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Team Name : The Geek Chics

Team Details: Netaji Subhas University of Technology, Delhi

Member 01: Medha Mishra (+91 98118 56856 | medha.mishra.ug22@nsut.ac.in)

Member 02: Ananya Gulati (+91 98106 69793 | ananya.gulati.ug22@nsut.ac.in)



About MyntraOnBudget

- MyntraOnBudget is a prototype idea for creating a shopping bag, well under budget of the customer.
- In this section of the Myntra website/app, we ask the user to input their shopping budget using price sliders available on the screen.
- This is followed by selecting the combination of categories, which the customer wishes to purchase, ranging across clothing & apparel of different kinds, accessories, beauty, skincare and makeup products, jewelries, home & living product etc., among the large range of products available on the e-commerce app.
- The customer then gets the most well-rated products under their budget to cater to their recommendations, while taking care of their budget limitations.
- The user can select from the wide variety filtered for them tailored to their custom requirements, as well as have access to recommendations of similar products.
- This idea is particularly useful for Gen-Z as they have a stipulated amount of money at their disposal, so they can indulge in a combination on products well under their pocket allowances, this is also useful for gifting purposes, as a combination of products well under your budget will surely excite the person receiving the gifts.

Go to MyntraOnBudget section on the Myntra page.



Decide and input the budget you wish to invest in your shopping spree today.



Add the categories of products you need from the available panels.



You get the best rated combination of products you need, well under your budget.



Add them to cart, bill them and savor the products you just bought. Hurray!



Diving deep into the Prototype Model

Python	The programming language used for all the coding tasks.
Google Colab	An interactive environment for running the code.
Pandas:	For data manipulation and analysis.
Numpy	For numerical operations .
Matplotlib	For data visualization .
Seaborn	For statistical data visualization.
scikit-learn:	For machine learning algorithms and tools.
cosine_similarity	For computing similarity between items.
TfidfVectorizer	For text vectorization .
SciPy	For scientific computations .
Spacy	For natural language processing .

Diving deep into the Prototype Model

Steps taken to develop the machine learning model



Loading and Preprocessing



Exploratory Data Analysis



Data Cleaning & Tag Creation



Recommendation Systems

Packages and Libraries

In this step, we import the necessary libraries and packages that will be used throughout the data processing and analysis workflow. This includes libraries for data manipulation (pandas, numpy), visualization (matplotlib, seaborn), machine learning (sklearn), and others. This step ensures that all required tools are available and ready to be used.

Read in data

Here, we load the dataset into the workspace. This typically involves reading a CSV file or other data format into a DataFrame using pandas. We ensure the data is correctly loaded and ready for preprocessing.

Data Cleaning

In this step, we clean the dataset to ensure it's ready for analysis. This involves handling missing values, removing duplicates, and correcting any inconsistencies in the data. Common techniques include filling missing values with appropriate substitutes, dropping rows or columns with excessive missing data, and standardizing categorical data.

Text Preprocessing

Text data often requires specific preprocessing steps to convert it into a format suitable for analysis. This can include:

- Tokenization: Splitting text into individual words or tokens.
- Removing stop words: Eliminating common words that do not contribute significant meaning (e.g., "and", "the").
- Lemmatization/Stemming: Reducing words to their base or root form.
- Vectorization: Converting text into numerical representations using techniques like TF-IDF.

Collaborative Filtering

This step involves implementing a collaborative filtering technique to recommend products. Collaborative filtering can be user-based or item-based and relies on the assumption that users who agreed in the past will agree in the future. This involves:

- Creating a user-item interaction matrix.
- Calculating similarities between users or items.
- Generating recommendations based on these similarities.

