

This project lays the groundwork for PriceScout, a price intelligence platform designed to empower South African consumers with transparent, real-time, and historical retail pricing information. In response to the rapid growth of mobile users and hybrid shopping behaviors nationwide, PriceScout addresses critical gaps in the market. Currently, there is no comprehensive, user-friendly solution enabling consumers to compare prices, identify promotions, and track product availability across major retailers quickly and efficiently.

To fill the gap, this project combines technical innovation in database design with careful local market research and sustainable data integration practices.

The core achievements of the project are three-fold:

Database Design:

A normalized relational database was developed, enabling efficient storage, integration, and analysis of diverse retail data. The schema is flexible and scalable, supporting distinct entities for items, prices, stores, reviews, and inventory—thereby ensuring robust data aggregation and the preservation of historical trends.

Market Research & Source Prioritization:

Top South African retailers were evaluated and prioritized using criteria such as market share, data completeness, update frequency, and consumer trust. This research ensures that ongoing and future data integrations focus on the most reliable and valuable sources.

Data Retrieval Guide:

A clear guide for mapping and extracting essential product and pricing fields from retailer websites was created. This approach streamlines manual and automated data collection, allows for easier adaptation to changing web designs, and positions the platform for future automation and API integration.

A proof-of-concept database prototype was developed using Azure, with manual data extraction from selected platforms, demonstrating the system's viability and paving the way for scalable implementation. Key future steps include automating data retrieval, scaling infrastructure, enhancing analytics, and continuous market monitoring.

Ultimately, PriceScout's foundation enables both technical and financial sustainability, leading to numerous potential revenue pathways including premium features, affiliate partnerships, data services, and retailer collaborations. Through robust data modeling, strategic source selection, and clear process design, PriceScout is well-positioned to deliver continuous value to South African consumers and stakeholders in the evolving digital retail landscape.