1. Introduction

1.1 Project Title

Title: E-commerce Application on IBM Cloud Foundry

1.2 Project Overview

Project Overview: The project aims to create an e-commerce platform that allows artisans to showcase and sell their handmade and artisanal products online. This platform provides a marketplace for artisans and a convenient shopping experience for customers.

2. Project Objectives

Objectives:

Create a user-friendly e-commerce website.

Enable artisans to register, list their products, and manage their online shops.

Implement secure user authentication and payment processing.

Offer a seamless shopping experience for customers.

3. Design Thinking Process

3.1 Problem Statement

Problem Statement: Artisans often struggle to reach a wider audience and sell their products. Customers who appreciate artisanal items may find it challenging to discover and purchase them. This project addresses these challenges.

3.2 User Research

User Research: We conducted surveys and interviews with artisans and potential customers to understand their needs and pain points.

Artisans expressed the need for an online platform to showcase and sell their products.

Customers desired a user-friendly website with easy product discovery and secure transactions.

3.3 Ideation

Ideation: We brainstormed potential solutions, including creating a website that connects artisans and customers.

3.4 Prototyping

Prototyping: We created wireframes and received feedback from users, resulting in design improvements.

3.5 User-Centered Design

User-Centered Design: Our design decisions were influenced by user feedback, resulting in an intuitive and visually appealing website.

4. Technology Stack

Technology Stack:

Web Framework: Flask was chosen as the web framework for its simplicity and flexibility.

Database: We used SQLite for database storage due to its lightweight nature and compatibility with Flask.

5. System Architecture

System Architecture: The application follows a standard client-server architecture. The Flask web server serves as the backend, while the front end is built using HTML, CSS, and JavaScript.

6. Features and Functionality

Product Listings:

Artisans can register and list their products.

Customers can browse and search for artisanal products.

Product pages display details, pricing, and artisan information.

User Authentication:

Users can register and log in securely.

Authentication is handled with user sessions.

Shopping Cart:

Customers can add products to their cart.

The cart allows for easy management of selected items.

Order Processing:

Artisans receive order notifications and can process and fulfill orders.

Customers receive order confirmations and can track their orders.

7. Code Structure

Project Structure:

The project follows a structured directory layout with separate folders for templates, static files, and routes.

Python scripts manage the backend logic, and Jinja2 templates are used for rendering views.

Views and Routes:

Routes include registration, login, product listing, shopping cart, and order processing.

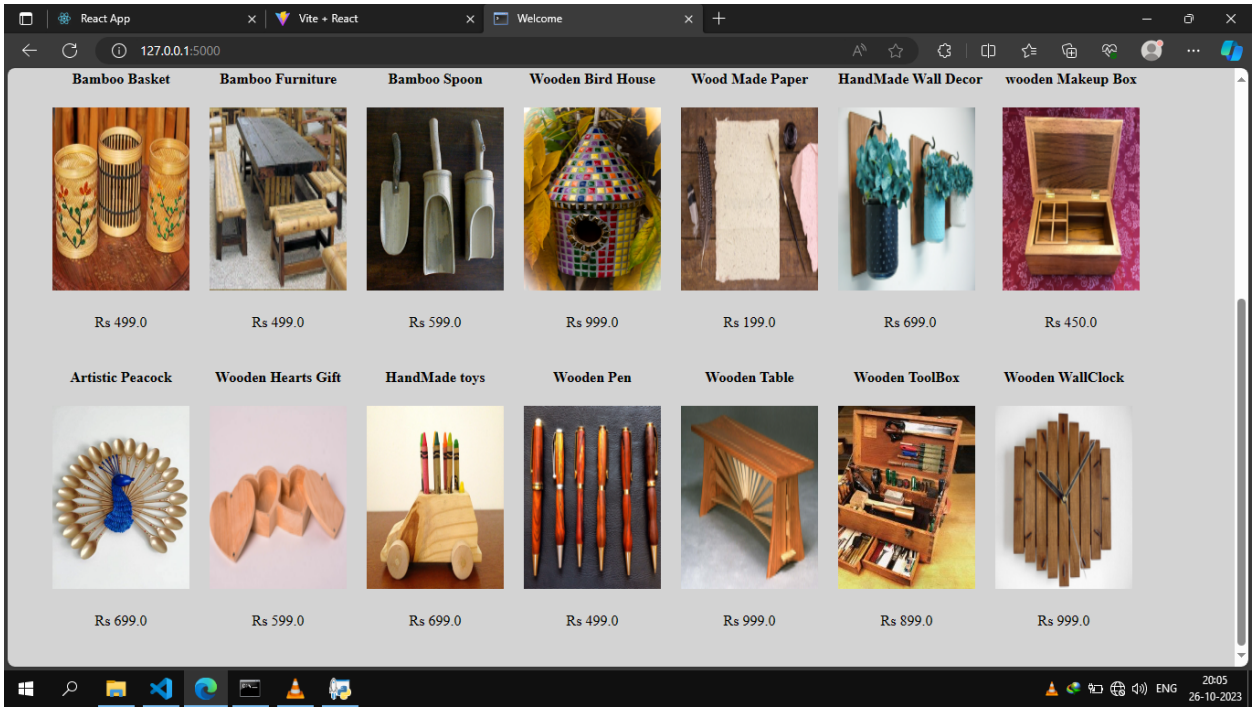
Templates are used for rendering HTML views.

