IT3041 - IRWA Mid Examination 2023

Take-Home Assignment

- You must create a group with 4 members.
- You must submit a complete report about your system.
- All the python codes should be submitted.
- Evaluation will be done in a viva.
- You have two options. Select one option and create the required system.
- Deadline – **25th of October 2023**
- Viva will be scheduled on **26th of October 2023**

Option 01 – Chatbot

Development of a Chatbot for Online Customer Support in E-commerce

In this option, you are tasked with creating an intelligent and interactive chatbot to enhance online customer support services for an e-commerce platform. Imagine you are working with a leading online retailer, and your goal is to design a chatbot that provides seamless assistance to customers during their shopping experience. The chatbot should be capable of handling a wide range of customer inquiries, including product recommendations, order tracking, and general queries about products and services.

Requirements:

- Implement NLP algorithms to enable the chatbot to understand and process user queries effectively.
- Design a robust dialog management system that ensures coherent and contextually relevant conversations with users.
- Integrate the chatbot with the e-commerce platform's database to provide accurate information about products, prices, availability, and promotions.
- Create a user-friendly interface and ensure the chatbot provides a positive and personalized experience to customers.
- Implement error handling mechanisms to gracefully manage situations where the chatbot cannot fulfill a user's request.

Evaluations will be based on:

- How well does the chatbot understand and respond to user queries?
- Does the chatbot effectively assist users with their inquiries?
- Is the chatbot interface intuitive and engaging for users?
- How does the chatbot handle situations where it cannot provide a satisfactory response?

Option 02 – Recommendation Engine

Building a Personalized Movie Recommendation Engine for Streaming Platform

In this option, your task is to design and implement a personalized movie recommendation engine for a popular streaming platform. Imagine you are working with a leading entertainment service, and your goal is to enhance user engagement by providing tailored movie suggestions to subscribers. The recommendation engine should analyze users' viewing history, preferences, and behavior to generate accurate and appealing movie recommendations.

Requirements:

- Gather a diverse dataset of movies, including genres, ratings, and user reviews, to create a comprehensive database.
- Implement collaborative filtering or content-based recommendation algorithms to analyze user behavior and movie attributes, generating personalized recommendations.
- Develop an intuitive and user-friendly interface where users can receive movie recommendations and provide feedback on suggested movies.
- Ensure the recommendation engine accounts for individual user preferences, considering factors like genre preferences, watch history, and user ratings.
- Implement evaluation metrics to assess the accuracy and effectiveness of the recommendation engine, such as precision, recall, and user satisfaction surveys.

Evaluations will be based on:

- How precise and relevant are the movie recommendations provided by the engine?
- Does the recommendation engine increase user engagement and interaction with the streaming platform?
- How well are recommendation algorithms applied and optimized for personalized suggestions?
- Is the user interface intuitive, allowing users to easily understand and interact with the recommendation system?