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AI-Driven Review Aggregator and Analyzer for Strategic Product Insights

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Abstract

Our project addresses the critical problem of understanding customer feedback for businesses. Customer feedback is essential for business growth, helping to identify customer needs and product shortcomings.

Our solution involves gathering customer reviews using web scraping techniques and analyzing this data with natural language processing (NLP) to provide actionable insights. The AI module will produce an overall sentiment score and will highlight specific product features that are most liked or criticized. These insights will be presented in a user-friendly dashboard, enabling product owners to make data-driven decisions.
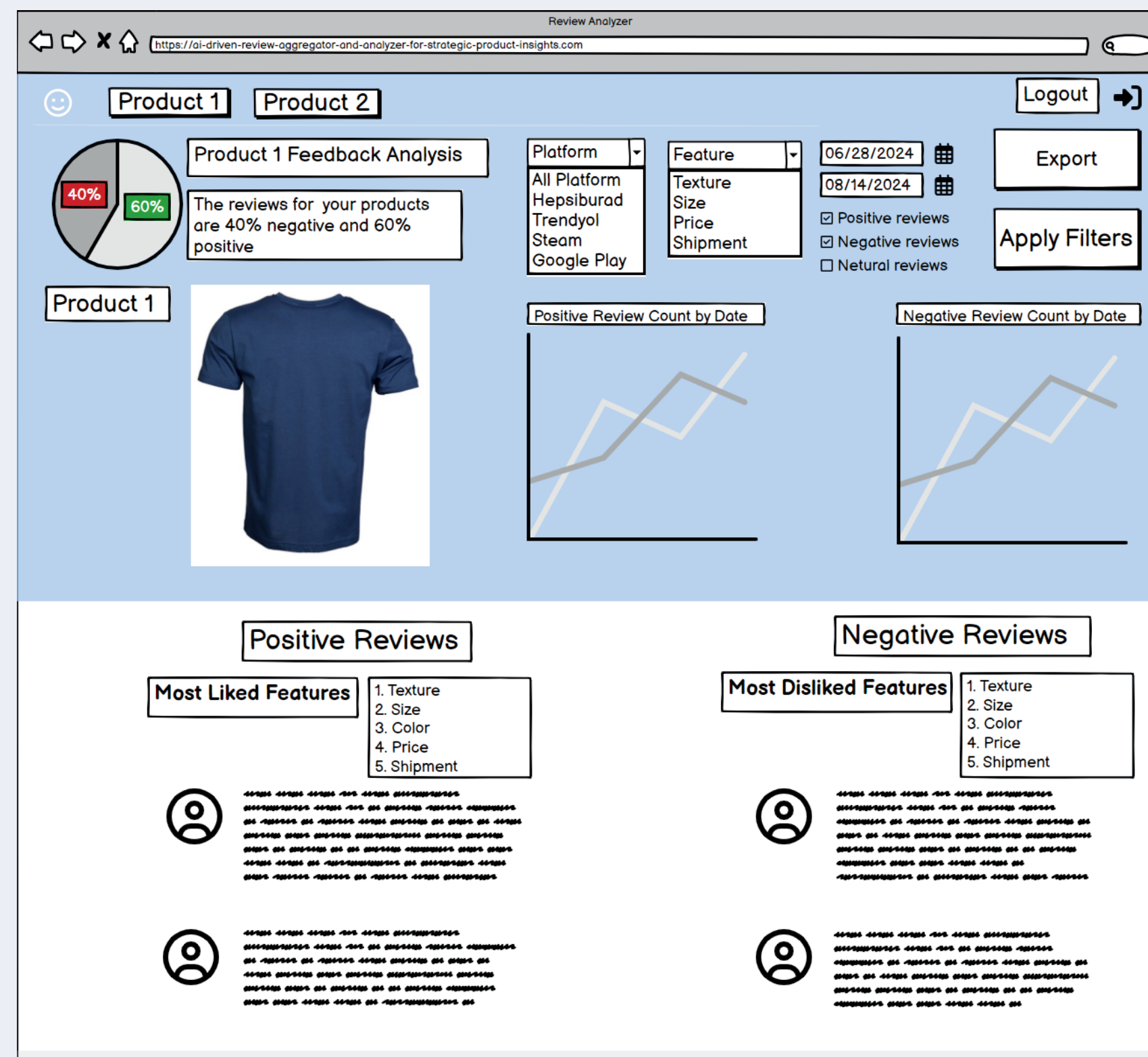
Results

- **Sentiment Analysis:** The AI module will categorize reviews accurately, providing an overall sentiment score for each product. For example, Product X received 75% positive reviews and 25% negative reviews.
- **Feature Extraction:** Key product features will be identified from the reviews. For instance, users frequently praised the battery life of Product Y but criticized its camera quality.
- **Dashboard Insights:** The dashboard will allow product owners to easily visualize customer feedback. They will be able to filter reviews to focus on specific time periods or sentiments and export data for further analysis.
- **Business Impact:** The insights provided by our system will help businesses improve their products based on real customer feedback, leading to enhanced customer satisfaction and increased sales.

Method

- **Data Collection:** We will utilize web scraping techniques to gather customer reviews from various online sources. This data will include review text, ratings, and metadata such as review dates.
- **Data Processing:** The raw review data will be cleaned, transformed, and normalized using our AI service to prepare it for analysis. Noise will be removed, and data formats will be standardized.
- **NLP Analysis:** Our AI module performs sentiment will analyze to categorize reviews as positive or negative. It also extracts the most liked and disliked features of the products mentioned in the reviews.
- **Data Presentation:** The processed data will be stored in a relational database, and the insights are going to be displayed on a dashboard. Users will be able to filter the reviews by platform, sentiment, date range, and other criteria. Visualization tools such as charts and graphs are used to present the data clearly.

Mockup Design

Hardware/Software Mapping