ABSTRACT

PROBLEM STATEMENT

Finding the best deals on PC components is challenging due to the vast number of vendors & fluctuating prices across multiple websites. This often forces PC enthusiasts & buyers to invest considerable time in researching & comparing prices across various platforms to ensure they are getting the best value. Our project seeks to address this gap by creating a platform that aggregates price information from popular vendors, allowing users to quickly find & compare the best deals on PC components in one place.

BACKGROUND

Shopping for PC parts can feel like a hassle with so many stores and price options to sift through. As PC enthusiasts, we know the struggle of balancing quality with the best deals. That's why we're building a platform to make it easier, pulling together price comparisons from trusted sellers so users can quickly find the lowest prices and make smarter choices—all in one place.

OBJECTIVES

- Address the challenges customers face when buying computer components by simplifying the shopping process.
- Creating a centralized platform that aggregates prices from well-known sellers.
- Eliminate the need for time-consuming research across multiple websites
- Provide users with a fast and easy way to compare products, ensuring they find the best deals and save money.
- Helping users to make cost-effective informed decisions

FEASIBILITY ANALYSIS

Technical Feasibility: The project is technically feasible using PHP libraries for web scraping & SQL for database management, with tools like XAMPP & phpMyAdmin aiding local development. Challenges like scraping limitations & price updates can be addressed with robust servers & periodic update scripts.

Economic Feasibility: Economically, the setup cost is minimal due to open-source tools, with revenue potential from affiliate marketing, ads, & premium features.

Operational Feasibility: Operationally, a small team skilled in PHP, databases, & web development can build & maintain the platform, starting with an MVP for scalable growth.

BACKGROUND

INTRODUCTION

The **"Buy Cheaper"** project simplifies finding the best deals on PC components by creating a centralized platform that compares prices from multiple vendors. Using web scraping and a user-friendly design, it provides real-time price updates and easy product comparisons. Built with a flexible development model and powered by a MySQL database, the platform helps users save time, money, and make informed purchasing decisions.

LITERATURE REVIEW

This literature review discusses four existing systems that align with the objectives of the proposed project, highlighting their functionalities and methodologies.

1. PCPartPicker :

PCPartPicker: PCPartPicker is a popular tool for PC builders that not only helps users design custom PC setups but also lets them compare prices from different sellers in real-time. It's easy to use, and the community aspect allows users to share builds and get feedback. This platform is a great example of how to make web scraping and price comparisons work smoothly for users.

2. CamelCamelCamel:

CamelCamelCamel specializes in tracking Amazon prices, offering users insights on price trends over time and even letting them set up alerts for price drops. While it's Amazon-specific, its focus on tracking deals and notifying users of price changes aligns well with our project's goal of making shopping easier and more informed.

3. Honey:

Honey is a browser extension that automatically applies the best coupons at checkout and also tracks and compares prices. Its simple interface and real-time updates provide a seamless way for users to make smart buying choices. Honey demonstrates how price tracking and good user experience can go hand-in-hand.

4. PriceGrabber:

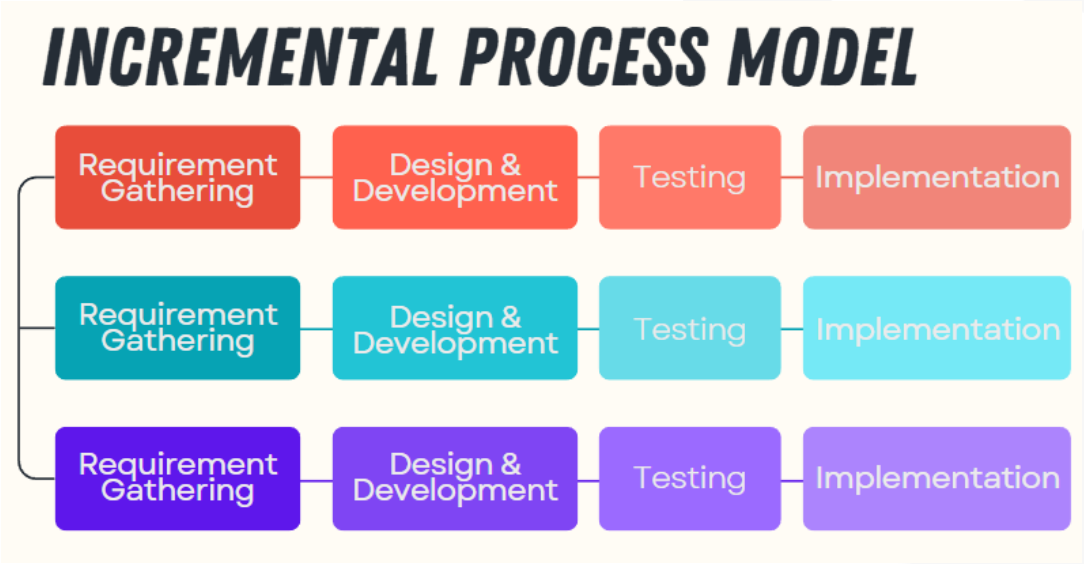
PriceGrabber is a site where users can search for products and see price comparisons across many stores. It organizes items by category, shows product details, and highlights deals, making it a good model for how a comparison site can display comprehensive info in a clear, user-friendly way.

