Advanced Software Engineering CS5130-001 | **Preliminary Project Proposal**
"Leveraging Large Language Models in Software Engineering to Summarize Professor Ratings"

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Introduction
This project aims to streamline the process of professor selection for students by using an automated system to collect, summarize, and analyze user comments from platforms like Rate My Professor. Our approach leverages natural language processing (NLP) techniques and classifier models to provide students with a more nuanced understanding of professor ratings, categorizing feedback to identify trends and recommend professors based on course expectations and teaching quality.

Motivation
Course selection is often challenging for students, as professor ratings are numerous, subjective, and scattered across various platforms. Manually analyzing these ratings to identify trends and filter useful insights is time-consuming. By automating the collection and classification of comments, our project can help students make more informed choices about professors and classes, thus improving their overall educational experience.

Problem Statement
Current professor rating platforms lack automated analysis tools to summarize and classify user feedback. Students are forced to read through multiple comments to gather insights into a professor's teaching style and course structure, making it difficult to draw objective conclusions. This project addresses the need for a systematic approach to evaluate and categorize user comments to highlight positive and negative aspects, enhancing students' decision-making in course selection.

Proposed Work

- Develop a script to automatically collect user comments from Rate My Professor.
- Implement an NLP model to summarize key insights from collected comments.
- Build a classifier to identify and categorize negative, neutral, and positive comments.
- Create an algorithm that suggests professors based on aggregated feedback and a student's preferences.

Evaluation Plan

- **Effectiveness Metrics:** Measure the accuracy of comment classification and the relevance of summarized feedback.
- **User Testing:** Survey students to gauge the usefulness and reliability of recommendations.
- **Comparative Analysis:** Compare the results of the automated recommendation system with manual reviews to highlight improvements in time efficiency and insight quality.

Feasibility

The project is feasible within the given timeline. We will utilize pre-trained NLP models and readily available machine-learning libraries for implementation, allowing us to focus on integrating and testing the system. Each milestone will contribute incrementally to the final deliverable.