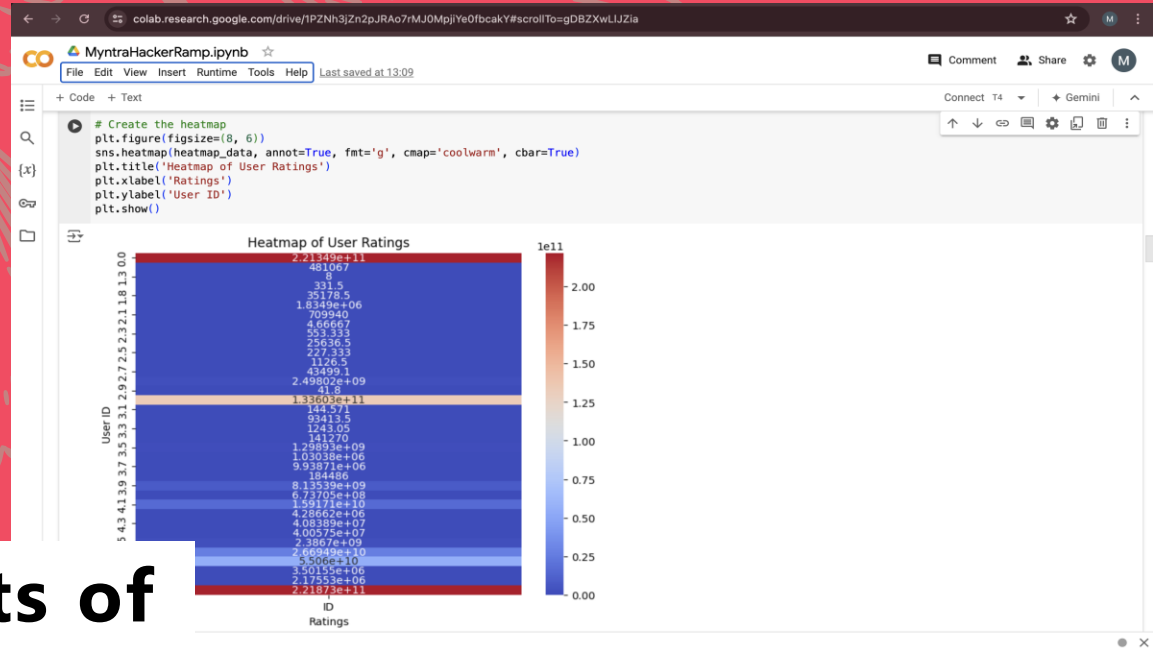
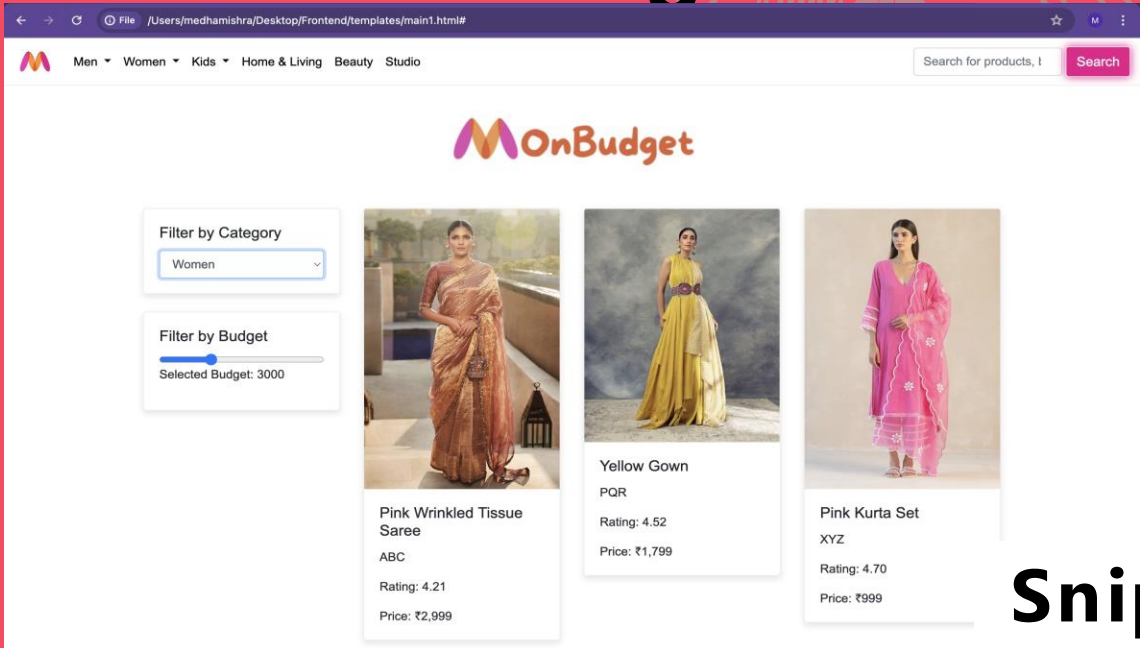
Cosine Similarity

Cosine similarity measures the cosine of the angle between two vectors in a multi-dimensional space, which helps in determining the similarity between products or users in a recommendation system. In this step, we calculate the cosine similarity between items or users to identify similar entities.

