

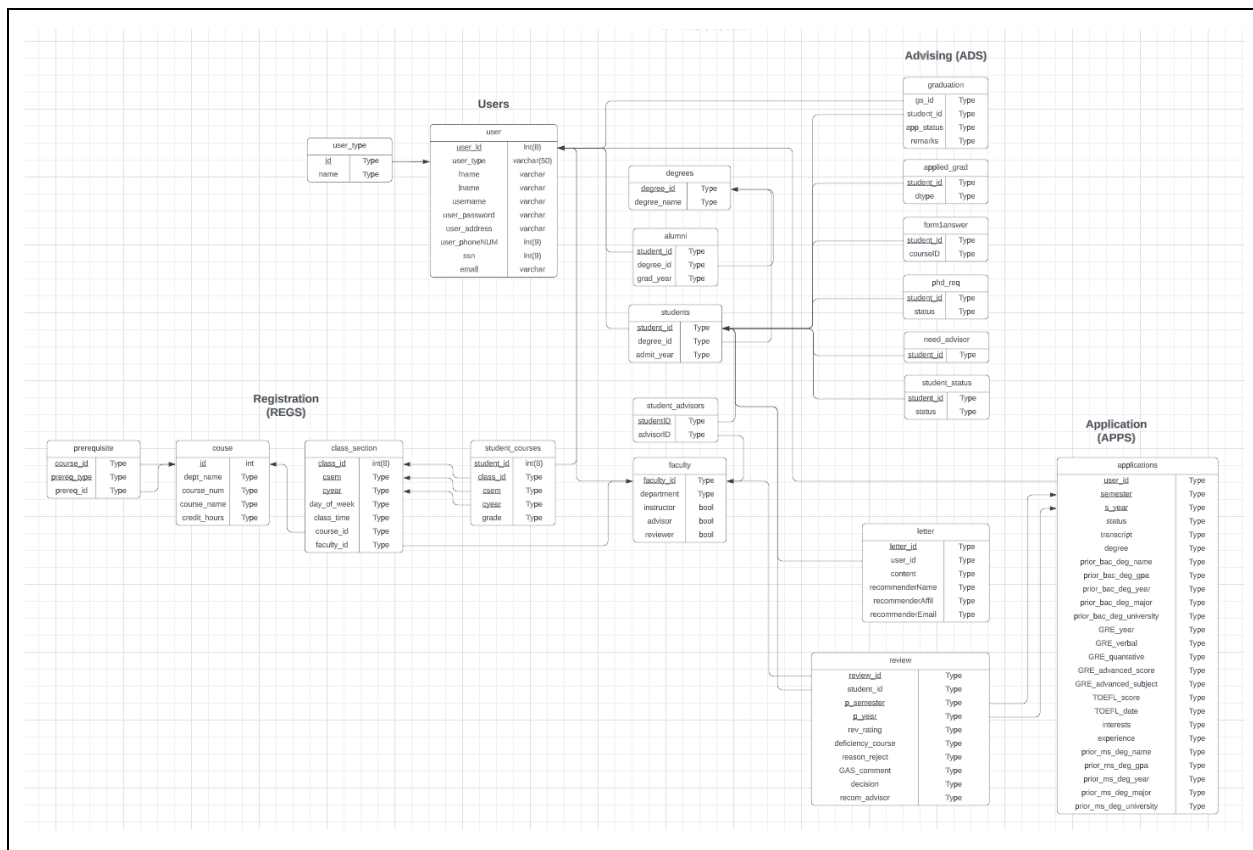
Team 7 ARGS
Olamide Oluwalade
Oliver Krisetya
Sameen Ahmad

Final Report

1. Description

The ARGS project is the final project of the course, which brings together all the modules studied throughout the semester. The project requires designing a university website that simulates a student's journey from matriculation to graduation, with the system keeping track of all university members, including faculty, grad secretaries, and students. The information is stored within a database and updated in real-time to ensure that any changes made on one device are immediately reflected on all other devices. The main objective of the ARGS project is to integrate the functionalities of each module and ensure that the website is fully functional. This means that all components must work together seamlessly, from user authentication and registration to enrollment, course selection, and graduation. It also includes features such as a secure login system and grade management.