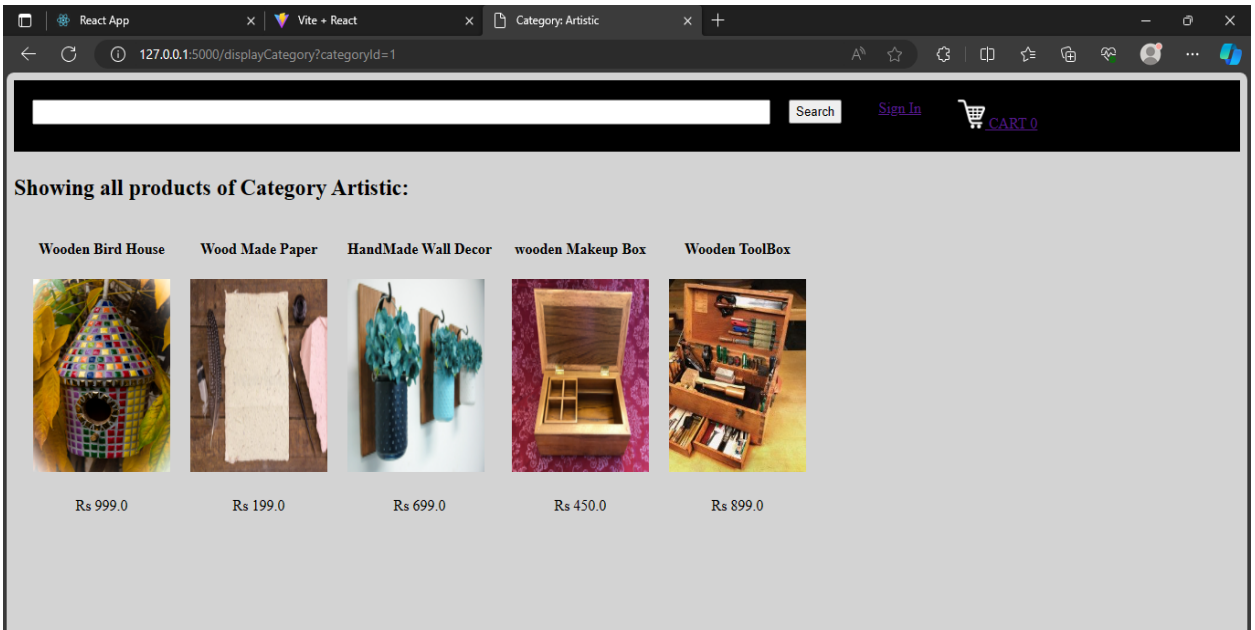
Database Models:

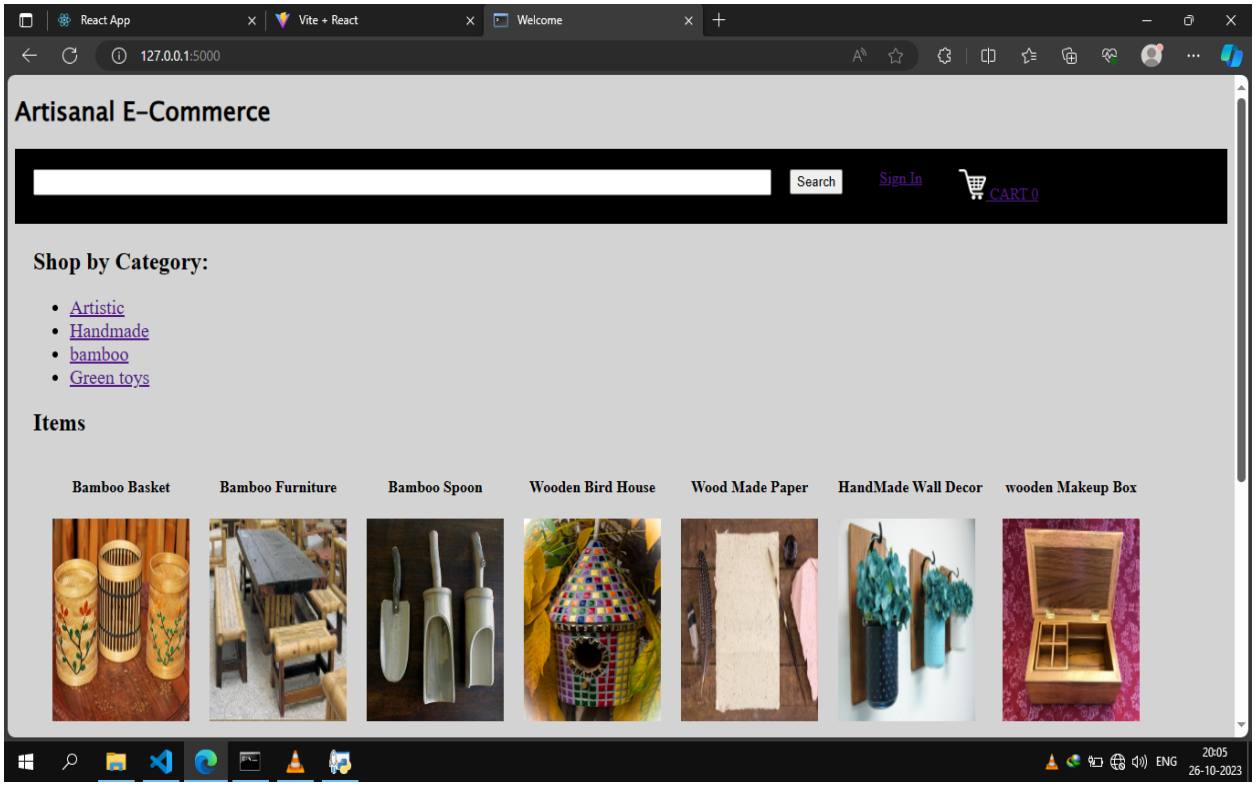
The database schema includes tables for users, products, carts, and orders.