5. PriceSpy: PriceSpy is a comprehensive price comparison platform that lets users compare prices, read reviews, and view product specs across a range of online retailers. It provides tools like price alerts and historical price tracking, allowing users to find the best deals over time.

PROPOSED MODEL

DEVELOPING MODEL

The Incremental Process Model was selected for its ability to break development into manageable steps, promoting flexibility & continuous improvement. Features such as price comparison, login functionality, and vendor scraping were developed & tested incrementally. This approach allowed for early issue resolution, quick adaptation to changes, and step-by-step delivery of a functional product, ensuring an efficient and user-focused development



process.

PROPOSED FEATURES OF OUR PROJECT

Price Comparison: Users can search for PC components like CPUs, GPUs, RAM, SSDs, & more. Search results display product details, images, & prices from various vendors.

Dynamic Pricing: The project uses web scraping techniques to dynamically fetch product prices from different vendor websites. This ensures that users get up-to-date prices.

Product Comparison: As user is making a decision what to buy & where to buy from, we introduced a feature that can help a user to compare products side by side giving them a broader point of view

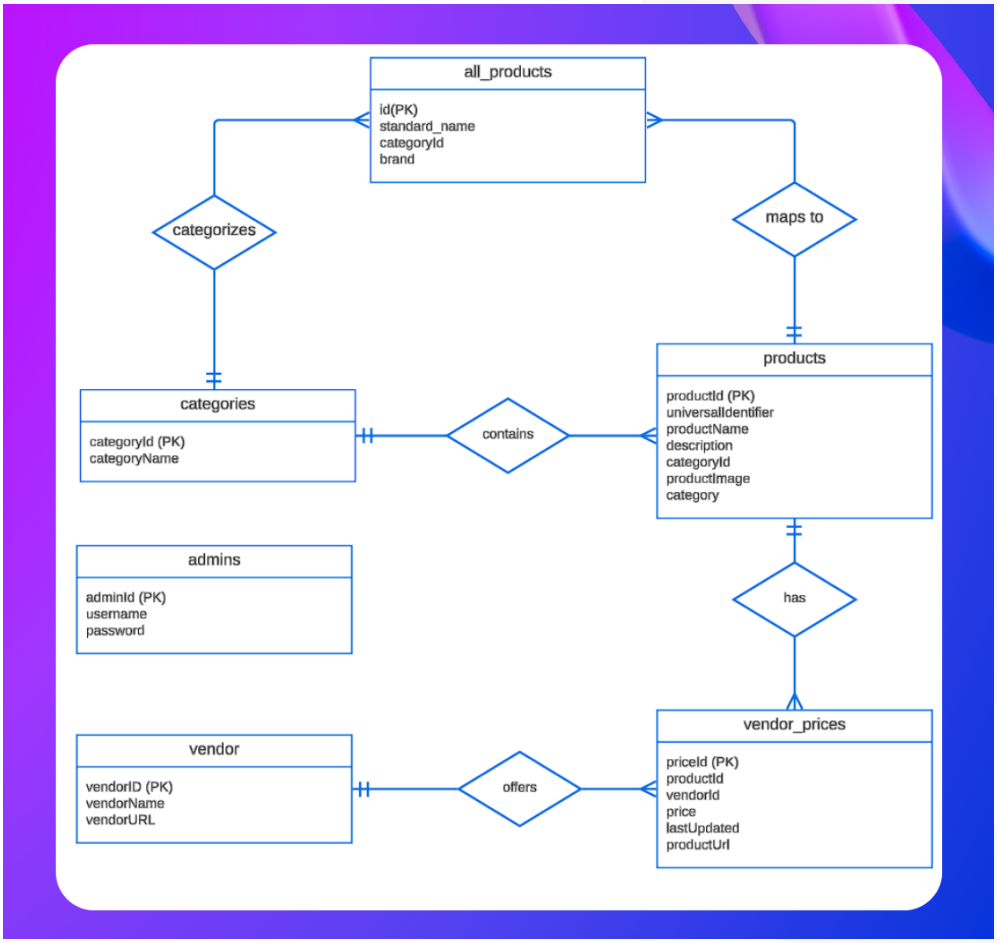
Database Integration: Data is stored in a MySQL database with separate tables for products, vendors, categories & vendor prices.

