# Price Comparison Web Application - Project Documentation

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## 1. Project Overview

The Price Comparison Web Application is designed to help users compare prices of a product from multiple e-commerce platforms such as Amazon, Walmart, and eBay. The application fetches product information from the FakeStore API and presents the data in an intuitive interface.

## 2. Features

* **Home Page:**
  + Search bar with a search button
  + Recommended product listings
* **Product Listing Page:**
  + Displays product images and prices from multiple platforms
  + "View Details" and "Add to Wishlist" buttons
  + Displays related products
* **View Details Page:**
  + Detailed comparison of products from different platforms (price, rating, reviews)
  + "Go to Website" button linking to the respective e-commerce store
  + Wishlist management (Add/Remove from wishlist)
* **Wishlist Page:**
  + Lists all wishlisted products
  + Remove from wishlist functionality
  + "Go to Website" button for purchase

## 3. Technology Stack

* **Frontend:** HTML, CSS, JavaScript
* **Backend:** None (Client-side application with API integration)
* **API:** FakeStore API (for product data)
* **Version Control:** Git & GitHub
* **Deployment:** Vercel

## 4. System Architecture

The application follows a client-side architecture where the frontend directly communicates with the FakeStore API to fetch and display data.

## 5. API Integration

* **FakeStore API** is used to retrieve product details such as name, image, price, rating, and reviews.
* Data is fetched dynamically using JavaScript fetch calls.

## 6. Website Pages & Functionalities

### ****Homepage****

* **Search Functionality:** Users enter a product name and are redirected to the Product Listing Page.
* **Recommendations:** Displays a set of recommended products fetched from the API.

### ****Product Listing Page****

* **Product Cards:**
  + Image, price, and availability on multiple platforms.
  + "View Details" button to navigate to the View Details Page.
  + "Add to Wishlist" button to save products.
* **Related Products:**
  + Displays similar products based on the user’s search.

### ****View Details Page****

* **Detailed Comparison:**
  + Shows product image, price, reviews, and ratings from different platforms.
  + "Go to Website" button to visit the actual product page.
  + "Add to Wishlist" (or "Remove from Wishlist" if already added).

### ****Wishlist Page****

* **Displays all wishlisted items**
* **Remove from Wishlist functionality**
* **"Go to Website" button** for direct purchase

## 7. Deployment Details

* **Hosting Platform:** Vercel
* **Live URL:** (Provide the deployed URL here)
* **Steps to Deploy:**
  1. Push the latest code to GitHub.
  2. Connect the repository to Vercel.
  3. Deploy and test the live site.

## 8. Version Control

* **GitHub Repository:** (Provide the repository link)
* **Branching Strategy:**
  + main branch for production
  + dev branch for development
  + Feature branches for specific changes
* **Commit Frequency:**
  + Code committed after completion of each major feature.

## 9. Scalability Considerations

* **API Optimization:**
  + Use caching to store frequently accessed data.
  + Optimize API calls to reduce latency.
* **Performance Enhancements:**
  + Lazy loading images for faster page load.
  + Implement pagination for large datasets.
* **Future Backend Integration:**
  + Add a database for storing user preferences and wishlist items persistently.

## 10. Future Enhancements

* **User Authentication:** Allow users to log in and save their wishlists.
* **Price Alerts:** Notify users when product prices drop.
* **More APIs:** Integrate additional APIs for broader price comparisons.
* **Mobile Responsiveness:** Improve UI/UX for mobile users.

This documentation serves as a roadmap for the project and ensures seamless development, deployment, and scalability of the Price Comparison Web Application.