Project Title: Beauty & Cosmetics Products Recommendation Platform

Project Summary:
The Beauty & Cosmetics Products Recommendation Platform, *GlowGuide*, is an innovative web application designed to provide personalized beauty and cosmetics product recommendations. Using datasets from platforms like Amazon and Sephora, the system gathers detailed information on product names, brands, categories, user reviews, ratings, and prices. The platform offers users recommendations based on their specific preferences, needs, and budget, improving their shopping experience. Users can explore product lists, view relevant video previews, and create personalized wishlists, all while discovering trending items and interacting with product reviews.

Project Description:
This platform addresses the issue of choice overload in the beauty industry by providing a product discovery experience. It integrates multiple features, such as a recommendation engine that evaluates user preferences and budgets, as well as product reviews, to suggest the most relevant beauty and cosmetic items. Data from Amazon, Sephora, and other sources offer a comprehensive view of top-rated and popular products.

The application features a user profile system, where users can create accounts, save wishlists, and track browsing history. The platform also supports an advanced search and filter functionality, enabling users to compare products based on attributes like price and effectiveness. An innovative feature is the integration of video previews via web scraping from YouTube. This gives users the chance to visually assess products in use. Real-time trend tracking and product rankings based on hit rates further enhance the user experience, making the platform a robust tool for beauty product recommendations.

Problem You Want to Solve:
The platform aims to address the challenge of comparing prices and functionalities through the overwhelming variety of beauty and cosmetic products on the market by providing personalized recommendations based on individual preferences, budgets, and product reviews. The goal is to make it more convenient for users to discover the best-suited products.

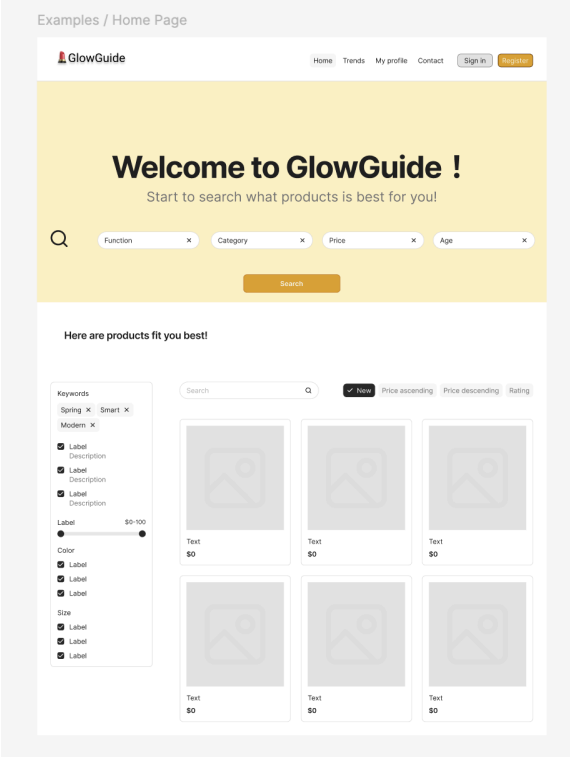
Creative Component:
One creative aspect that could elevate the platform's functionality is the integration of video previews by scraping a related YouTube video when a product (eyeshadow, lipstick, etc.) is being searched by a user and capturing frames to showcase a product's features in action. This Youtube video will then be saved into the database and when

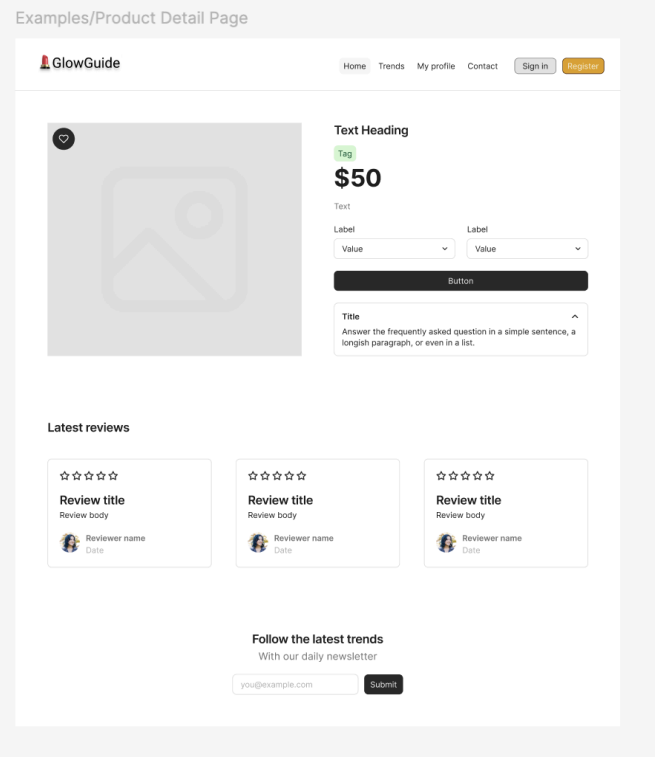
other users search for the same products, no scraping will be needed to show the video to these users.