User-Friendly Interface: Aims on modern, intuitive & minimalistic design to convey information to users without overwhelming them with excessive information.

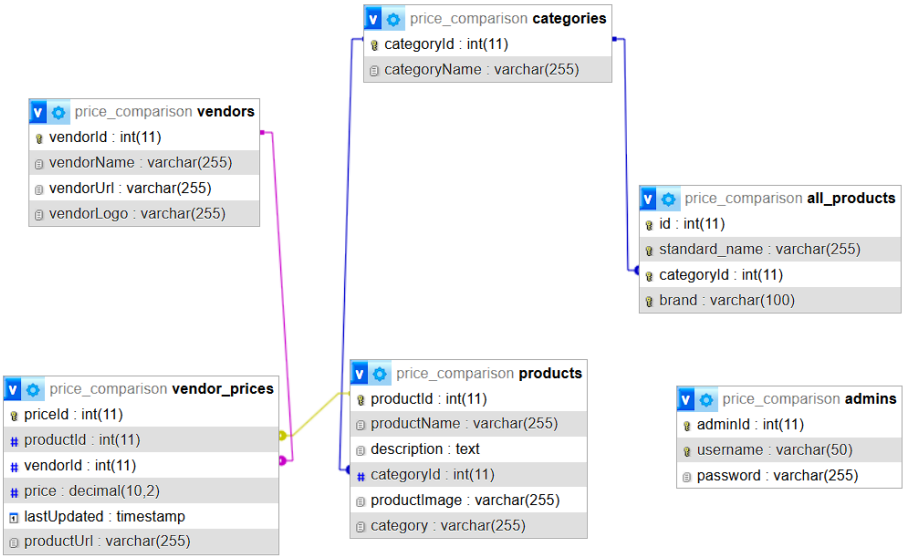
