

Problem Statement Title: Personalized Product Recommendations

Team Name: 686157-UFP4921C

Team members details

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Batch			

Deliverables/Expectations for Level 2 (Idea + Code Submission)

- The problem statement chosen is **Personalized Recommendation System**
- We have implemented real time recommendation system based on the products visited and bought by the user
- In our project, the different types of recommendation system are used which includes popular visited products, top rated products, category-wise personalized products and also recommending similar bought and visited products by other users
- The deliverables submitted for Level 2 are the code zip file, demo video file and a ppt.

Glossary

• Tech Stack used

Frontend:- React.js, Material UI, CSS

Backend: - Flask, Python

Database:- MongoDB

Use-cases

Login/ Sign Up related Use Case

- For logging in, it is checked whether the user exists or not
- In sign up, before any user is added to the database, it is checked that all the email-ids with which they register are distinct

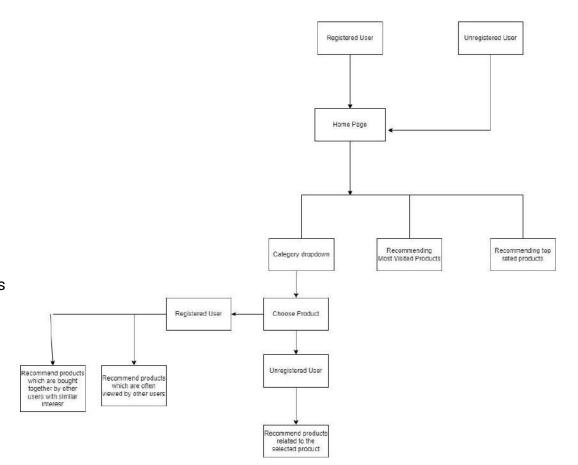
Products related Use Case

- 10 categories of products have been provided on the homepage from where the user can select any of these categories to get the products belonging to the same category.
- For each category, the most relevant recommended products have been displayed.
- In the home page, the most popular products are recommended which is dynamic in nature as well

Solution statement - Block Diagram

 We aim to create an application which includes multiple recommendation systems giving a user fully personalized experience

 The recommendation system which we have considered includes the user interaction, user-preferences in the form of category, user history as well as the ranking and the top-picks have been implemented to give user a real time experience.



Content based filtering

- Our solution uses content based filtering where we used a pre-defined dataset.
- We have divided the items into 10 categories where the products under the specific category will be displayed first.
- On clicking on a specific product, the 10 recommended products of the same category will be displayed which is real time

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# Example: Get recommendations for a specific product
target product id = "7f7036a6d550aaa89d34c77bd39a5e48"
recommended_product_ids = get_recommendations(target_product_id)
# Print recommended products for the target product
print(f"Target Product: (product names.get(target product id, 'Unknown Product'))")
print("Recommended Products:")
for rec id in recommended product ids:
    rec_name = product_names.get(rec_id, 'Unknown Product')
    print(f"(rec id) - (rec name)")
Target Product: FabHomeDecor Fabric Double Sofa Bed
Recommended Products:
8542703ca9e6ebdf6d74263Bdfb1f2ca - FabHomeDecor Fabric Double Sofa Bed
849ab05698081a374215d0b7d18047d0 - FabHomeDecor Fabric Double Sofa Bed
7ee3e337474a29b38cfe1f5d4020d633 - FabHomeDecor Fabric Double Sofa Bed
eae96eb20ef0f1cb1c6897a01906c54c - Living World by Home Stop Solid Nood Display Unit
a439243232d8bacc3fa7f79dbde4ae66 - induscraft Solid Wood Computer Desk
a4e77c9989e9db8a1f952d61ledda8c3 - IBS Plastic Portable Laptop Table
81f305096865f5092608efd7e8005d4a - IBS ADJUSTABLE FOLDING KIDS MATE HOME OFFICE READING WHITING TABLEMATE WITH CUPHOLDER Plastic Portable Laptop Table
d972097a0f51188cac236f70fc2e0bc7 - IBS ADJUSTABLE FOLDING KIDS MATE HOME OFFICE READING WRITING STUDY TABLEMATE WITH CUPHOLDER Plastic Portable Laptop Table
50980caa3af3bd7551b10dcc0086a077 - IBS Plastic Portable Laptop Table
bcd75973860004766a54d258dbeb237a - IBS ADJUSTABLE FOLDING KIDS MATE HOME OFFICE READING
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Collaborative filtering

- User data based recommendation:
- User data is stored in the database and then products are recommended based on the products purchased by the users whose data is getting stored in the database.

User Visited Products: ['c2d766ca982eca8304150849735ffef9']
Recommended Products:
7f7036a6d550aaa89d34c77bd39a5e48 FabHomeDecor Fabric Double Sofa Bed
f449ec65dcbc041b6ae5e6a32717d01b AW Bellies
bc940ea42ee6bef5ac7cea3fb5cfbee7 Sicons All Purpose Arnica Dog Shampoo
29c8d290caa451f97b1c32df64477a2c dilli bazaaar Bellies, Corporate Casuals, Casuals

Ranking and Popular Based Recommendation

- In the Ranking recommendations, the best rated products has been displayed which is in real time
- In popular based recommendations, the most popular products which are the top picks by the user have been shown which is considered whenever a user visits the products

Top Visited Recommendations:
Himmlisch ST381 Magnetic Sun Shade For Maruti Alto
womaniya Alloy Bracelet
Elegance Polyester Multicolor Abstract Eyelet Door Curtain
First Choice Cotton Embroidered Diwan Set
CASEDEAL Microsoft Nokia lumia x2 Back Panel
SANTOSH ROYAL FASHION Cotton Embroidered Diwan Set
Skipper Blends Aqua Striped Eyelet Window Curtain
First Choice Cotton Embroidered Diwan Set
First Choice Cotton Embroidered Diwan Set
AW Bellies

Top Rated Recommendations: Ladela Bellies Bulaky vanity case Jewellery Vanity Case Alisha Solid Women's Cycling Shorts FabHomeDecor Fabric Double Sofa Bed AW Bellies Alisha Solid Women's Cycling Shorts Sicons All Purpose Arnica Dog Shampoo Eternal Gandhi Super Series Crystal Paper Weights with Silver Finish Alisha Solid Women's Cycling Shorts FabHomeDecor Fabric Double Sofa Bed

Limitations

- The total products considered for the project is around 5000 which can be increased by taking more products.
- The efficiency of the recommended algorithms used can be improved or greater efficiency machine learning algorithms can be used for recommendation

Future Scope

- Personalized recommendation with chatbot
- Take more products into consideration which would allow the user to select from more options
- Add recommendations based on the month and festivities that is time of purchase



Thank You

