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Online Price Comparison

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Abstract: *The Online Price Comparison System is a web-based application designed to help users compare product prices across multiple e-commerce platforms and make cost-effective purchasing decisions. The system integrates real-time data retrieval, filtering mechanisms, and intelligent comparison algorithms to present accurate product pricing information. It collects product data such as price, ratings, reviews, and availability from different online stores and displays them in a unified interface.*

The application provides a user-friendly interface where users can search for products, compare prices, and identify the best deals available in the market. It also includes features like user authentication, product filtering, and sorting options to enhance user experience. The system reduces the time and effort required for manual comparison across multiple websites.

Additionally, the platform can incorporate recommendation techniques and trend analysis to suggest popular or best-value products. By centralizing product information, the system ensures transparency, saves money, and improves decision-making for users. Overall, the Online Price Comparison System simplifies online shopping by providing a smart and efficient comparison platform.

Keywords: Price Comparison, E-commerce, Web Application, Product Analysis, Data Retrieval.

I. INTRODUCTION

The rapid growth of e-commerce platforms has made online shopping more convenient, but it has also created challenges for users in finding the best prices for products. Customers often need to visit multiple websites to compare prices, which is time-consuming and inefficient.

The Online Price Comparison System is designed to solve this problem by providing a centralized platform where users can compare product prices across various online stores. The system fetches product details such as price, ratings, and availability, and presents them in an organized format.

This application eliminates the need for manual comparison and helps users make informed purchasing decisions quickly. It is especially useful for students, budget-conscious buyers, and frequent online shoppers.

With advancements in data processing and web technologies, automated comparison tools have become essential. This system leverages these technologies to deliver accurate and real-time information in a simple and accessible manner.

II. METHODOLOGY

The system follows a structured approach for comparing product prices across different platforms.

2.1 Data Collection

- Users enter a product name (e.g., “iPhone 13”).
- The system fetches product data from multiple e-commerce websites.
- Data includes price, product name, ratings, and availability.

2.2 Data Processing

- The collected data is cleaned and structured.
- Duplicate or irrelevant entries are removed.
- Products are matched based on similarity.

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2.3 Price Comparison Algorithm

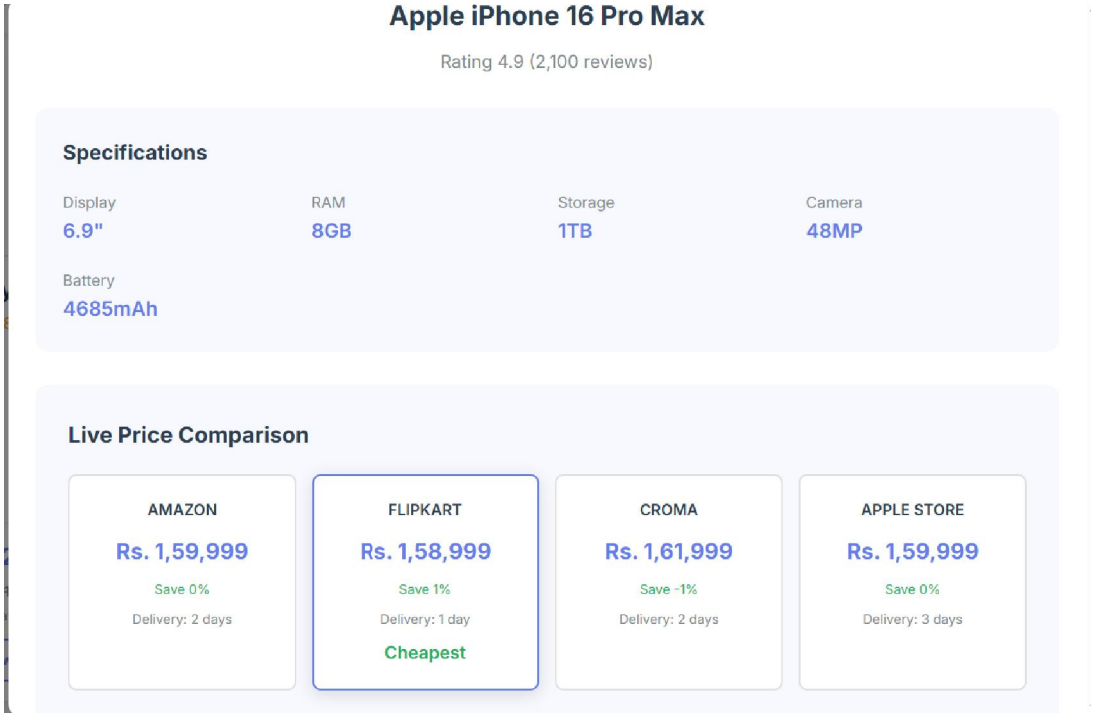
Prices from different platforms are compared.
The system identifies:

- Lowest price
- Highest price
- Best value product

2.4 Data Visualization

Results are displayed in:

- Tables
- Lists
- Sorting options:
- Price (Low to High)
- Ratings
- Popularity



2.5 User Authentication

- Users can register and log in.
- Secure access to personalized features.

2.6 System Execution

- After login, users can search products.
- System displays comparison results instantly.
- Error handling ensures smooth functioning.

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III. DISCUSSION

The Online Price Comparison System provides a smart way to compare products across platforms.

3.1 Key Features

- User Registration and Login
- Product Search Functionality
- Real-time Price Comparison
- Sorting and Filtering Options
- Product Ratings and Reviews
- User-Friendly Interface

3.2 Limitations and Challenges

Technical Challenges

- Dependency on external APIs
- Data inconsistency across platforms
- Real-time updates may be delayed

User Challenges

- Incorrect product search queries
- Misinterpretation of product details

Operational Challenges

- Requires stable internet connection
- Performance may slow with large data

Cost & Maintenance

- API usage costs
- Regular system updates required

IV. WORKING OF THE SYSTEM

4.1 User Authentication Module

- Users register and log in securely
- Credentials stored in database

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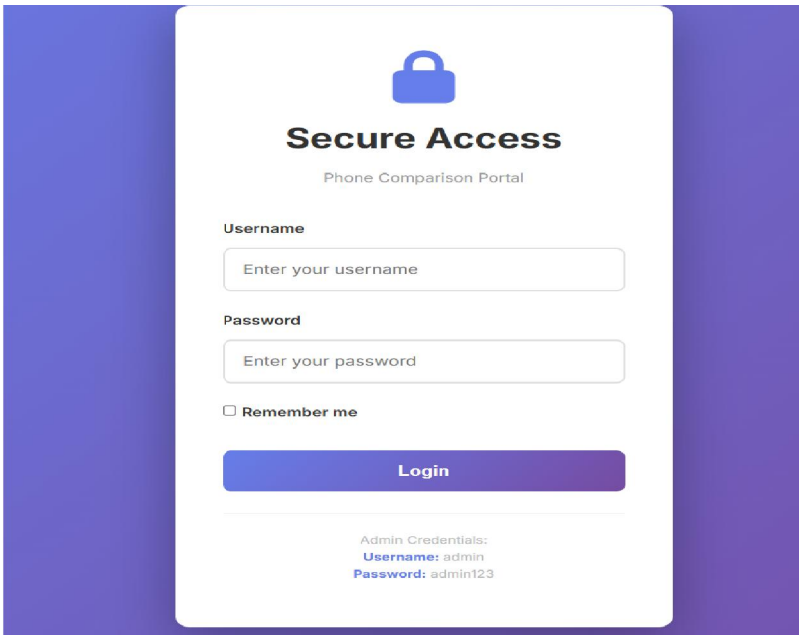
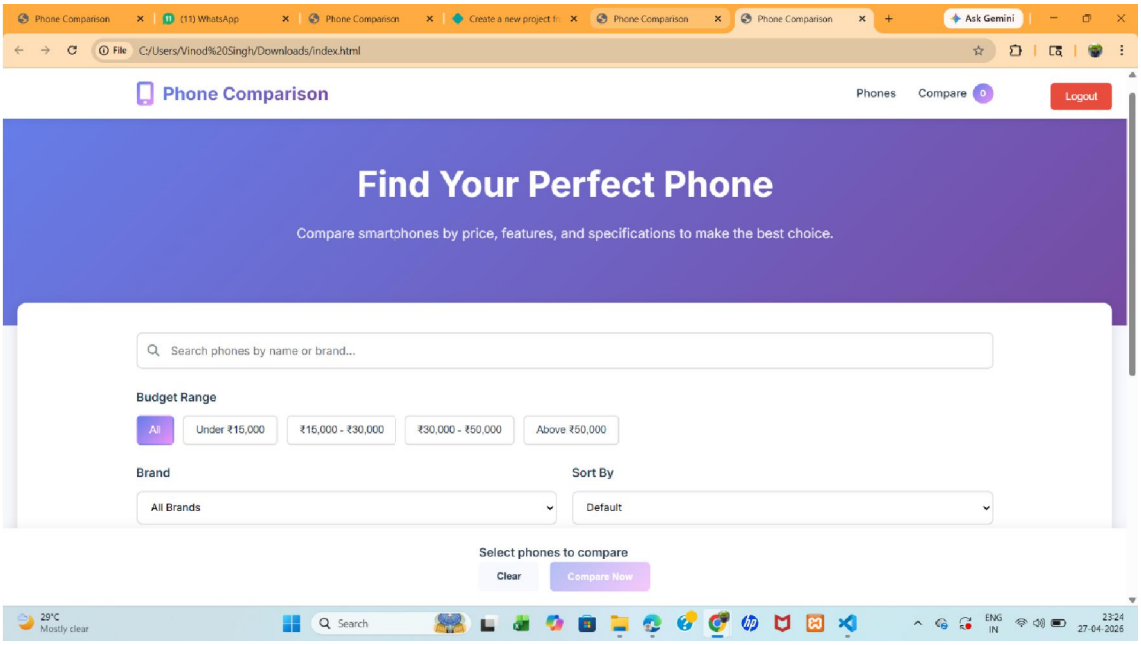