IMPLEMENTATION

DATABASE IMPLEMENTATION

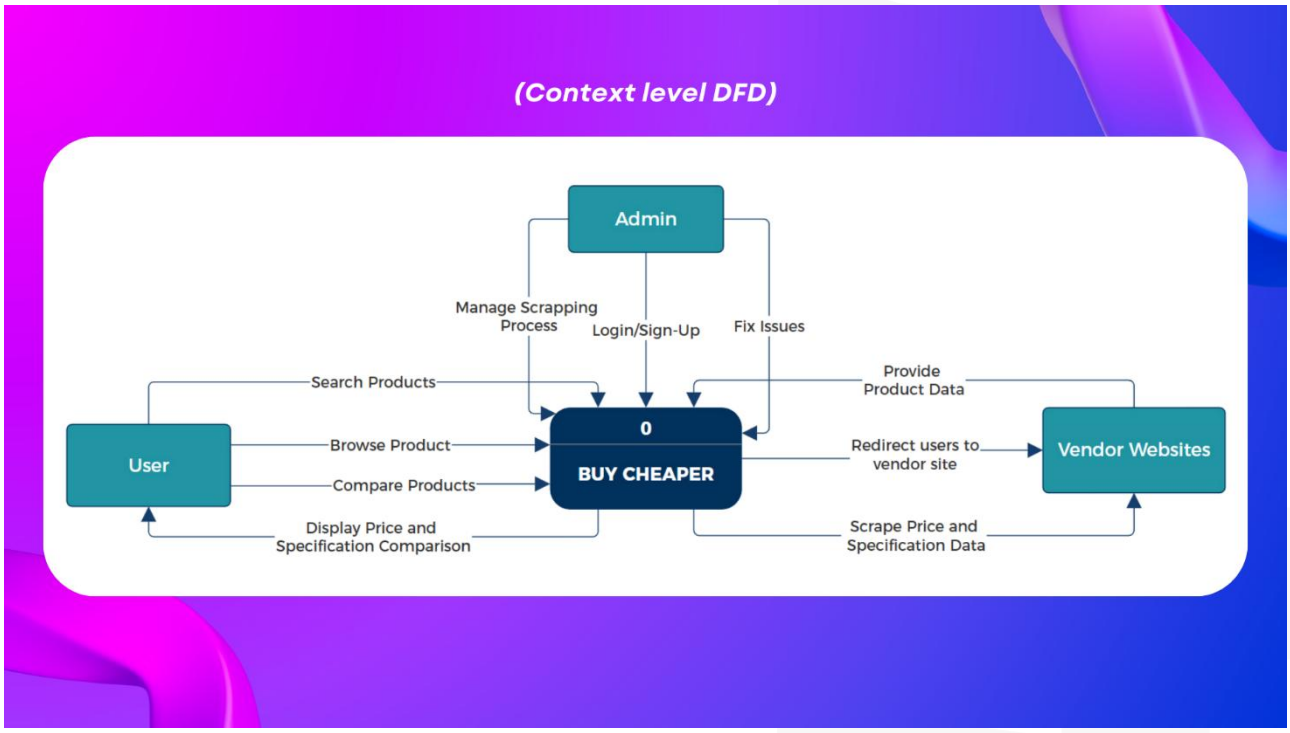
ER Diagram



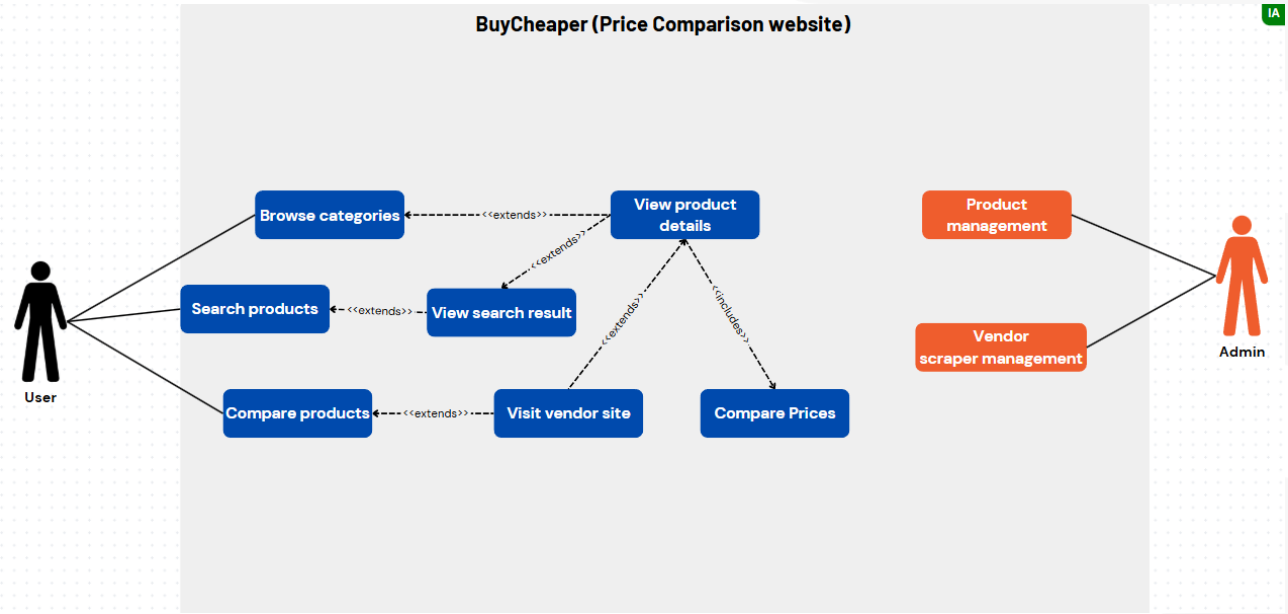
Schema Diagram



Data Flow Diagram (DFD)



