CourseRec

Team: Group 26
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1. Problem Statement

A common problem that students face is finding classes which align with their interests. Our platform will assist in the selection of courses which are best tailored to the students interests, which leads to enjoyment and academic success. Our idea is to approach this problem from a student's perspective rather than from a university's perspective, such as MyPurduePlan. Our platform will provide a "human" element to help students take "better-fitting" classes instead of only displaying degree requirements to satisfy the course requirements.

2. Background Information

- The product stems from the team's personal experiences and that of other students of taking classes which we were not interested in taking which would lead to unsatisfactory performance in the course. The domain of this product is in the field of education and target audience is purdue students in CS.
- Similar platforms to our web application are MyPurduePlan and Purdue Reddit. We thought of these as similar products because both of these tools are used by Purdue students to gather and organize information regarding current courses.
- The limitation of myPurdue is that it doesn't provide tailored information for the particular student. It also focus more degree requirement completion, rather than what class the student would enjoy doing. We will address this limitation by having an intelligent recommendation system, which is paired along with rating from other students to recommend better classes to the students. Another source that students get information about a course from their peers is reddit. The limitation of this is that it is unstructured and not tailored to that student.

3. Requirements (Backlog)

Functional:

1. As a user, I would like to create an account.
2. As a user, I would like to use my social accounts to sign up. (If time permits)
3. As a user, I would like to create a handle for my account. (If time permits)
4. As a user, I would like two factor authentication.
5. As a user, I would like to input the classes I have previously taken
6. As a user, I would like to view my profile information.
7. As a user, I would like to upload a profile picture.
8. As a user, I would like to view the list of different courses
9. As a user, I would like to sort the list of courses
10. As a user, I would like to view the courses of different degree requirements
11. As a user, I would like to see if a course is recommended or not
12. As a user, I would like to see a recommendation score for each course
13. As a developer, I would like to calculate the recommendation score for each course
14. As a user, I would like to see improved recommendation after using the platform for some time.
15. As a user, I would like to get a predicted grade for a specific course.
16. As a user, I would like to see how others have upvoted the class.
17. As a user, I would like to sort according to the upvoted of the class.
18. As a user, I would like to differentiate the recommended courses according to the degree requirements.
19. As a user, I would like to view a recommended course list without inputting my own data.
20. As a user, I would like to get specific course information.
21. As a user, I would like to get course timings for the course for specific semesters.
22. As a user, I would like to post a comment for a specific course.
23. As a user, I would like to get recommended professors for the specific course.
24. As a user, I would like to view other student's comments for a specific course.
25. As a user, I would like to search courses. (If time permits)
26. As a user, I would like to view courses from other majors.
27. As a user, I would like to be able to contact the webmaster to report bugs.
28. As a user, I would like to share the specific course information with peers.
29. As a user I would like to communicate with other students taking the specific course.
30. As a user, I would like a conversational UI to communicate with the recommendation system. (If time permits)
31. As a user, I would like to see push notification for comments on recommended course. (If time permits)

Non-Functional

Architecture and Performance

We intend our application to work with Google Chrome and other modern browsers. The app will use industry standard authentication practices like two factor authentication and sign up using social networks. The frontend will be built with user experience in mind and will use React.js framework to build an interactive and stable UI. The app will also use a scalable implementation by hosting the front end using Python/Flask. The app will also use a REST API to query the database for data and reduce response time.The app shall use a relational database such as MySQL. Common code styling practices will be used across the code base. We would track the performance of the application and log errors to ensure robust backend performance.Github will be used as version control.

Usability

Our intention for the user interface is for it to be as streamlined and intuitive as possible. Given the many features, it's important that the user interface is well designed so the user can come gather information and analyse and makes decision regarding the courses that they take. Courses are pulled from a database for classification and ranking. The application should be able to train and provide a rank for the courses the user is most likely to succeed in, rating them between least likely and highly likely to succeed. The application would decide between the rank based on a set criteria. The recommendation system would improve as the user inputs more courses taken, and would over time be able to aptly classify and rank the available courses.