Final Year Project 1

Coordinator: Dr.Aarij Mahmood Hussaan

Project Title: Universal Recommendation System

Supervisor: Rukhsana Majeed

Fyp Group 1

Group Members:

Muhammad Ali Ammar Naseer (54353) (Leader)
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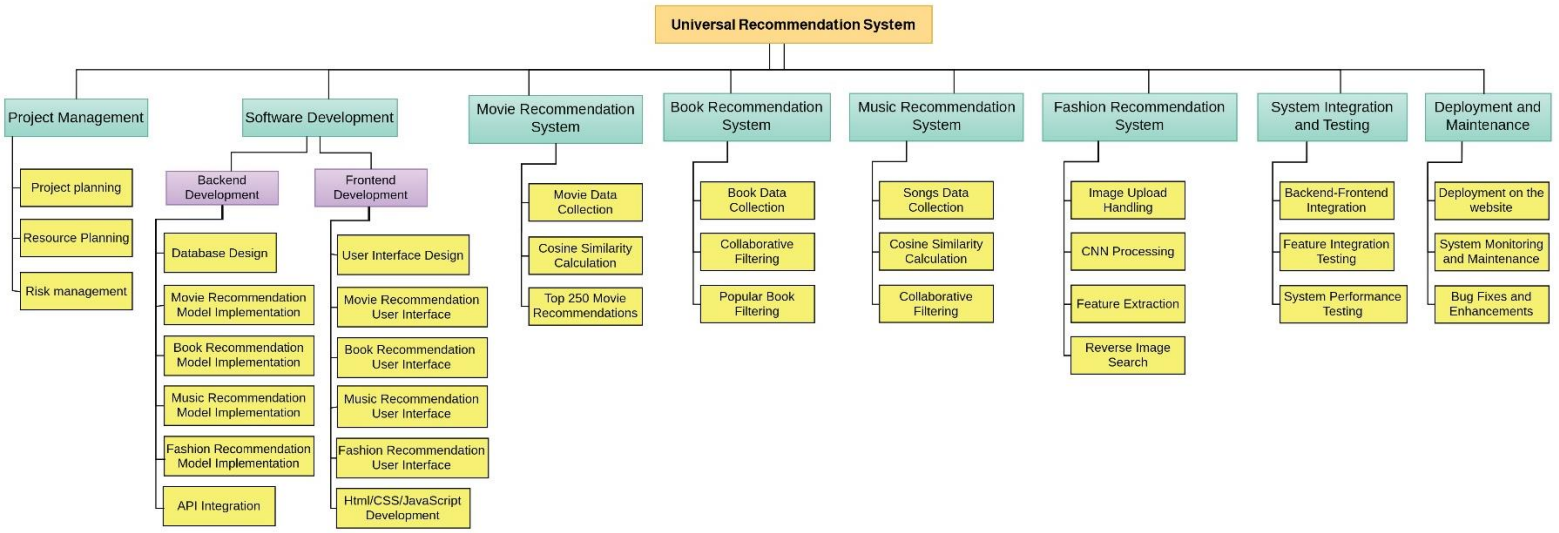
Functional Requirements:

- The system recommends movies like 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:

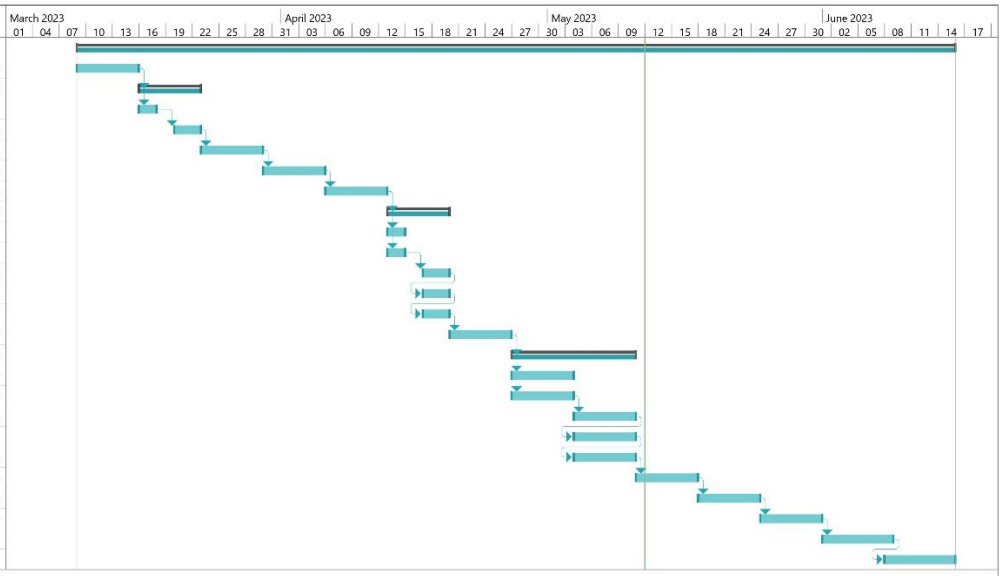
- The system should be highly personalized and provide recommendations based onindividual preferences and behavior.
- The system has the ability to handle a large user base and is designed to be scalable.
- Frequent updates to movie data can be accommodated by the system, which can beretrained as needed.
- A user-friendly interface is provided by the system to ensure ease of use and superioruser experience.
- The system should provide recommendations quickly and efficiently.