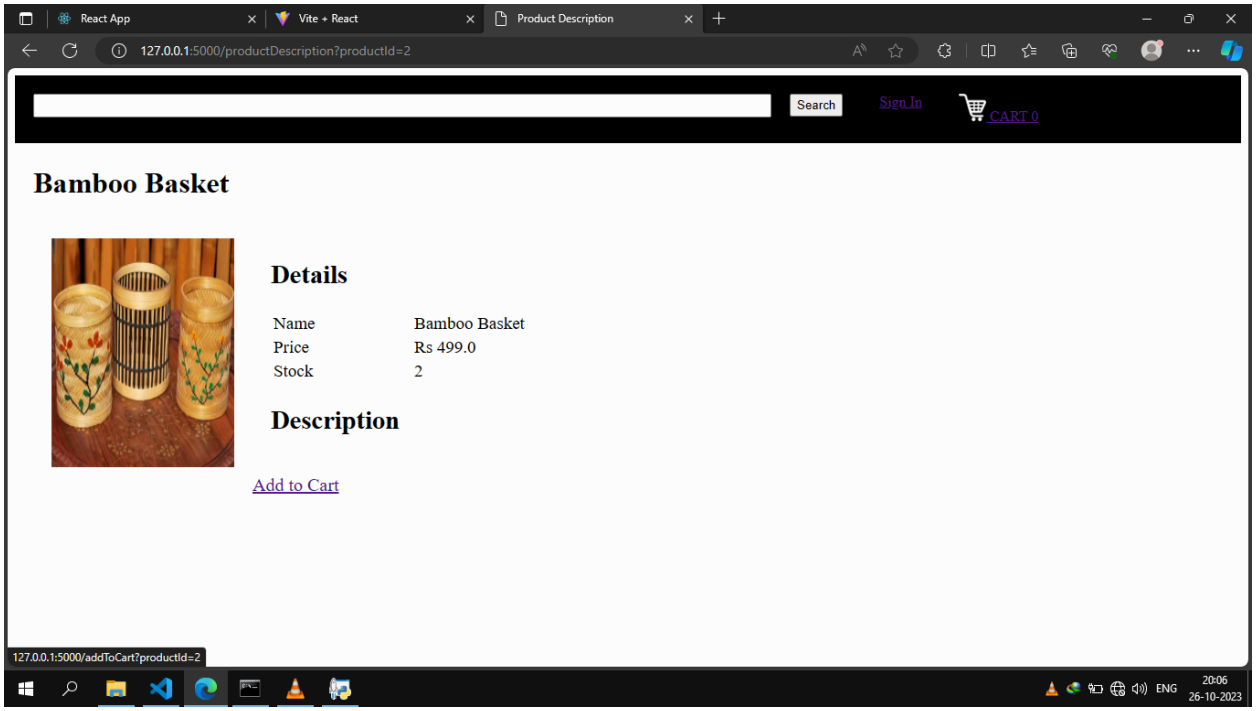
Templates:HTML templates are used for rendering pages, with CSS for styling.

