CS 411 Group 116 Project – Stage 1

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1. *Title*: UIUC Class of the Day
2. *Project Summary*:

   Each day, a random UIUC class will be selected as the 'class of the day'. Users will be able to guess different courses from the university until they get it right. After each incorrect guess, the app will reveal what was right and what was wrong with the guess. For example, the guess might have the correct department but the wrong amount of credits, a lower course number, or different general education categories. Once the user has successfully guessed the class of the day, a summary of the class will be displayed so that users can learn more about the wide variety of offerings on campus.

   Additionally, we will implement an endless mode where users can continue to guess random classes after they have correctly identified the class of the day. Users who create an account will be able to see statistics on their guesses, like their average number of guesses or most guessed class. Account holders might also be able to save their favorite courses or track their guessing streaks to encourage long-term engagement.

3. *Description of application*:

   Our application will bring students together as they try to get the class of the day in the fewest number of guesses. Over the course of weeks, they will also learn more about the many classes on campus. Additionally, just imagine how excited a student or professor might be when they get the class of the day in just one guess because they happened to be in that class and decided to guess it. Overall, we think our project will be a lot of fun for students on campus and will broaden their horizons.

   Not only will this project allow for there to be a stronger sense of a community, but it will foster competition, conversations, and celebration of getting the answer right. There will be learning in regards to different courses. This application will also promote curiosity as students learn about classes they may have never heard of before. By having daily challenges, this game allows for students to become more engaged on campus and see what the school has to offer. It is a great exploration and learning experience.

4. The creative component of our project is the game itself. It is a unique way to use course data that will be engaging to users. It will also be technically challenging because we will have to make the user interface easy to interact with while also providing correct information after each guess. This will be difficult, but we believe we can achieve a high-quality result.

We will need to implement advanced real-time data analysis in order to provide the user with smart hints based on their guesses. We will be implementing APIs to be able to pull these real-time course updates. Additionally, we will need to be able to hold account data for users, to provide features such as their answer streak and saved favorite course.

5. *Usefulness:*

   Our application provides a fun, engaging, and educational experience for both current and prospective U of I students by allowing them to make guesses until they correctly identify the class of the day. The app serves as both entertainment and a learning tool, especially for those who are new to the university (such as freshmen or transfer students). By offering hints after each incorrect guess, the users gain more information in the wide variety of courses at UIUC.

   There are other existing guessing game or trivia applications that have a similar hint-based format, such as *The New York Times* online games. However, our application is unique because we haven't come across any application like this for college campuses or higher education courses specifically. Additionally, there aren't many existing game-like or entertaining applications regarding course offerings at UIUC.

6. *Realness:*

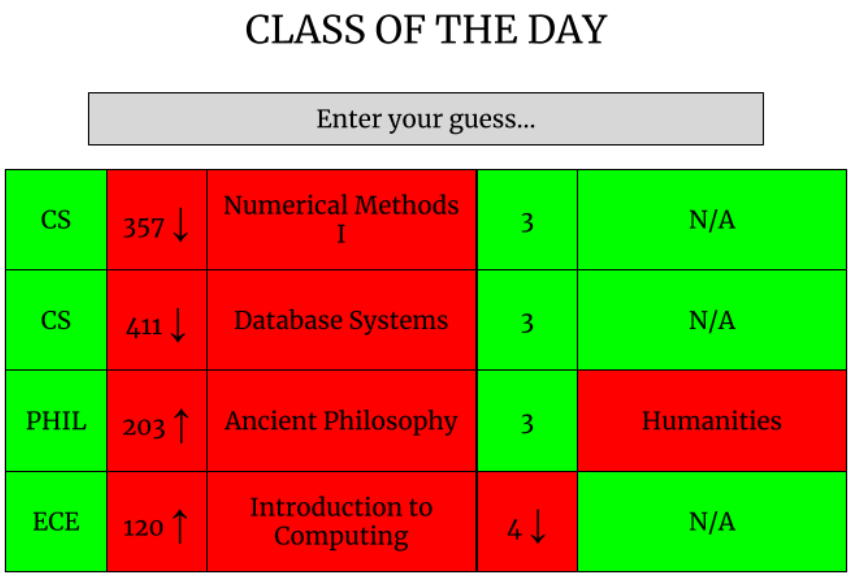
   The dataset that we chose is the course catalog of UIUC for 2024. It is the 8,589 sections that UIUC offers in regards to courses for the Fall semester of 2024. This dataset is organized into a csv file. Coming from the Data Science Discovery website for STAT/CS/IS 107. The link to the dataset is the following - https://waf.cs.illinois.edu/discovery/course-catalog.csv. This dataset is a well formatted CSV, having column names in the first row of the dataset. This dataset has 8589 rows and 10 columns. The data source captures information about the year that the course was offered, the term that the course was offered, a combination of the year and term, the subject of the course, number of the course, description about the course, credit hours pertaining to the course, course section information, and how it fulfills general educational requirements. The cardinality of each column is as follows: Year is 1, Term is 1, YearTerm is 1, Subject is 184, Number is 611, Name is 3599, Description is 4445, Credit Hours is 63, Section Info is 3394, Degree Attributes is 43, Schedule Information is 208, CRN is 12254, Section is 2463, Status Code is 2, Part of Term is 4, Section Title is 1014, Section Credit Hours is 13, Section Status is 2, Enrollment Status is 5, Type is 21, Type Code is 100, Start Time is 39, End Time is 94, Days of Week is 28, Room is 554, Building is 112, and Instructors is 4491.