Use Case Diagram



HOMEPAGE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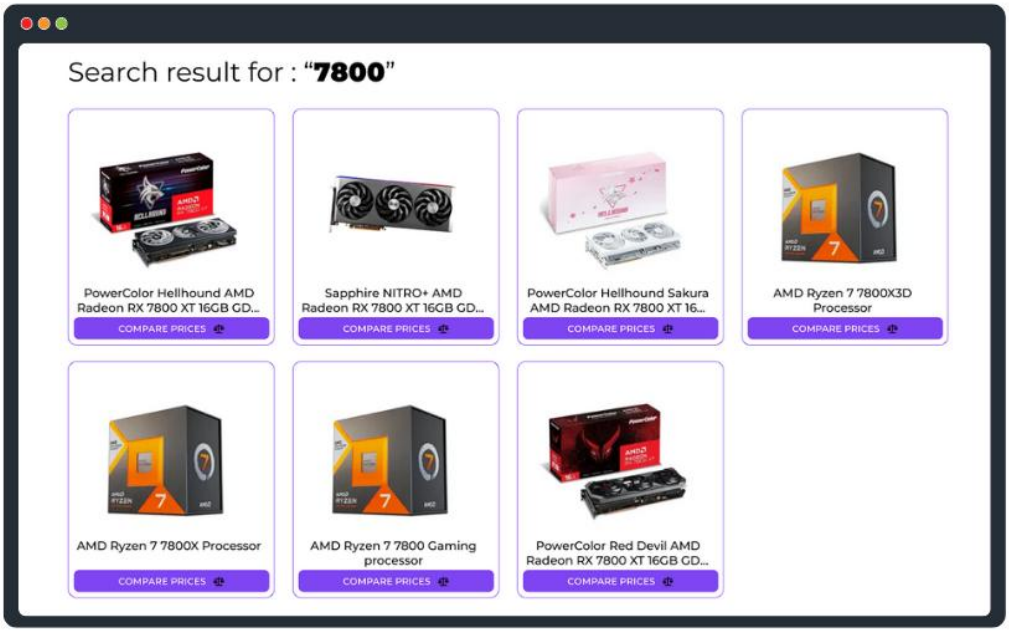
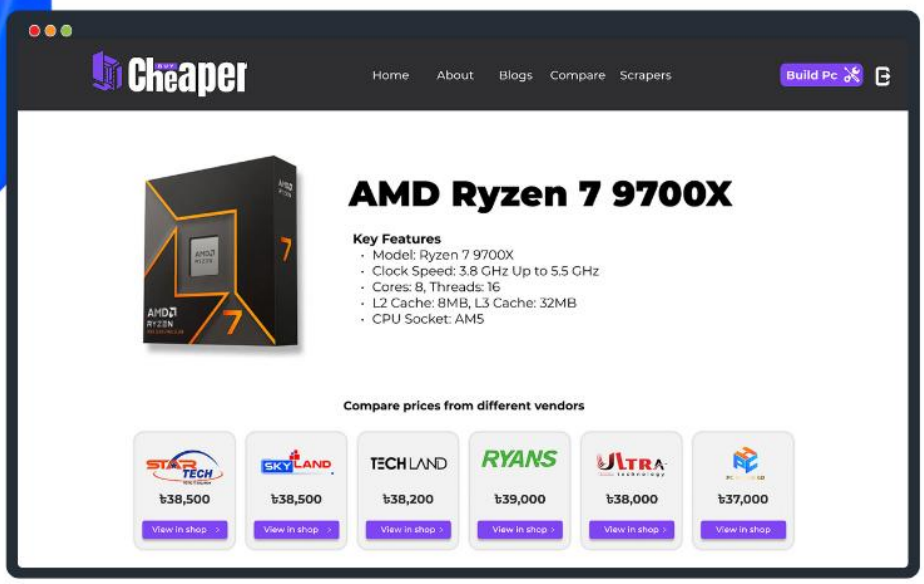
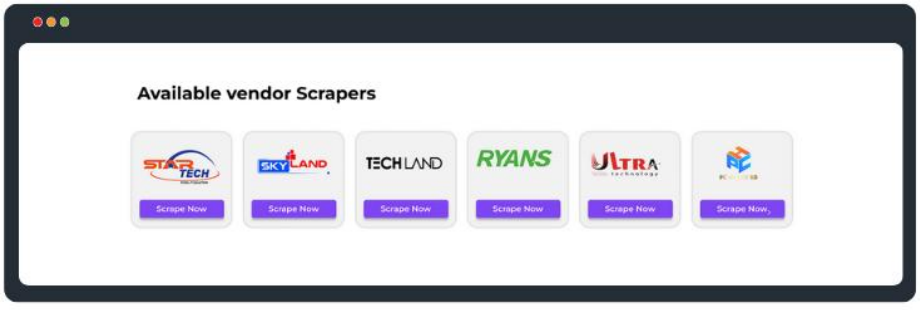
SEARCH RESULT



