

## **Final Year Project 1**

**Coordinator: Dr.Aarij Mahmood Hussaan**

**Project Title: Universal Recommendation System**

**Supervisor: Rukhsana Majeed**

### **Fyp Group 1**

#### **Group Members:**

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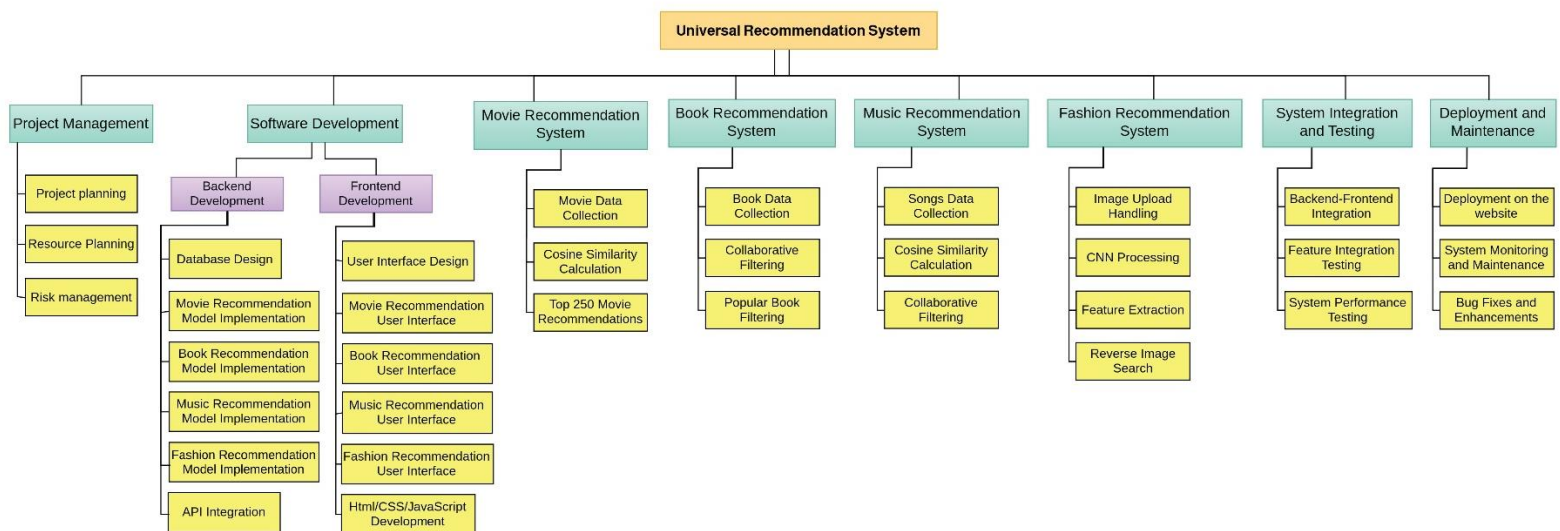
#### **Functional Requirements:**

- The system recommends movies similar to the input movie using content-based filtering.
- An updated list of the top 250 movies, ranked according to user ratings and obtained via an API, is displayed by the system.
- The book recommendation system should be able to provide users with book recommendations based on their input book name.
- Only books that have received at least 250 votes from users in the dataset are considered by the book recommendation system.
- The music recommendation system should compute the similarity between a user's musical taste and other users' preferences using cosine similarity as the similarity metric.
- To suggest new songs to users based on their past behavior and preferences, the music recommendation system uses collaborative filtering.
- The fashion recommendation system should be able to recommend visually similar products to the user based on their uploaded image.
- By analyzing uploaded images, the fashion recommendation system suggests visually similar products to users, utilizing deep learning CNN.
- A maximum of five visually similar products to the user's uploaded image is recommended by the fashion recommendation system.