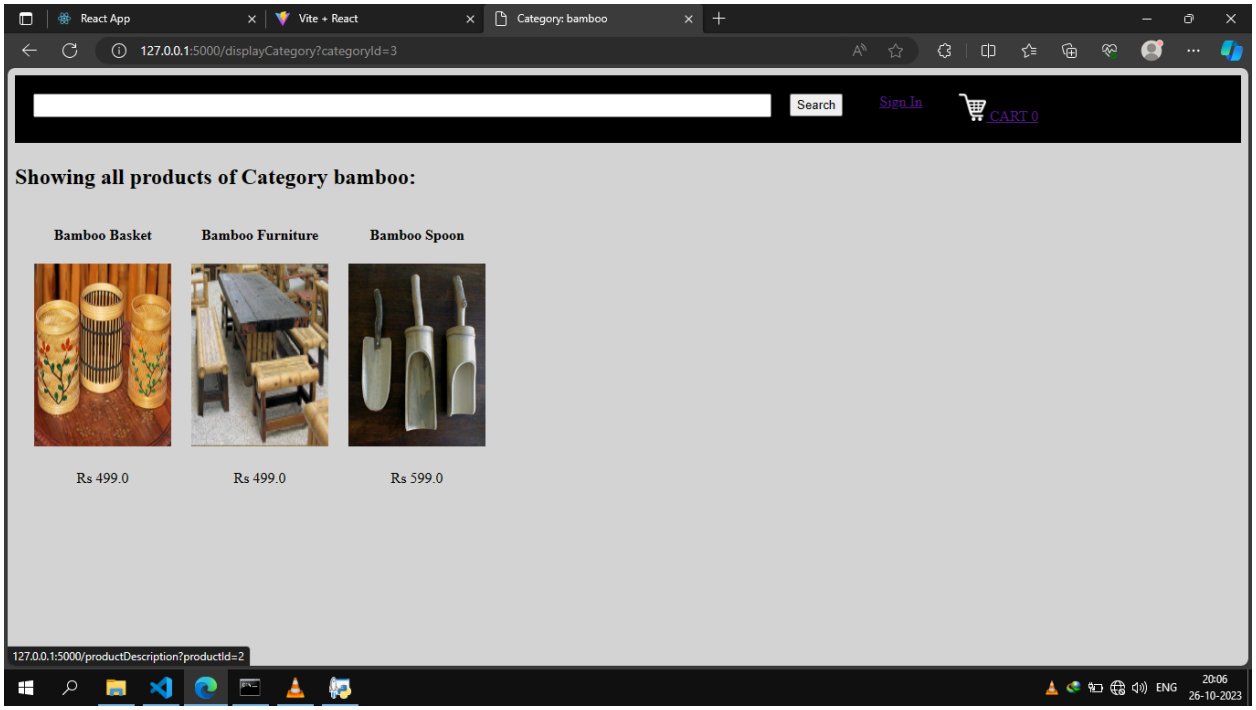
Static Files:CSS, JavaScript, and image files are stored in the "static" directory.

