Students' Learning Resources for Organic Chemistry at Dickinson College

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Introduction

The study analyze resources available to students enrolled in organic chemistry courses at Dickinson College. This research aims to provide valuable insights into the effectiveness of these resources, thereby offering professors and students with valuable information to enhance the learning experience. Faculty members can utilize the insights gained to refine their teaching methodologies and incorporate more effective resources into their curriculum. Students themselves stand to benefit greatly, as they gain access to a comprehensive analysis of available resources, enabling them to make informed decisions about their learning approach and maximize their academic success. Additionally, by evaluating the accessibility and inclusivity of learning resources, this project also contributes to fostering a more equitable educational environment.

The output of this project is expected to be a user-friendly dashboard which takes consumers' picture of the "ingredient table" then provides consumers with easy-to-read hazard information of the chemical ingredients in products.

Data

Following data might be collected.

- Collect **course syllabus** from organic chemistry course offered at Dickinson College.
- Request to access to **Moodle page** of the course to gather information about additional resources provided to students, such as lecture notes, practice problems, videos, and interactive simulations.
- Conduct **surveys among students** enrolled in organic chemistry courses to gather feedback on the effectiveness and accessibility of various learning resources. Questions could include rating the usefulness of textbooks, online resources, laboratory manuals, and any other materials provided by the instructors.
- **Interview faculty members** teaching organic chemistry courses to understand their perspectives on the selection and utilization of learning resources.

Methodology

- **Exploratory Data Analysis (EDA):** Explore the collected data and identify patterns, trends, and correlations among different learning resources and student outcomes.
- **Natural Language Processing (NLP):** Apply NLP techniques to analyze qualitative data, such as student feedback from surveys or faculty interviews. Use sentiment analysis to assess the sentiment of student comments regarding the usefulness and accessibility of learning resources