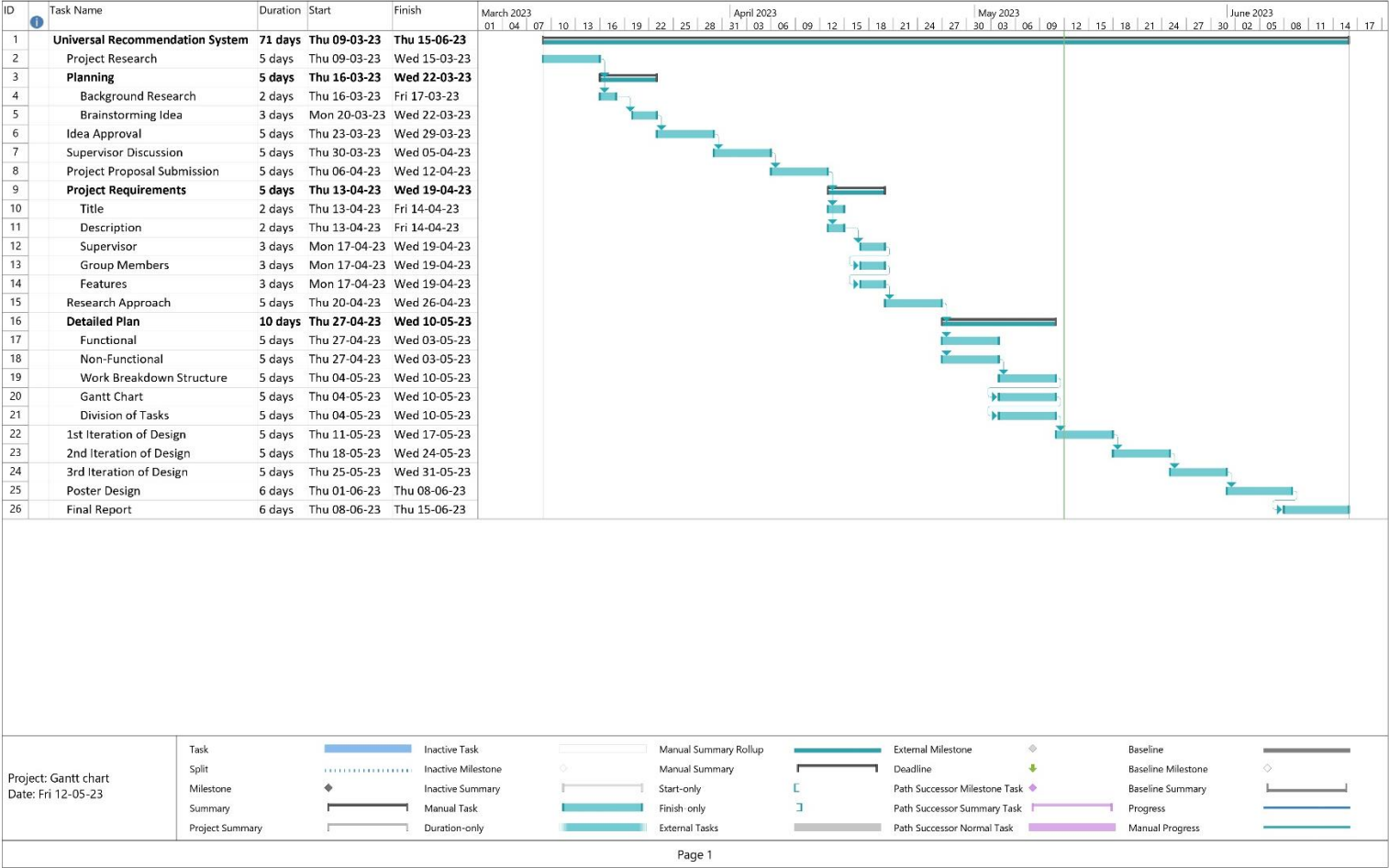
## Non-Functional Requirements:

- The system should be highly personalized and provide recommendations based on individual preferences and behavior.
- The system has the ability to handle a large user base and is designed to be scalable.
- The system should establish a direct connection with the dataset through API and synchronize the data in real-time. This ensures that the system always has the most up-to-date information, allowing for accurate and personalized recommendations for users.
- A user-friendly interface is provided by the system to ensure ease of use and a superior user experience.
- The system should provide recommendations quickly and efficiently.

