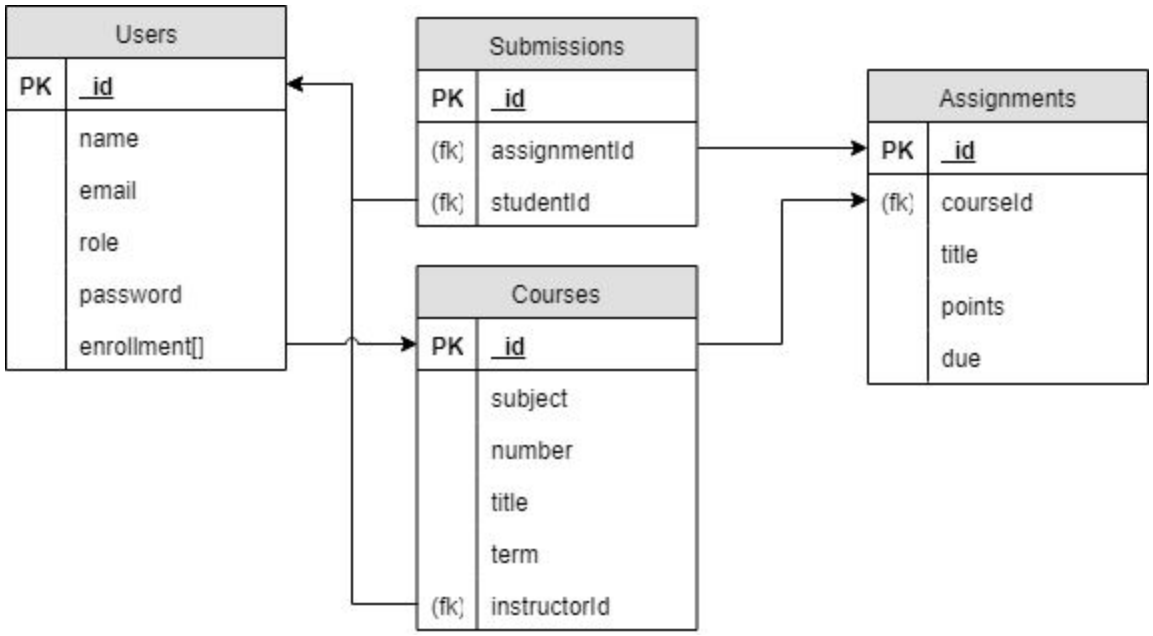
API Architecture Diagram

The two major components of our API consists of the API server itself and the MongoDB server. The API server is what handles all the user requests using URL's. Once a user uses a URL to request data, the API server then sends query commands to the MongoDB server. This server is responsible for holding and querying all the data for our API.

API Data Layout



API Design Layout

We designed the API to allow for minimal data storage. This allows us to reduce the amount of data accesses necessary when updating data in the database. It also reduces the possibility of conflicts between multiple tables that could occur if similar data was stored in multiple places.

A few parts of our project didn't end up turning out how we expected. For example, the CSV generator for our courses roster endpoint is able to send the data to the user, but is not able to be sent in a downloadable format. Another part that we are not too pleased with is the amount of database calls that authentication uses every call. If we had designed it better we feel like we could have significantly decreased the amount of database calls that were made.

Some things that we think we did well on are how our file uploads were done and how we linked up different tables to minimize data storage and redundancy. The file uploads were

designed in a way that allows for user simplicity that doesn't require anything except for the file upload itself in the post request. Everything else (like the automatic timestamping) is generated by the API.