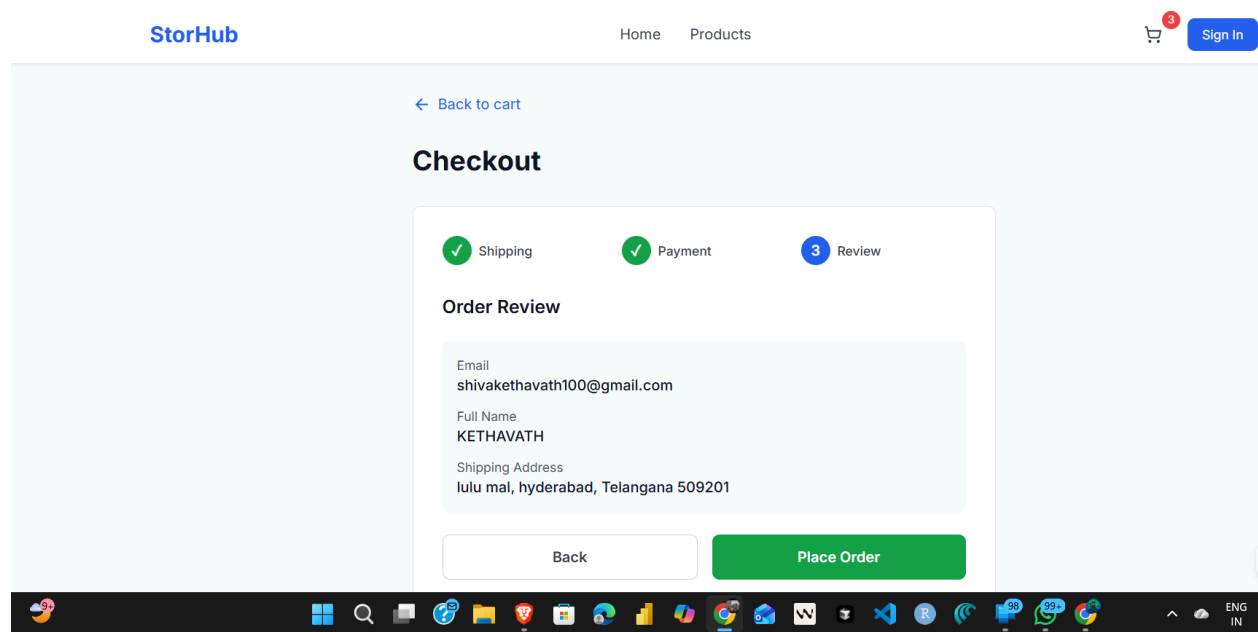
# Order Confirmed!

Thank you for your purchase. Your order has been received.

📦 **Order Details**

Order Number
703a61d0-4217-40c8-878f-5347577ede17

Order Date
January 1, 2026 at 11:43 PM

Order Status
Completed

✉ **Contact Information**

Email
shivakethavath50@gmail.com

📍 **Shipping Address**

| | |
|---|---|
| Subtotal | $269.97 |
| Tax | $21.60 |
| **Total** | **$291.57** |

A confirmation email has been sent to **shivakethavath50@gmail.com**. You can track your order status anytime by logging into your account.

| Continue Shopping | Back to Home |
|---|---|