Personalized Recommendation System

Project Goals

This project aims to develop a **Personalized Recommendation System** that helps users discover relevant content or products based on their interests. The system leverages **data analysis** and **recommendation algorithms** such as **Collaborative Filtering** and **Content-Based Filtering** to provide accurate suggestions.

Main Objectives:

- Enhance user experience with personalized recommendations.
- Address the **cold start problem** by analyzing data more effectively.
- Ensure scalability using **cloud services** for fast and reliable performance.
- Implement AI techniques to improve recommendation accuracy.
- Design a user-friendly interface for both web and mobile applications.

Project Plan

Week 1: Planning and Data Preparation

- **Tasks:** Define project goals, gather user interaction data, and preprocess it for modeling.
- **Deliverables:** Project scope document, cleaned dataset.
- **Team Responsibilities:**
    - **Hazem Khairy & Wafaey Khaled:** Define project goals and structure.
    - **Ahmed Mahmoud & Fatma Mahmoud:** Collect user interaction data.
    - **Sabrine Nasser & Maryam Mahmoud:** Preprocess and clean the dataset.

Week 2: System Design and Initial Model Development

- **Tasks:** Define system architecture, implement collaborative and content-based filtering models.
- **Deliverables:** Basic recommendation models and initial performance evaluation.
- **Team Responsibilities:**

- **Hazem Khairy & Wafaey Khaled:** Define the system architecture.

- **Ahmed Mahmoud & Fatma Mahmoud:** Implement collaborative filtering models.

- **Sabrine Nasser & Maryam Mahmoud:** Implement content-based filtering models.

Week 3: Enhancements and Deployment Setup

- **Tasks:** Improve recommendation algorithms, integrate cloud deployment for scalability.

- **Deliverables:** Optimized recommendation system, cloud-based deployment setup.

- **Team Responsibilities:**

  - **Hazem Khairy & Wafaey Khaled:** Optimize algorithms and improve model accuracy.

  - **Ahmed Mahmoud & Fatma Mahmoud:** Work on cloud deployment setup.

  - **Sabrine Nasser & Maryam Mahmoud:** Ensure system integration and performance testing.

Week 4: Testing, Evaluation, and Final Presentation

- **Tasks:** Conduct system testing, refine recommendations, prepare final documentation and presentation.

- **Deliverables:** Fully functional system, final report, and presentation.

- **Team Responsibilities:**

  - **Hazem Khairy & Wafaey Khaled:** Lead final system evaluation and debugging.

  - **Ahmed Mahmoud & Fatma Mahmoud:** Work on refining recommendation outputs.

  - **Sabrine Nasser & Maryam Mahmoud:** Prepare final documentation and presentation materials.