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Subject ~~Course~~ - Project Work

Course - BCA

Project Title: E- Commerce Web Application using React JS, Tailwind CSS and Context API.

Hosted at: https://e-commerce-cyan-nine-38.vercel.app.

Project Overview:

This project is a worden, fully responsive e-com web application developed using react JS as the frontend framwork, Tailwind CSS for styling, and Context API for global state naragment. The objective of this project is to simulate a complete shopping experience for users, including product browsing, adding items to cart, filtering by category, and a basic checkout process.

The application is designed to provide a smooth, fast and responsive UI that works well on both mobile and desktop devices. All styling is done using utility-first Tailwind classes to ensure flexibility and consistency.

Key features:

- Add to Cart functionality

users can add multiple items to their cart, and the cart updates in real-time using Context API.

- Product Listing Page.

A visually appealing product gallery shows all available items with price, image, and category.

- Category filters

Products can be filtered by category, allowing users to view only what they're interested in.

- Search and filter options

users can search for items and filter based on criteria like price, type, and availbility.

- Checkout Page

A mock checkout page summarizes cart contents and total price, simulating a real-world purchase flow.

- Responsive Design

Built using Tailwind CSS, the app work seamlessly.

- Live Hosting

The project is hosted on Vercel for fast performance and global access.

→ URL: https://e-commerce-cyan-nine-38.vercel.app

Technologies Used :—

- React.js - Component based frontend development.
- Tailwind CSS - Utility-first modern CSS framework.
- Context API - Lightweight global state management.
- Vercel - Deployment and CI/CD hosting platform.

Conclusion: The project demonstrates hand-on experience in building scalable, maintainable and fast web applications.

It reflects the ability to manage state using Context API, apply responsive UI design with Tailwind CSS, and deploy real time application.

Project Report :-

Introduction

This project report present a modern, fully functional e-commerce web-application built using React Js, styled with Tailwind CSS, and managed via Context API.

It allows users to browse products, filter them by categories add items to a shopping cart, and simulate a checkout experience.

The site is hosted public using Vercel, providing a seamless online shopping experince with clear design and responsive layout.

Live Project : https://e-commerce-cyan-nine-38.vercel.app

Objective

The goal is to:

- Build an interactive and user ~~React~~ us friendly frontend of an e-commerce platform.
- Implement a shopping cart using React Context API

- Provide filtering, categorization, and checkout-like experience.
- Make the website fully responsive and fast
- Host the project online for public access and testing.

Tools & Technical Used

React JS - Frontend framework

Tailwind CSS - Responsive, utility-first CSS styling

Context API - Global state management

React RouterDOM - Routing and Page navigation

Vercel - Hosting and CI/CD deployment

Methodology

(a) project Planning

- Outlined core features like product listing, cart, and filters.
- Broke UI into components like Navbar, ProductCard, Cart etc.

(b) Component Development

- Each feature was implemented as a reusable component
- Tailwind classes were used for styling instead of traditional CSS

(c) State Management

- Used useContext and useReducer to manage cart state
- Cart updates in real time across the app

(d) Functionality

- Filter products by category
- Search products
- Add / remove items in cart
- Checkout summary with total price.

(e) Deployment

- App was deployed using Vercel for fast loading and global access.

Key Features

- Product Listing Page with images, prices, and description
- Shopping cart functionality with quantity and total price
- Category filters to narrow down product view.
- Responsive Layout summary for Cart preview
- Live Deployed App on vercel

Result

The result phase here:

- Cart state is managed globally and persistently
- Responsive UI - across devices,
- All objectives from planning phase were achieved.
- Smooth deployment with live access.

Conclusion

The project helped gain hands-on Experience in frontend development using modern technologies. React's component-based approach simplified UI building, Tailwind

CSS made styling efficient, and Context API enabled scalable state managment. Hosting on vercel made the app publically accessible, simulating real-world deployment.

Future Scope:

- Integrate user authentication (Login / Sign up)
- Add backend support with real databases (Firebase)
- Implemet secure payment gateway (eg. Razorpay)
- Add features like reviews, wishlist, and order history
- Improve SEO and accesibility for better public reach