4.2 Product Search

- User enters product name
- System processes request



4.3 Data Fetching

- Data retrieved from e-commerce platforms
- Includes price, rating, and availability

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4.4 Data Processing

- Data cleaned and organized
- Matching products grouped together

4.5 Comparison Engine

- Prices compared across platforms
- Best deal identified

Specification	Apple iPhone 16 Pro Max	Samsung Galaxy S24 Ultra
Price	Rs. 1,59,999	Rs. 1,29,999
Display	6.9"	6.8"
Processor	A18 Pro	Snapdragon 8 Gen 3
RAM	8GB	12GB
Storage	1TB	512GB
Camera	48MP	200MP
Battery	4685mAh	5000mAh
Rating	4.9	4.8
Reviews	2,100	1,250
Best Price Available From	FLIPKART Rs. 1,58,999	POORVIKA Rs. 1,27,999

4.6 Visualization

- Results displayed in structured format
- Easy comparison for users

4.7 User Interface

- Simple and interactive design
- Allows easy navigation

4.8 Result Display

Final output includes:

- Product Name
- Price from different websites

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- Best Price
- Ratings
- Availability

V. LITERATURE SURVEY

Price comparison systems have gained importance due to the expansion of e-commerce platforms. Traditional shopping required physical comparison, which was time-consuming.

Modern systems use web scraping, APIs, and data processing techniques to collect and compare product information. Research shows that automated comparison tools improve decision-making and reduce user effort.

Many systems also integrate recommendation engines and user behavior analysis to enhance accuracy. However, challenges like data inconsistency and real-time updates still exist.

The proposed system focuses on combining data retrieval, processing, and visualization to provide a simple and effective comparison platform.

VI. FUTURE SCOPE

Integration of AI-based recommendation systems

- Mobile application development
- Real-time price alerts
- Integration with more e-commerce platforms
- Personalized product suggestions
- Voice-based search functionality

VII. CONCLUSION

The Online Price Comparison System provides an efficient solution for comparing product prices across multiple platforms. It reduces manual effort, saves time, and helps users make better purchasing decisions.

By integrating data retrieval, comparison algorithms, and user-friendly design, the system ensures a smooth and effective user experience. It serves as a practical tool for modern online shoppers and can be further enhanced with advanced technologies in the future.

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