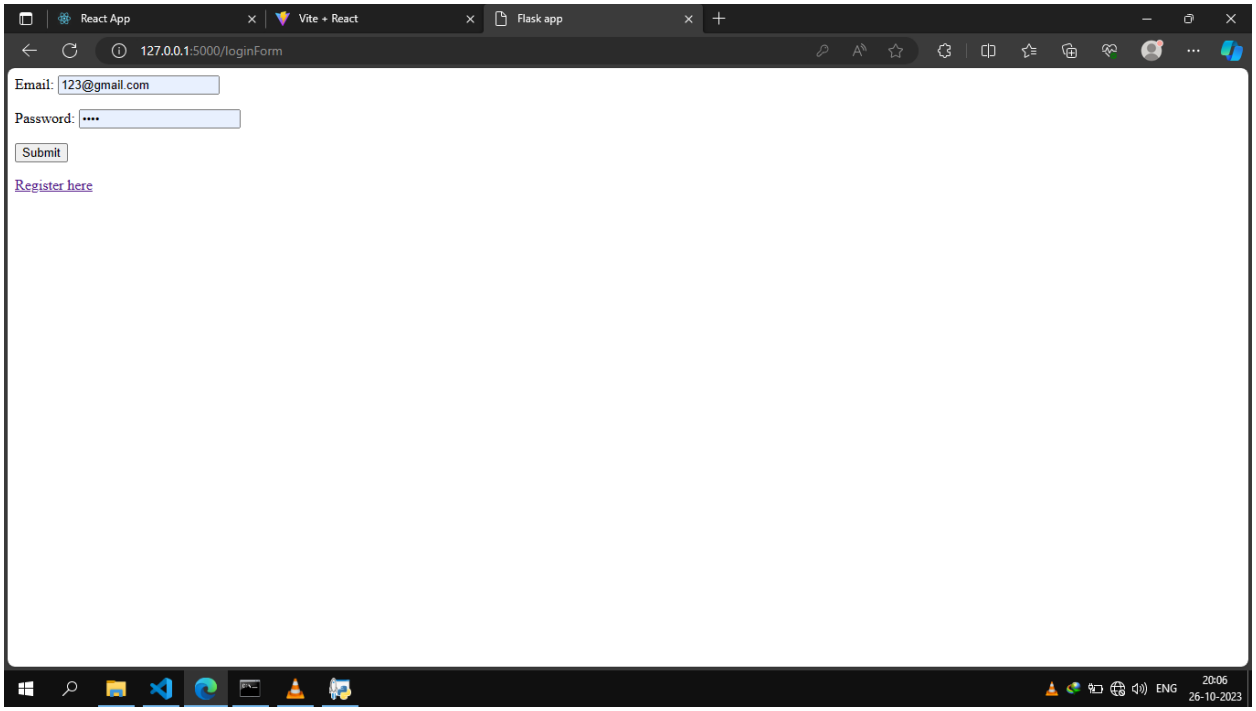


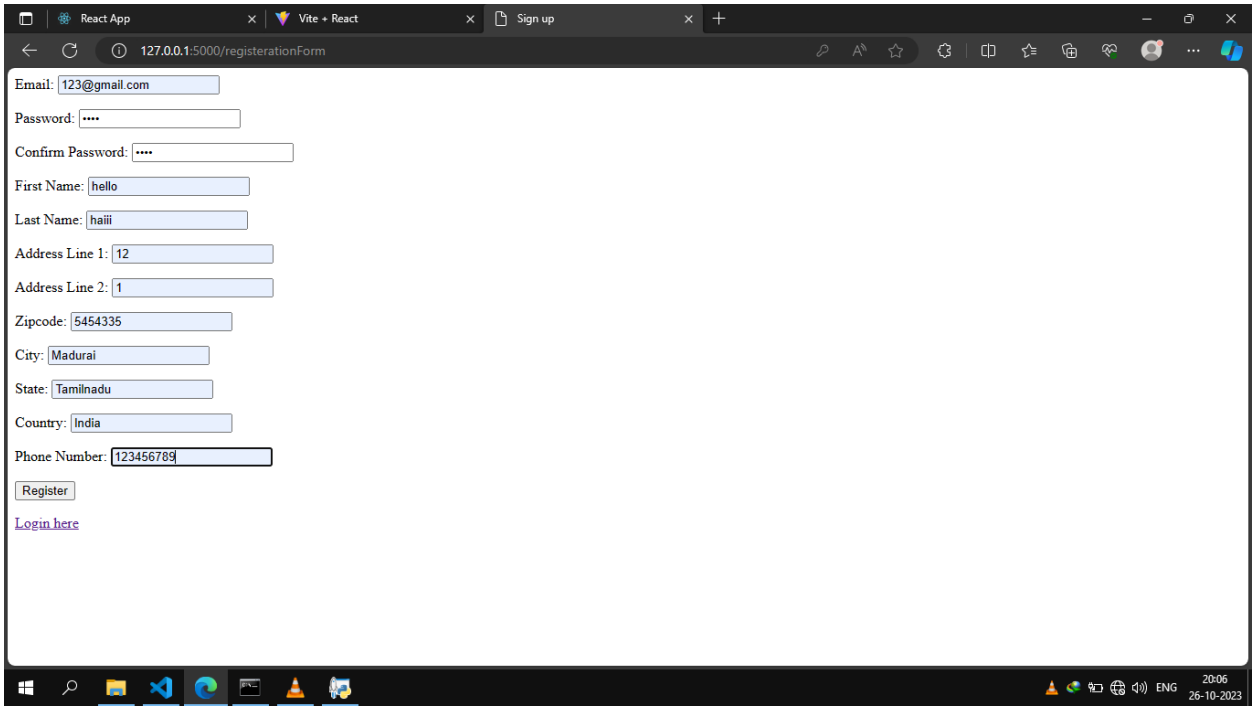


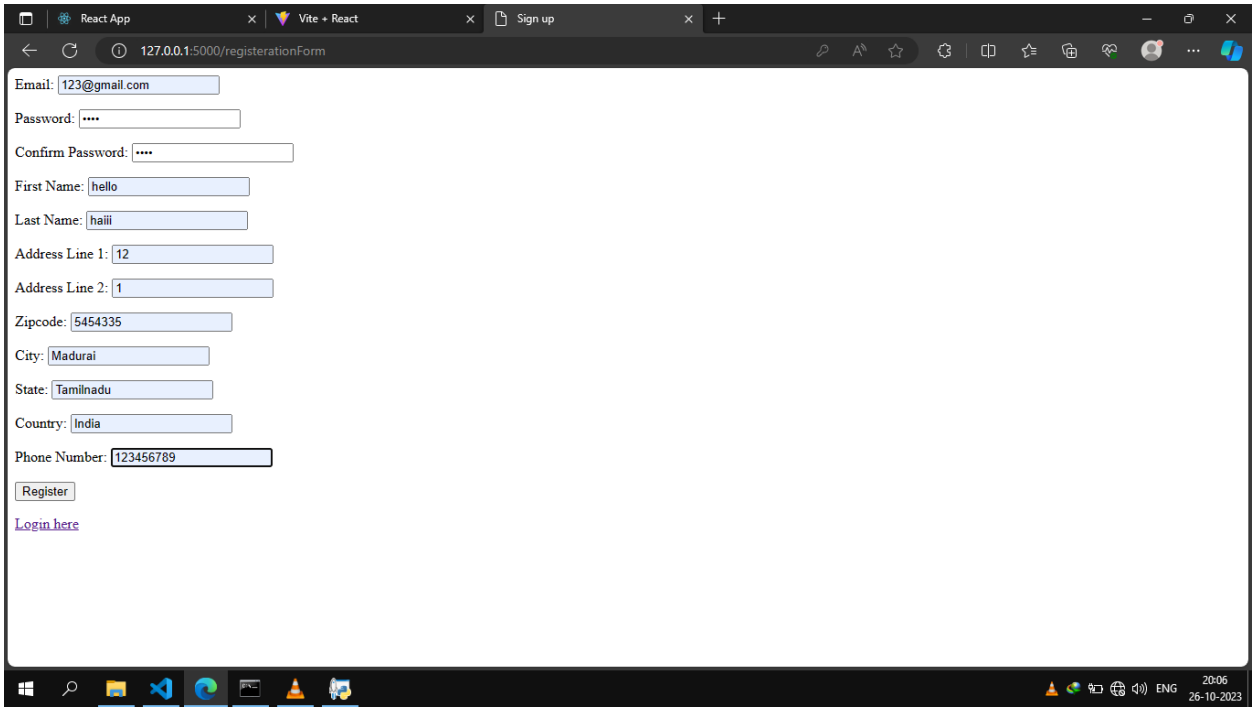

React App
Vite + React
Welcome
127.0.0.1:5000
Artisanal E-Commerce
Search
Sign In
CART 0
Shop by Category:
Artistic
Handmade
bamboo
Green toys
Items
Bamboo Basket
Bamboo Furniture
Bamboo Spoon
Wooden Bird House
Wood Made Paper
HandMade Wall Decor
wooden Makeup Box
ENG
20:05
26-10-2023


React App
Vite + React
Product Description
127.0.0.1:5000/productDescription?productId=2
Search
Sign In
CART 0
Bamboo Basket
Details
Name Bamboo Basket
Price Rs 499.0
Stock 2
Description
Add to Cart
127.0.0.1:5000/addToCart?productId=2
ENG
20:06
26-10-2023


React App
Vite + React
Category: bamboo
127.0.0.1:5000/displayCategory?categoryId=3
Search
Sign In
CART 0
Showing all products of Category bamboo:
Bamboo Basket
Bamboo Furniture
Bamboo Spoon
Rs 499.0
Rs 499.0
Rs 599.0
127.0.0.1:5000/productDescription?productId=2
ENG
20:06
26-10-2023


React App
Vite + React
Flask app
127.0.0.1:5000/loginForm
Email: 123@gmail.com
Password: ••••
Submit
Register here
ENG
20:06
26-10-2023