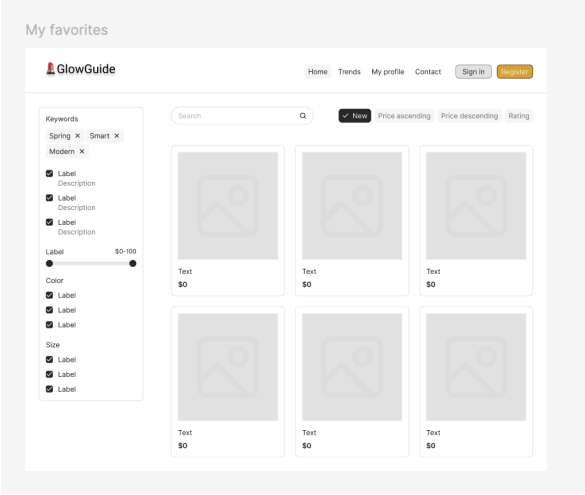
Application Key Features:

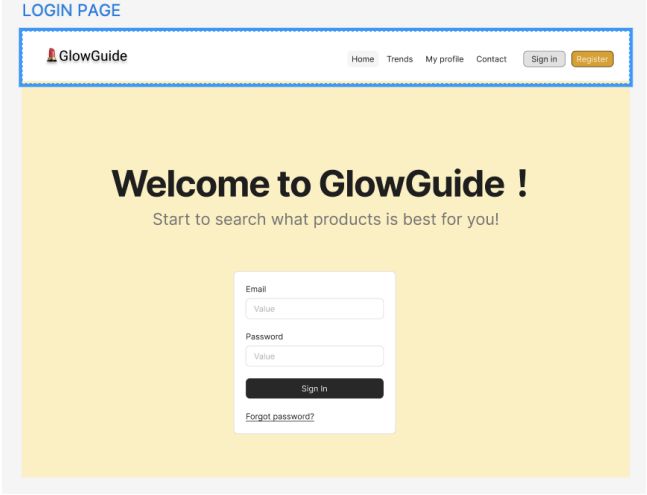
- **User Profile Creation, Change, Deletion:** Users can sign up an account, log in to their account, and create and update their profiles or delete their accounts. Key features include password encryption and user authentication.
- **Search and Filtering:** Users can search for products that are saved in our database based on keywords and filter results by attributes such as scoring, price (ascending or descending), brand, and product type.
- **Product Recommendations:** The platform offers customized product suggestions based on user preferences and budget. Over time, this recommendation algorithm will continue to adjust to provide more accurate and relevant suggestions as users interact with the platform.
- **Wishlist and Favorites:** Users have the flexibility to plan their shopping experience by creating and maintaining lists of favorite products. Users can create multiple specialized wish lists, such as creams, makeup removers, and more. Wish lists allow users to save items they are interested in for future consideration, and they also have the freedom to create, update, and delete these lists as needed.
- **Browsing History:** Users can track and manage their browsing history, making it easier to revisit previously viewed items. The platform also offers an option to clear or delete older entries, allowing for personalized data control.
- **Comments and Reviews:** Each product page has a robust comments section where users can leave detailed reviews, rate products, and interact with other shoppers. This engagement enhances community feedback and can better engage future users.
- **Product Rank and Comparison:** Users can rank and compare products based on specific attributes such as price, effectiveness, and popularity.
- **Real-Time Trending Products:** The platform highlights trending products each week, based on user interactions, sales data, and reviews. This real-time feature ensures that users stay informed about popular and top-rated items across categories.
- **Video Integration:** To enhance the shopping experience, the platform integrates related product videos sourced from YouTube and other platforms. These video previews allow users to see the products in action, providing a richer, more engaging understanding of how each item functions.

Low-Fidelity UI Mockup:









Project Work Distribution:

- **User Profile, Log In, and Sign-Up:** Yiyu Weng
- **Password Encryption and User Authentication:** Yifei Mao
- **Search and Keyword Functionality:** Yifei Mao
- **Wishlist and Browsing History:** Tong Wu

- **Comment Area and Product Ranking:** Ke Jiang
- **Web Scraping for Video Previews:** Tong Wu
- **Backend System Development & API Integration:** Shared across the team with specific backend assignments per member.

Data Sources:

- **Kaggle - Most Used Beauty Cosmetics Products in the World**

  Sourced from https://www.kaggle.com/datasets/waqi786/most-used-beauty-cosmetics-products-in-the-world this dataset includes a diverse array of beauty and cosmetic products from various brands around the world. It contains key details such as product names, categories, and associated brand information, making it essential for understanding product popularity and variety.

- **YouTube Video Dataset**

  In addition to product data, the platform incorporates a YouTube video dataset to enhance the user experience with video content. Users can explore relevant video previews that showcase beauty tutorials, product reviews, and other informative content. We planned to fetch relevant video resources through YouTube Data API.