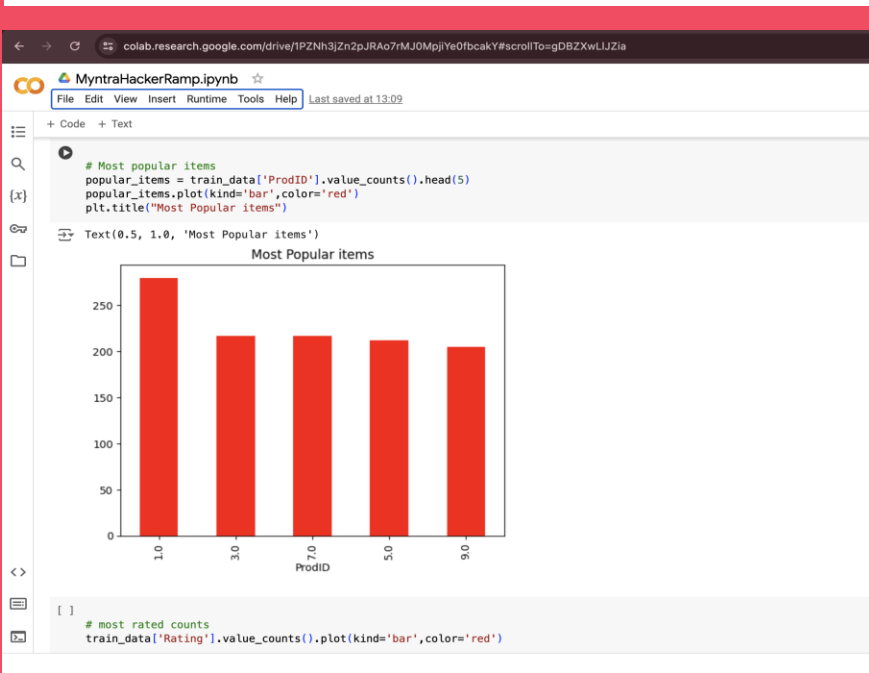
Make Recommendations

Using the calculated similarities and collaborative filtering model, we generate product recommendations for users. This involves:

- Identifying the top-N similar products for a given product or user.
- Filtering recommendations based on user preferences and constraints (e.g., budget, category).
- Ranking the recommendations by similarity scores or other criteria to present the most relevant suggestions.



Snippets of



Rating Base Recommendation System: (Trending Products)

	Name	ReviewCount	Brand	ImageURL	Rating
1686	Electric Shaver, Triple Shaving Time Electric ...	4	moosoo	https://i5.walmartimages.com/asr/e7dcd553-90df...	5
526	Alafia Body Lotion, Vanilla, 32 Oz	2	alafia	https://i5.walmartimages.com/asr/2988c323-cb6f...	5
2053	Gold Bond Ultimate Ultimate Healing Lotion, Al...	2	gold, bond	https://i5.walmartimages.com/asr/34b610e7-05db...	5
4716	Versace Man Eau Fraiche Eau De Toilette Spray...	24	versace	https://i5.walmartimages.com/asr/edaeeed5-9da0...	5
2058	Goldwell StyleSign 1 Flat Marvel Straightening...	2	goldwell	https://i5.walmartimages.com/asr/3b90289-6980...	5
3842	Red Devil 0322 Steel Wool # 00 Very Fine, 8 Pa...	1	red, devil	https://i5.walmartimages.com/asr/60bfe5ba-774c...	5
510	Air Wick Plug In Starter Kit, Warmer + 1 Refill...	1	air, wick	https://i5.walmartimages.com/asr/0fac65b2-c6aa...	5
3841	Recovery Complex Anti-Frizz Shine Serum by Bai...	4	bain, de, terre	https://i5.walmartimages.com/asr/fcd04d2e-3727...	5
2687	Long Aid Extra Dry Formula Curl Activator Gel ...	12	long, aid	https://i5.walmartimages.com/asr/7f729199-bfa5...	5
2062	Good Sense 60-Day Air Care System, Citrus, 2 o...	1	diversey	https://i5.walmartimages.com/asr/025a7068-7bb1...	5



Suggested Future Improvements

- **Dynamic Pricing and Discounts:**
 - **Real-time Offers:** Integrate real-time offers, discounts, and promotions to show users the best possible deals within their budget.
 - **Price Drop Alerts:** Notify users when the price of an item they're interested in drops, helping them stay within budget.
- **Enhanced Filtering and Sorting Options:**
 - **Advanced Filters:** Add more detailed filters for size, color, brand, material, and sustainability features to help users find exactly what they want.
 - **Sorting Preferences:** Allow users to sort by newest arrivals, best-selling items, and highest discounts.
- **Augmented Reality (AR) and Virtual Try-On:**
 - **AR Features:** Implement AR features that allow users to visualize how products like clothing, accessories, and home decor items would look on them or in their space.
 - **Virtual Try-On:** Enable virtual try-on features for fashion and beauty products.
- **Social Integration:**
 - **Social Sharing:** Allow users to share their shopping bags or wishlists on social media to get feedback from friends and family.
 - **Influencer Recommendations:** Integrate recommendations from influencers and fashion experts.
- **Sustainability and Ethical Shopping:**
 - **Eco-friendly Options:** Highlight eco-friendly and sustainable products for environmentally conscious shoppers.
 - **Ethical Brands:** Promote products from ethical brands that focus on fair trade and ethical manufacturing practices.
- **Budget Planning Tools:**
 - **Budget Trackers:** Implement tools that help users track their spending and manage their shopping budget over time.
 - **Savings Goals:** Allow users to set savings goals and receive suggestions on how to achieve them.
- **Voice and Chatbot Assistance:**
 - **Voice Search:** Implement voice search functionality for hands-free browsing.
 - **Chatbot Support:** Provide AI-powered chatbot support to assist users in finding products, answering queries, and offering personalized recommendations.

