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Project Proposal

Submitted to: Sir Zain Ul Hassan

Course Code: CS-4053

Course Name: Recommender Systems

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Introduction

We propose a recommender system for Amazon products that leverages user interactions and product metadata to recommend similar items, improving user experience and sales efficiency.

Dataset

Title: ***Amazon Sales Dataset***
Source: Kaggle

Useful Columns:

- Product Features: product_id, category, about_product, rating, discounted_price

- User Interactions: user_id, review_content (implicit feedback via reviews)

Ratings

- **Implicit feedback**: User interactions (purchases, views) and product popularity. Sentiment Scoring can be done on **review_content** column to gauge satisfaction.

- **Explicit features**: Product category, price, and metadata (e.g., brand, description).

Techniques

1. **Content-Based Filtering**: By Calculating similarity between products using TF-IDF and cosine similarity on textual features (e.g., product descriptions). (Not Completely Sure)

2. **Item-Based Collaborative Filtering**: Identify "Users who bought X also bought Y" patterns from purchase history.

3. **Hybrid Model**: Combine content-based and collaborative filtering to balance accuracy and explainability.

Undertaking

We pledge to uphold academic integrity and refrain from any dishonest practices throughout this project.