Work Breakdown Structure (WBS):



Gantt Chart FYP 1:

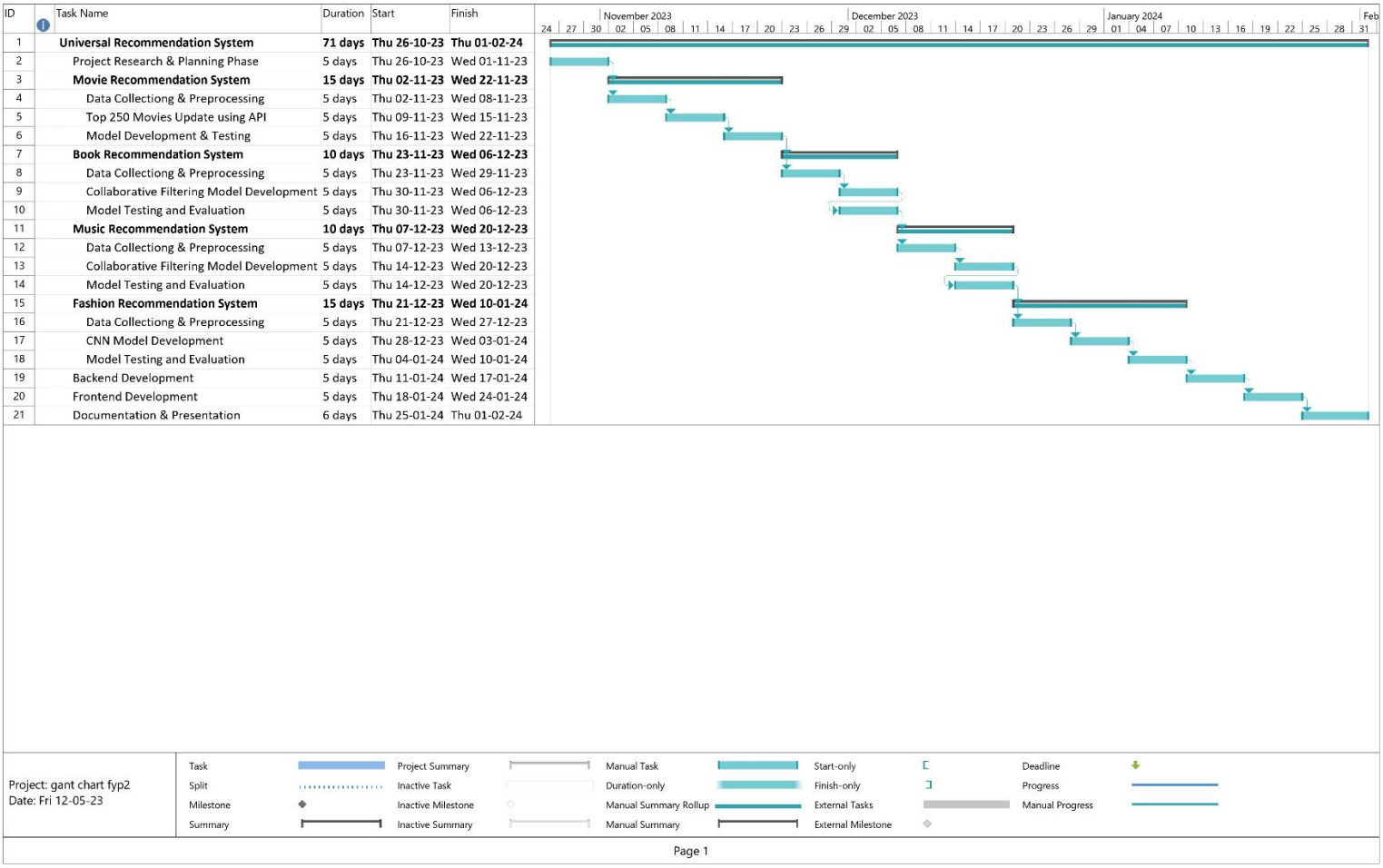
ID	Task Name	Duration	Start	Finish
1	**Universal Recommendation System**	**71 days**	**Thu 09-03-23**	**Thu 15-06-23**
2	Project Research	5 days	Thu 09-03-23	Wed 15-03-23
3	**Planning**	**5 days**	**Thu 16-03-23**	**Wed 22-03-23**
4	Background Research	2 days	Thu 16-03-23	Fri 17-03-23
5	Brainstorming Idea	3 days	Mon 20-03-23	Wed 22-03-23
6	Idea Approval	5 days	Thu 23-03-23	Wed 29-03-23
7	Supervisor Discussion	5 days	Thu 30-03-23	Wed 05-04-23
8	Project Proposal Submission	5 days	Thu 06-04-23	Wed 12-04-23
9	**Project Requirements**	**5 days**	**Thu 13-04-23**	**Wed 19-04-23**
10	Title	2 days	Thu 13-04-23	Fri 14-04-23
11	Description	2 days	Thu 13-04-23	Fri 14-04-23
12	Supervisor	3 days	Mon 17-04-23	Wed 19-04-23
13	Group Members	3 days	Mon 17-04-23	Wed 19-04-23
14	Features	3 days	Mon 17-04-23	Wed 19-04-23
15	Research Approach	5 days	Thu 20-04-23	Wed 26-04-23
16	**Detailed Plan**	**10 days**	**Thu 27-04-23**	**Wed 10-05-23**
17	Functional	5 days	Thu 27-04-23	Wed 03-05-23
18	Non-Functional	5 days	Thu 27-04-23	Wed 03-05-23
19	Work Breakdown Structure	5 days	Thu 04-05-23	Wed 10-05-23
20	Gantt Chart	5 days	Thu 04-05-23	Wed 10-05-23
21	Division of Tasks	5 days	Thu 04-05-23	Wed 10-05-23
22	1st Iteration of Design	5 days	Thu 11-05-23	Wed 17-05-23
23	2nd Iteration of Design	5 days	Thu 18-05-23	Wed 24-05-23
24	3rd Iteration of Design	5 days	Thu 25-05-23	Wed 31-05-23
25	Poster Design	6 days	Thu 01-06-23	Thu 08-06-23
26	Final Report	6 days	Thu 08-06-23	Thu 15-06-23