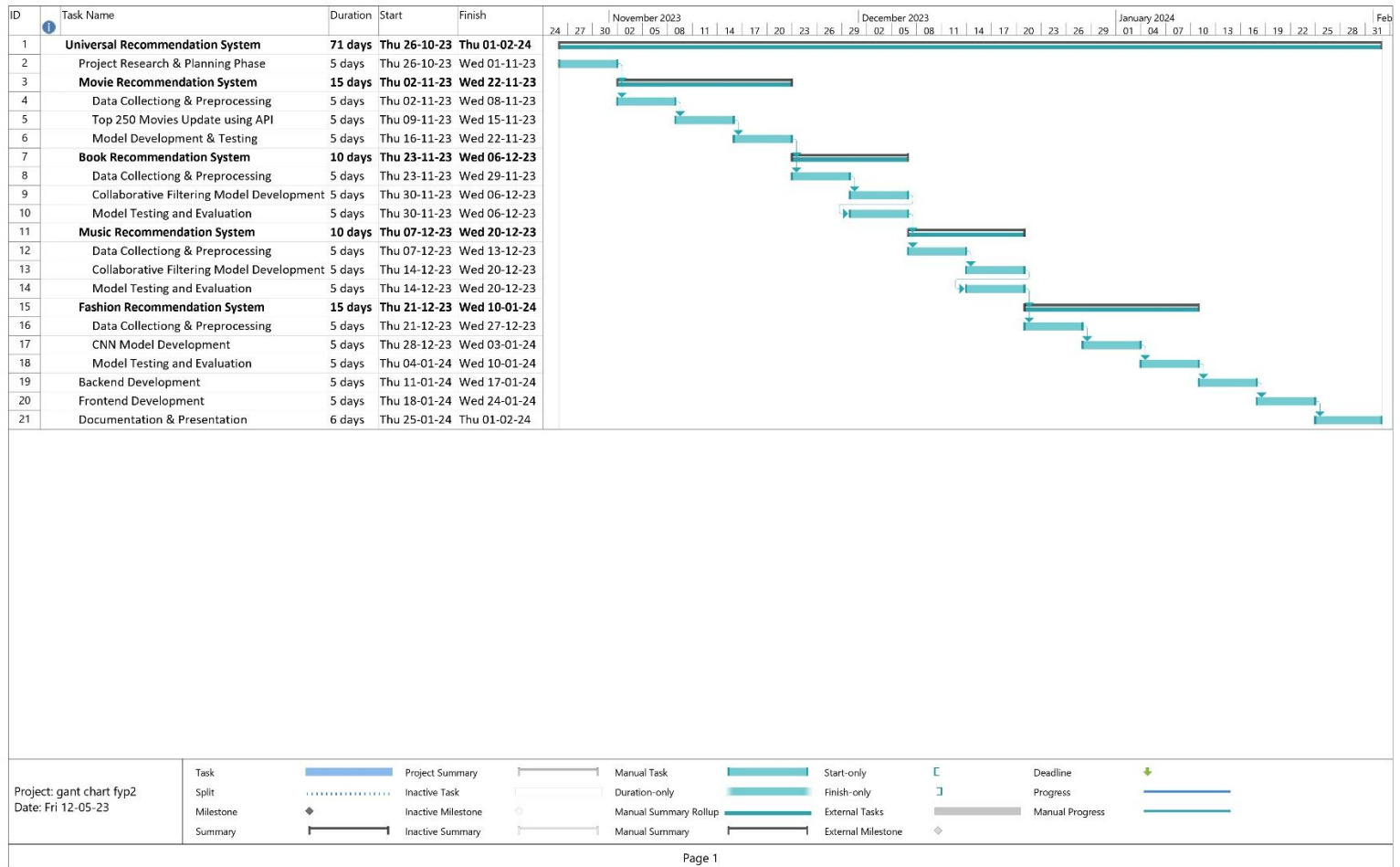
## Work Breakdown Structure (WBS):



Gantt Chart FYP 1:



## Gantt Chart FYP 2:



## Division of Tasks:

### **Muhammad Ali Ammar Naseer (54353) (Group Leader)**

- Responsible for leading and managing the group.
- Coordinates with the supervisor and the coordinator.
- Work on the music recommendation system, including data collection and preprocessing.
- Develops the code for collaborative filtering using cosine similarity.
- Computes the similarity between a user's musical taste and other users' preferences.
- Scores each candidate song based on how similar it is to the user's preference vector.
- Testing and debugging the music recommendation system.

**Hassaan Ahmed (60211)**

- Work on the content-based movie recommendation system, including data collection, data preprocessing, and vector representation of movies.
- Develops the code to represent each movie as a vector.
- Implement the cosine similarity algorithm for finding similar movies based on their attributes.
- Work on updating the Top 250 movies rating using an API and retraining the model.
- Testing and debugging the book recommendation system.

**Hafsa Amin (60209)**

- Work on the fashion recommendation system based on deep learning CNN, including data collection and preprocessing.
- Implement the code for the reverse image search approach using convolutional neural networks.
- Ensure that the system accurately identifies the features and patterns in the user's uploaded image.
- Recommend visually similar products to the user and work on testing and evaluating the fashion recommendation system.
- Testing and debugging the fashion recommendation system.

**Abdul Moiz (54357)**

- Work on the book recommendation system, including data collection and preprocessing.
- Develops the code for collaborative filtering to recommend books.
- Filters out unpopular books from the dataset to ensure quality recommendations.
- Works on retraining the model to predict new book ratings.

**All students will also contribute to the following:**

- Work on the integration of the four recommendation systems into a single website.
- Writing the system's backend code using Python, Django, and Flask.
- Writing the system's frontend code using HTML and CSS.
- Testing and debugging the system.
- Prepare and deliver presentations on the progress of the project to the supervisor and coordinator.

Overall, the group leader will ensure that all members are working effectively and communicate regularly with the supervisor and the coordinator to ensure that the project meets the desired outcomes.