

## Project proposal

Who's in your group?

Vidie Pong, Abe Kim, and Joe Gibson are in the group.

What's the goal of the project?

The goal of the project is to gain a better understanding of database implementation through the process of creating our own implementation. To do this we want to create a bare bones functioning database management system (DBMS). Creating a fully functioning DBMS is beyond the scope of this project though, so we are going to focus our efforts on developing a specific subsystem of the DBMS. Currently, we are exploring the prospect of creating the data manipulation subsystem, which is responsible for inserting, deleting, changing, and executing queries within a database.

What techniques will you be using (workload characterization, measurement, modeling, analysis, simulation, implementation, verification)?

We will implement a bare bones database so that we can use it as a foundation to focus on one aspect of database manipulation. We will identify a metric by which we can measure the performance of our database and attempt to optimize our database for the metric. Possible metrics include time cost, memory cost, or space cost of insert operations, delete operations, change operations, and simple queries under a test database. We need to narrow our project idea before we choose which metrics to use.

What's the minimum/maximum deliverable?

The minimum deliverable would be a database data manipulation subsystem that reliably inserts and deletes entries, while the maximum deliverable would be an optimized data manipulation subsystem that can perform at the same level or above currently existing database management systems.

What's your first step?

We will aim to become more familiar with DBMS and its components, especially the data manipulation subsystem by means of research and experimentation of existing systems. This will give us a standardized comparison for performance after implementing our own DBMS. It will also help narrow the scope of our project to better understand what we can feasibly achieve for this project.

What's the biggest problem you foresee or question you need to answer to get started?

The biggest problem we foresee is that implementing a bare-bones database foundation becomes too big of a task to allow us to explore in more depth one aspect of the database.

Are we expected to complete this project in C?