React App
Vite + React
Sign up
127.0.0.1:5000/registerationForm
Email: 123@gmail.com
Password: ••••
Confirm Password: ••••
First Name: hello
Last Name: haiii
Address Line 1: 12
Address Line 2: 1
Zipcode: 5454335
City: Madurai
State: Tamilnadu
Country: India
Phone Number: 123456789
Register
Login here
ENG
20:06
26-10-2023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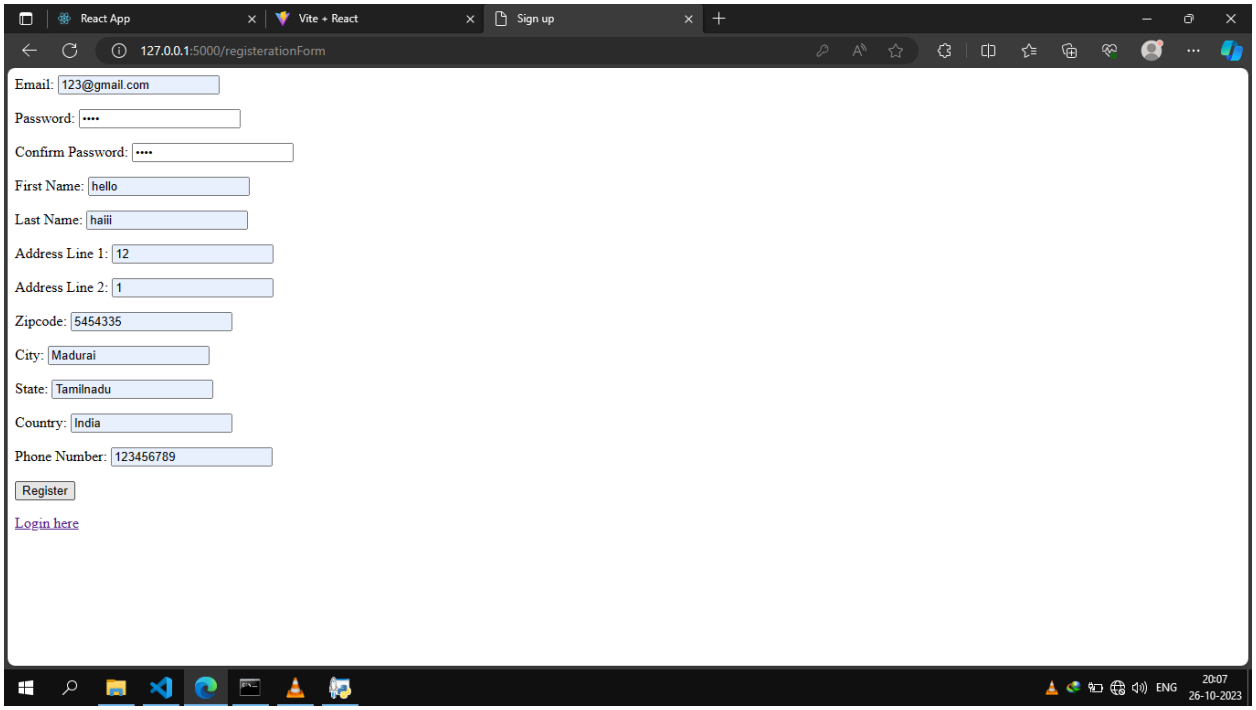
Address Line 2: 1
Zipcode: 5454335
City: Madurai
State: Tamilnadu
Country: India
Phone Number: 123456789
Register
Login here
ENG
20:06
26-10-2023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Phone Number: 123456789
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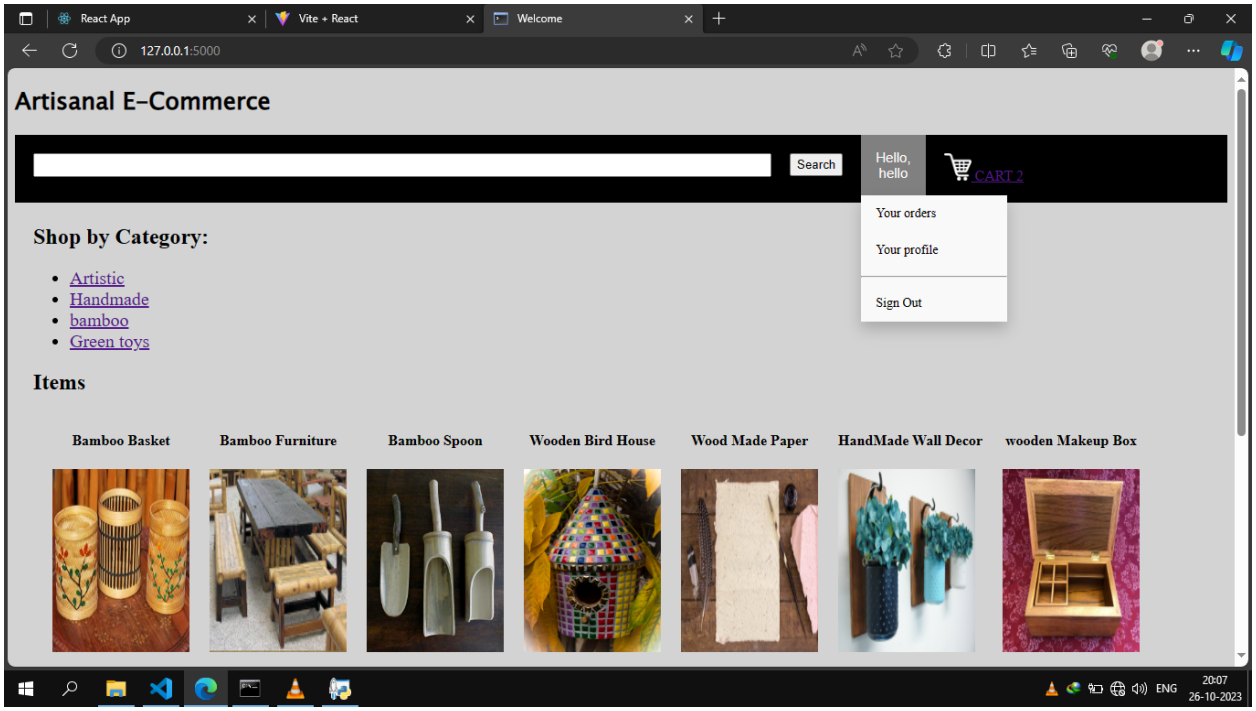
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Hello, hello
