Proposal for Project: Interactive Study Planner

Team Details:

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Project Topic: Interactive Study Planner

Relevance:

In the age of online learning, students are often overwhelmed with the sheer volume of content available. Without a structured plan, it can be easy to fall behind or not allocate study time efficiently. Our solution is to create an interactive study planner that adjusts in real-time to a student's progress and performance. This relates to the theme as it involves analyzing textual content and integrates with class as we're dealing with learning management systems and using data to improve learning outcomes.

Datasets, Algorithms, or Techniques:

1. **Datasets:** Course content and metadata from platforms like Coursera. This includes textual content, video durations, quiz/test structures, and more.
2. **Algorithms:** Natural Language Processing to analyze course content and predict study time required. Machine Learning algorithms to predict student's performance based on their progress and adjust the plan.
3. **Techniques:** Text Mining to extract relevant information from course materials. Data visualization to represent study plans and progress graphically.

Validation of Approach:

We'll use Python, given its extensive libraries for data analysis and machine learning.

1. **Pilot Testing:** Implement our planner for a single course and gather feedback from students.
2. **Comparative Analysis**: Compare our dynamic study planner against static study plans to see how students fare in terms of scores and course completion.
3. **Performance Metrics**: Use metrics such as Mean Absolute Error to measure the accuracy of our performance predictions.

Workload Justification:

Given there are 4 members, our project should equate to at least 80 hours.

1. **Data Collection & Preprocessing (20 hours):** Extracting and cleaning data from platforms.
2. **Algorithm Development (25 hours):** Developing and tuning our prediction models.
3. **Integration with LMS (15 hours):** Ensuring our planner can seamlessly integrate with platforms like Coursera.
4. **User Interface Development (10 hours):** Designing an intuitive UI for students.
5. **Testing and Feedback Loop (10 hours):** Testing our planner and refining based on feedback.

Final Deliverables:

1. **Documented Source Code:** Clean, well-commented code that details our implementation.
2. **Demo:** A live demo showing our planner in action. We will compare our dynamic planner's recommendations with static study plans to highlight its efficacy. If our implementation shows improvement over existing methods, we will highlight it. If not, we'll delve into areas of improvement and potential reasons for the same.

We believe our Interactive Study Planner can revolutionize the way students approach online learning, making education more adaptive and efficient.