   The second dataset we chose is the 'GPAs for courses at The University of Illinois', also from the Data Science Discovery website. This csv data source provides more insight into

grade distributions for courses over a ten year period, from 2010 to 2020. The dataset has 53,933 rows and 21 columns with variables that provide the proportion of students that received each letter grade for a specific semester. This data source would allow us to provide the end user with more important information about a course apart from just the course description. Adding these details to the course summary would inform students about the general difficulty of courses at the university.

The cardinality of each column is as follows: 'Year' is 15, 'Term' is 4, 'YearTerm' is 51, 'Subject' is 174, 'Number' is 556, 'Course Title' is 5937, 'Sched Type' is 18, 'A+' is 339, 'A' is 453, 'A-' is 186, 'B+' is 135, 'B' is 160, 'B-' is 84, 'C+' is 77, 'C' is 89, 'C-' is 53, 'D+' is 36, 'D' is 38, 'D-' is 25, 'F' is 55, 'W' is 16, 'Primary Instructor' is 9597, and 'Students' is 750.

7. *Functionality*:
    a. A low-fidelity UI mockup –



    b. Project work distribution –

    Tasks:

    1. Get course data from Data Science Discovery (described above) into SQL database: – James
    2. Create web API for queries
        a. /guess/cs225. This will return what the result of guessing cs 225 would be. – Samidha

    b. /random. This will generate a random class for endless mode. – Kavya
3. Create resources for the guessing UI, including guess bar, boxes, etc. – Sruthi
4. Create a link from the guessing UI to the database. – James
5. Publish database to server. – Samidha
6. Publish app to server. – Kavya
7. Create a database for user data. – Sruthi
    a. User Id. Unique identifier for all users
    b. Email
    c. Password (encrypted)
    d. Past performance.
8. Add to the web API.
    a. /login – James
    b. /signup – Samidha
    c. /logout – Kavya
    d. /modify (for updating user data) – Sruthi
    e. /stats – James
    f. /delete. To delete your account and all associated data. – Samidha
9. Create a user interface for creating new accounts and signing in. – Kavya
10. Create a page to display user statistics. – James

Here is how a user would interact with our application. First, the user would have to make an account. Then, they can start guessing the class of the day. They will probably make several incorrect guesses before eventually finding the right class. Even though there are many classes offered at UIUC, it will be possible to guess correctly because of the information given after each incorrect guess. These hints will include whether the class of the day is a higher or lower class number, whether the department is correct, whether the number of credits is correct, etc. Once the user guesses correctly, a brief description of the class will be displayed, so they can learn more about it.

CRUD: With our app, users create an account and create new guesses which are stored in their user information. They can read their statistics using the /stats functionality. They can update their email address at any time. They can also delete their account to remove their data from the database. If we are able to, we would also love to add a feature where users can see the most popular guesses of the day. They will also be able to search for a class and see how many users guessed it on that day.