Project: Gantt chart
Date: Fri 12-05-23

Task	Inactive Task	Manual Summary Rollup	External Milestone		Baseline		
Split	Inactive Milestone	Manual Summary	Deadline		Baseline Milestone		
Milestone	Inactive Summary	Start-only	Path Successor Milestone Task		Baseline Summary		
Summary	Manual Task	Finish-only	Path Successor Summary Task		Progress		
Project Summary	Duration-only	External Tasks	Path Successor Normal Task		Manual Progress		

Gantt Chart FYP 2:



ID	Task Name	Duration	Start	Finish
1	**Universal Recommendation System**	**71 days**	**Thu 26-10-23**	**Thu 01-02-24**
2	Project Research & Planning Phase	5 days	Thu 26-10-23	Wed 01-11-23
3	**Movie Recommendation System**	**15 days**	**Thu 02-11-23**	**Wed 22-11-23**
4	Data Collectiong & Preprocessing	5 days	Thu 02-11-23	Wed 08-11-23
5	Top 250 Movies Update using API	5 days	Thu 09-11-23	Wed 15-11-23
6	Model Development & Testing	5 days	Thu 16-11-23	Wed 22-11-23
7	**Book Recommendation System**	**10 days**	**Thu 23-11-23**	**Wed 06-12-23**
8	Data Collectiong & Preprocessing	5 days	Thu 23-11-23	Wed 29-11-23
9	Collaborative Filtering Model Development	5 days	Thu 30-11-23	Wed 06-12-23
10	Model Testing and Evaluation	5 days	Thu 30-11-23	Wed 06-12-23
11	**Music Recommendation System**	**10 days**	**Thu 07-12-23**	**Wed 20-12-23**
12	Data Collectiong & Preprocessing	5 days	Thu 07-12-23	Wed 13-12-23
13	Collaborative Filtering Model Development	5 days	Thu 14-12-23	Wed 20-12-23
14	Model Testing and Evaluation	5 days	Thu 14-12-23	Wed 20-12-23
15	**Fashion Recommendation System**	**15 days**	**Thu 21-12-23**	**Wed 10-01-24**
16	Data Collectiong & Preprocessing	5 days	Thu 21-12-23	Wed 27-12-23
17	CNN Model Development	5 days	Thu 28-12-23	Wed 03-01-24
18	Model Testing and Evaluation	5 days	Thu 04-01-24	Wed 10-01-24
19	Backend Development	5 days	Thu 11-01-24	Wed 17-01-24
20	Frontend Development	5 days	Thu 18-01-24	Wed 24-01-24
21	Documentation & Presentation	6 days	Thu 25-01-24	Thu 01-02-24

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.