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Your orders
Your profile
Sign Out
Shop by Category:
Artistic
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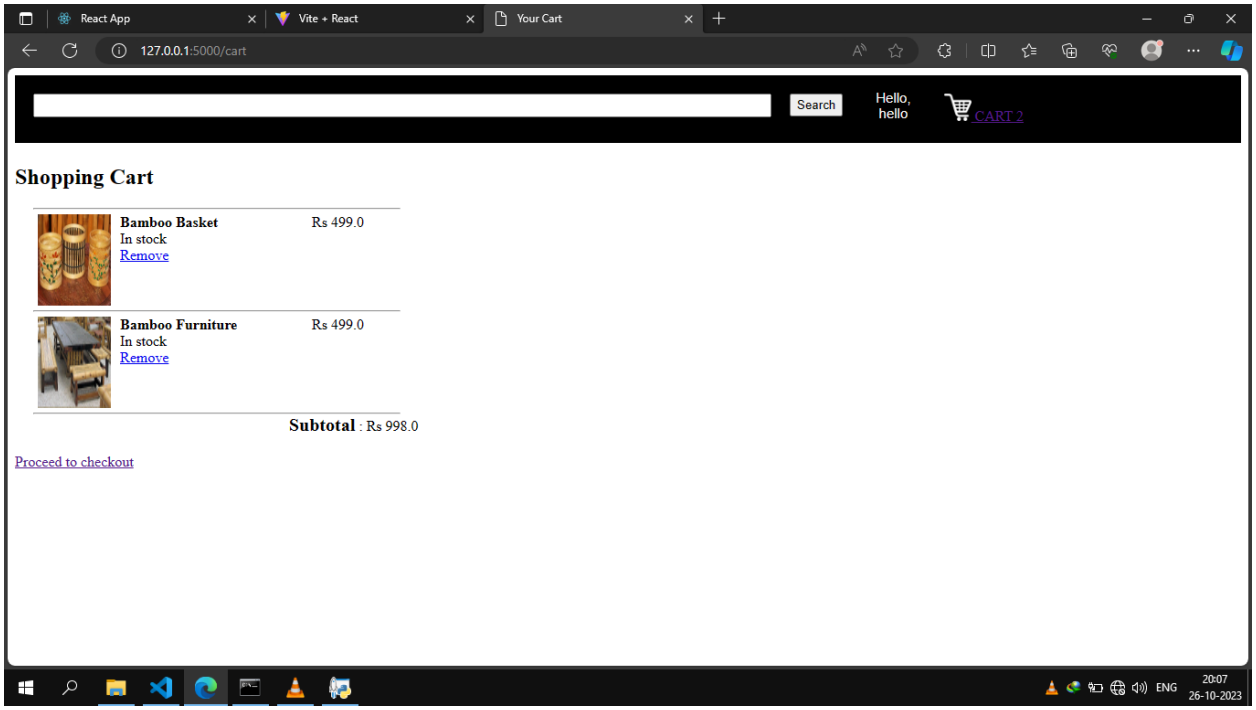
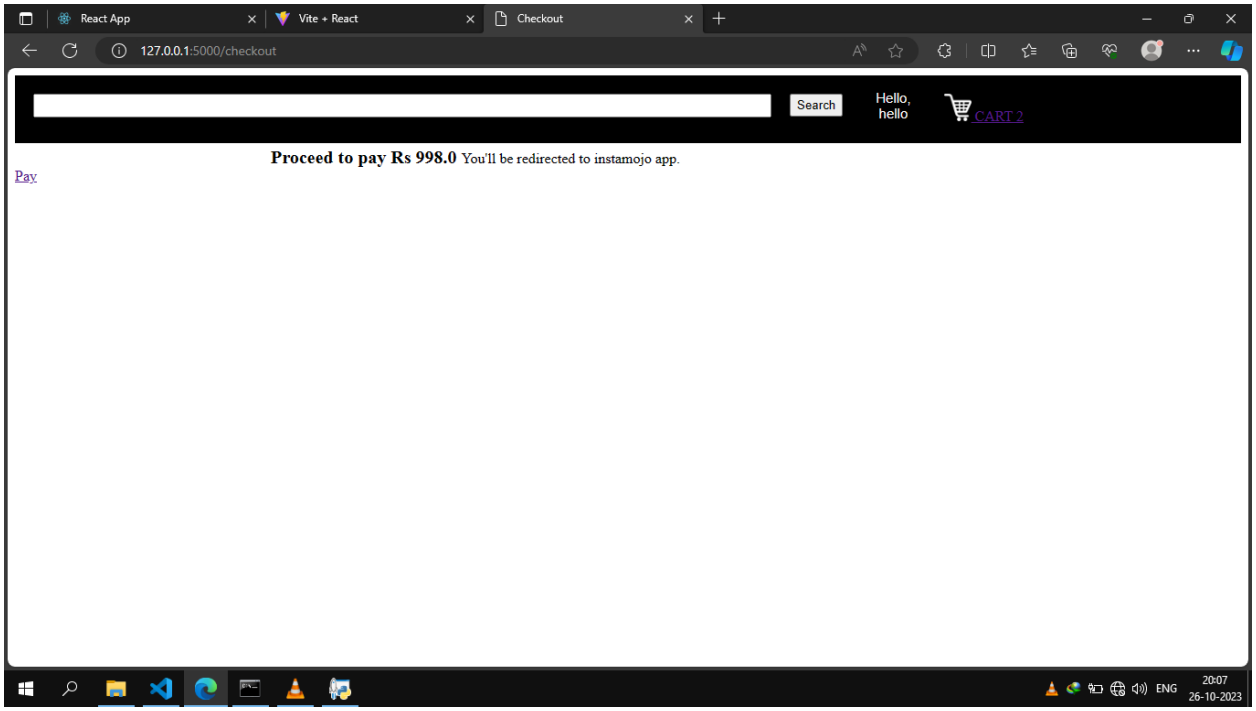
Green toys
Items
Bamboo Basket
Bamboo Furniture
Bamboo Spoon
Wooden Bird House
Wood Made Paper
HandMade Wall Decor
wooden Makeup Box
ENG
20:07
26-10-2023


React App
Vite + React
Your Cart
127.0.0.1:5000/cart
Search
Hello,
hello
CART 2
Shopping Cart
Bamboo Basket
Rs 499.0
In stock
Remove
Bamboo Furniture
Rs 499.0
In stock
Remove
Subtotal : Rs 998.0
Proceed to checkout
ENG
20:07
26-10-2023


React App
Vite + React
Checkout
127.0.0.1:5000/checkout
Search
Hello,
hello
CART 2
Proceed to pay Rs 998.0 You'll be redirected to instamojo app.
Pay
ENG
20:07
26-10-2023