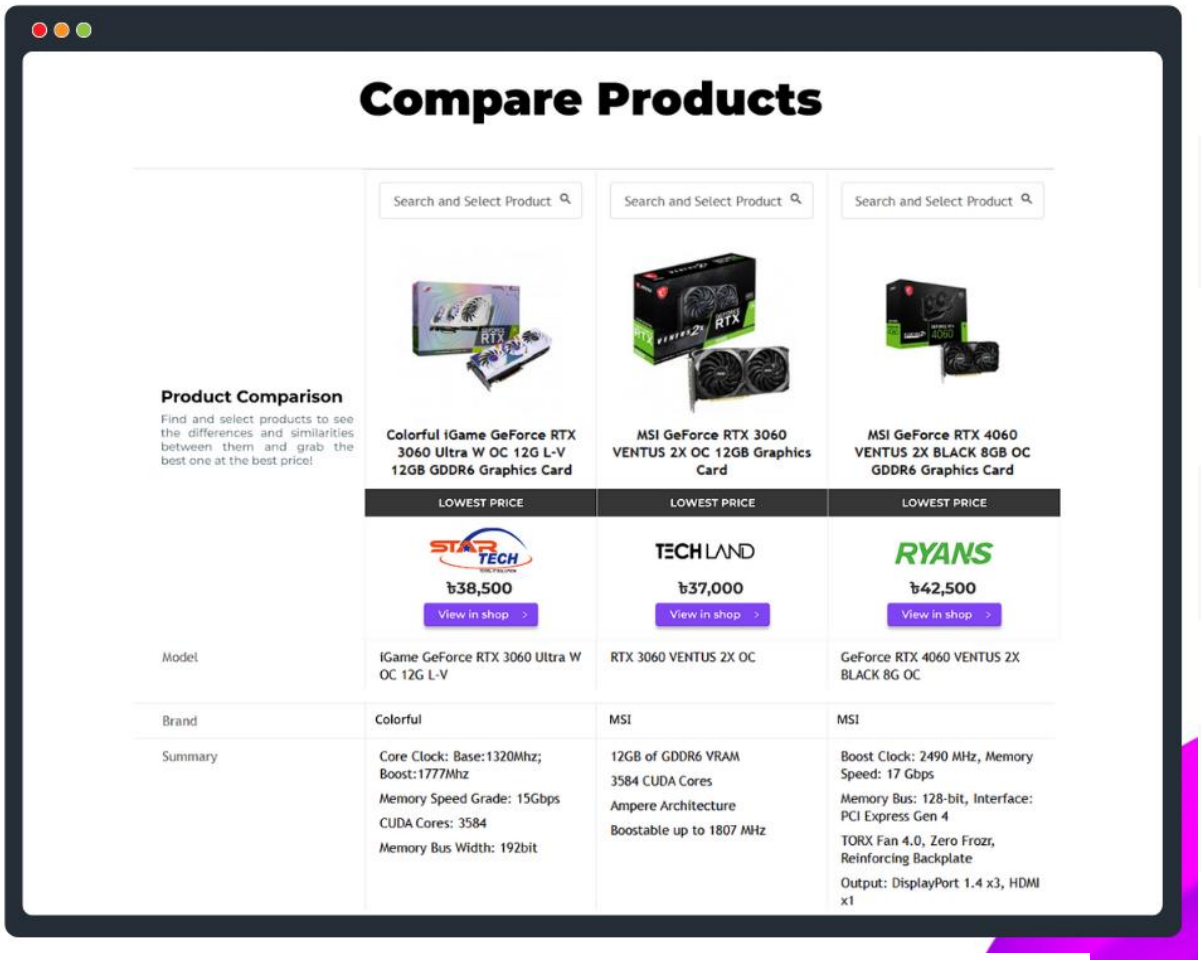
PRODUCT DETAILS



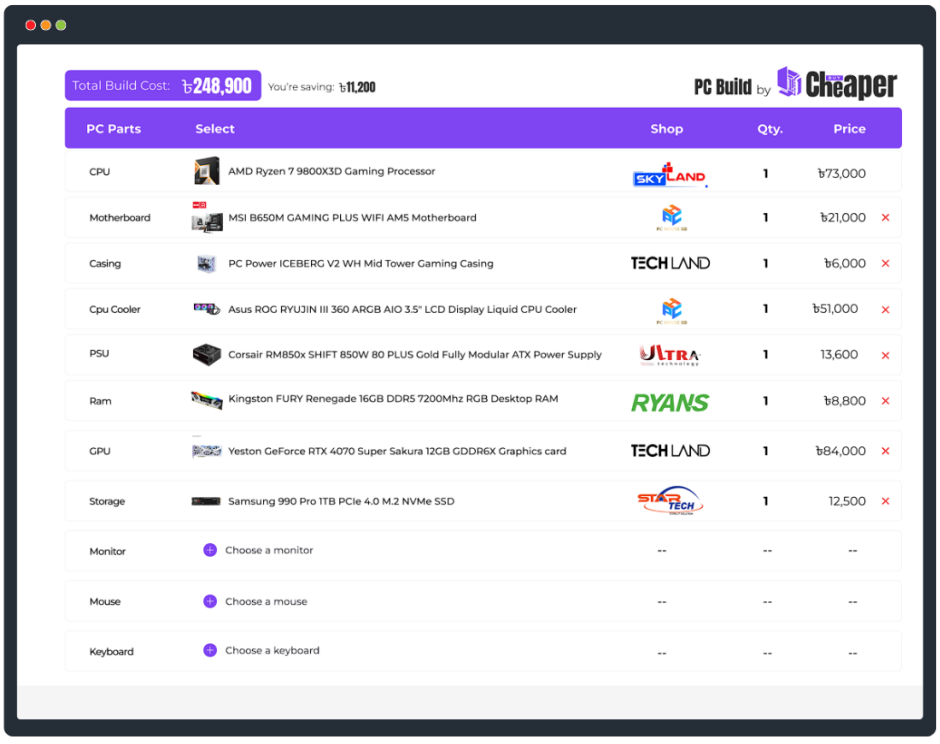
SCRAPING PAGE



PRODUCT COMPARISON



PC BUILDING



CONCLUSION

FUTURE WORKS

Build PC Functionality Implementation

This feature will allow users to design and assemble their custom PCs by selecting components like CPUs, GPUs, and RAM while ensuring compatibility. It will include a budget tracker, pre-built templates for specific use cases, and performance estimates. Users can save their builds, share them, and compare prices from various retailers for seamless purchasing.

Personalized Ad System for Brands

A targeted ad system will enable brands to showcase relevant products to users based on their browsing history and preferences. Dynamic ad spots like banners, sponsored listings, and special deals will enhance visibility while providing detailed performance analytics. Premium sponsorship opportunities will let brands boost their presence on the platform.

Enhanced Admin Panel Functionalities

The admin panel will gain advanced tools for managing product data, monitoring platform performance, and overseeing user-generated content. Features like automated error tracking, user behavior insights, and ad campaign management will streamline operations. Role-based access control will ensure secure and efficient team collaboration.

LIMITATIONS

Limited E-Commerce Functionality:
Our website focuses solely on price comparison and does not support direct purchasing or payment processing. As a result, users are redirected to vendor websites for transactions. This also limits revenue generation to affiliate marketing and advertisements.

Lack of Vendor Management Portal:
Currently, vendors do not have a dedicated portal to manage their product listings, pricing, or other data. All product and pricing information is collected externally via web scraping, which limits collaboration opportunities with vendors.

Inaccurate Product Mapping:
Product mapping is not 100% accurate due to reliance on automated web scraping techniques, which may lead to mismatches or inconsistencies in product data.

Dependence on Third-Party Data:
The platform relies heavily on data from external sources, making it susceptible to changes in vendor website structures or access restrictions, potentially affecting functionality.

No Personalized Recommendations:
The website currently lacks personalized recommendation features, which could enhance the user experience by suggesting products based on preferences or past activity.

Scalability Challenges:
As the number of vendors and products grows, ensuring data accuracy and maintaining real-time updates could become more challenging without advanced infrastructure.

We intend to incorporate vendor APIs in the future to provide real-time availability and pricing updates for products, resulting in quicker and more precise data retrieval. Furthermore, our goal is to transform the platform into an affiliate website where users may buy things via affiliate links, which will be advantageous for vendors as well as customers. Special discounts or perks will be extended to users, while suppliers will see a boost in sales and visibility.