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Checkpoint 1

1. Motivation and Project Description

    Our final project will be a **web-based application** in the **US college domain**. The context of our domain will be that of college tuition data, which includes the tuition costs themselves, along with fees by colleges/universities for 2018-2019. Additionally, we would also like to visualize the diversity of each college/university, the average net cost by income bracket, historical tuition, and the potential for salaries of each student.

    This is important because college tuition data is somewhat difficult to find. As college students, we think it is important to create a more user-friendly web application for students and parents to figure out the trending costs of college tuition by geographic area, and/or salary.

2. Datasets

    Our dataset will be the "College tuition, diversity, and pay" from kaggle.com. We are choosing this dataset because of its abundance with over 50,000+ data values. The dataset itself is also easy to understand and includes the necessary metadata we need. It has rich, machine-readable file formats which includes file descriptions and entity descriptions. The dataset itself is also maintained and updated frequently by a number of kaggle developers.

    The dataset will have a total of 5 entities; diversity by college/university, historical averages, salary potential of students, tuition cost, and tuition income. The attributes for the diversity by college/university includes *school name*, *total enrollment*, *school state*, *group/racial/gender category*, *enrollment by category*. The attributes for historical averages include *type of school (private/public), academic year, tuition type (4-year/2-year), tuition cost in USD*. The attributes for the salary potential of the students include *potential salary rank within the state, name of school, state name, estimated early career pay in USD, estimated mid career pay in USD, percent of alumni who think they are making the world a better place, percent of the student body in STEM*. The attributes for tuition cost include *school name, state name, state abbreviation, type, degree length, room and board cost, in-state tuition, in-state total cost, out-of-state tuition, out-of-state total cost*. And finally, for the tuition cost per income bracket, *school name, state name, total price in USD, year, (on/off) campus, net cost paid after scholarships/awards, income bracket level*.

3. Project schedule

Week	Deliverables
4	**Checkpoint 1 due;**
5	Create ER diagram;
6	ER diagram finished; **Checkpoint 2 due;**
7	Translate ER model to relational;
8	Relational model normalized; **Checkpoint 3 due;**
9	Database creation(populate tables, set keys, constraints, etc.); Interface design/mockup;
10	SQL design; Interface design/mockup;
11	SQL queries are finished; Interface design finished; **Checkpoint 4 due;**
12	GUI design implementation;
13	GUI design implementation; Evaluation starts;
14	Finish up evaluation; Report writing (and do proof reading); Do final tests;
15	**Final Project Due;**

4. Assessment plan

Our assessment plan to test the functionality of our project will involve a lot of client-side checking to make sure that our database in the server is properly connected to our client. Our checks will include testing the browser, checking HTTP statuses, we'll also be creating test-cases with the intentions of breaking the web page itself, that way we can identify the possible sources of errors/failures and be able to come up with a plan to fix it. We will also be utilizing the web console itself to check for client-side errors.

The performance assessment will include checking for HTTP requests, checking for the content delivery network to make sure we do not receive any CORS errors, and

we will also compress necessary components to make our web page lightweight and responsive. Finally, we will be making sure that our web application works on several browsers, checking to make sure that it renders consistently and properly.

5. Personnel Management

Brett will lead the GUI design, which means he will also lead the frontend development. Carlitos will be in charge of any write ups and assessment checks. He will also be doing backend and database development, and will help out with frontend development if needed. Jackson will help split the work of backend and database development with Carlitos. He will also help out with frontend development when needed.

Our main communication methods will involve discord and email. If we need to, we will be doing virtual calls via Skype, and if we really, really need to, we could hold face-to-face group meetings.