2. Schema



Our schema was designed in order to integrate each section and minimize issues in our queries. Each component maintained a similar schema to their original, only having overlap within the different university roles that was shared. For instance, to easily merge each section's faculty type (instructor, advisor, and reviewer), A faculty table was designed with three attributes that denote a faculty member's combination of each role. Our database is in 3NF. To start, our schema meets 1NF because it makes sure that each table does not include repeating groups, either column-wise or key-wise. Each row has unique data based on its candidate key, and in the case of multiple types of data, we made sure to include that attribute within the key. Second, our schema meets 2NF because it makes sure that each table does not include partial function dependencies. This means that all non-prime attributes for our tables can only be derived from the full candidate key and not a partial key. Lastly, our schema meets 3NF because it makes sure that each table does not include transitive dependencies. There are no non-prime attributes that determine other non-prime attributes.

3. Assumptions

- A student cannot register for a class he or she has already completed and passed
- A student may register for a class he or she has failed in a past semester
- Faculty members can have any combination of faculty subroles
- Each class has a unique id per semester
- Each course has a unique id

4. Page Designs

In designing our website, we wanted to ensure that the integration of each part was seamless, particularly for the different user types (e.g. students, faculty, etc.). To achieve this, we opted for a modular design approach, where each section of the website works on a shared page, such as the student page. This enables students to easily access various functions, such as course registration, information updating, transcript requests, and multiple forms, all from a single location.

To maintain a consistent look and feel across all pages, we used Bootstrap CSS throughout the website. This helped us achieve a unified aesthetic and ensured that all pages were visually appealing and easy to navigate. Bootstrap is a popular CSS framework that provides a range of pre-designed elements and styles, such as buttons, forms, and typography. By leveraging these pre-designed components, we were able to quickly create professional-looking pages.

5. Testing Steps

These are the bullet points that we used to test our page functionality:

- Ensured that the page is easy to navigate and all the links and buttons are working as expected.
- Tested the search functionality of the page and ensured that it returns relevant results.
- Tested all forms and interactive elements (e.g., dropdowns, buttons, etc.) to ensure that they are working correctly.
- Tested the accuracy and completeness of all information presented on the page (e.g., course descriptions, faculty info, etc.).
- Tested each component of the project worked in tandem with each other

In order to fully test our website and identify possible problems or issues, we made sure to go through the bullet points listed in the project's requirements and made note of any bugs.

6. Labor Costs and Work Distribution

Oliver Krisetya

- Front End Design
- Class Registration
- Student Page
- Alumni Page
- Faculty Page
- Faculty Instructor
- Home Page
- Course Catalog
- Schema Design
- SQL Data Insertion
- Transcript

Sameen Ahmad

- Faculty Advisor
- Form Verification
- Grad Sec Page
- Admin Page
- Form 1
- Graduation Form
- SQL Data Insertion

Olamide Oluwalade

- Application Review
- Faculty Reviewer
- Recommendation Letter Sync
- Apply Page
- CAC Page
- Application Form
- Transcript

7. Improvements

Having completed the project, there are a couple of improvements that we have noted to make this website better. For one, a unified database schema with agreed upon attributes would have helped in the development of the project, and would have resulted in better clarity of the information stored in each table. Second, a website design of each page would have ensured that our design didn't conflict and that all information was displayed. Third, a day by day plan would have guaranteed we met the requirements by the deadline. These changes would have helped improve the efficiency and productivity of development.

8. Future Plans

In order to finish the project, these steps would be taken:

- Review current website state
- Design new Schema
- Create a day by day plan of each step
- Clearly divide work between members
- Implement
- Review Changes
- Bug Test
- Fix Bugs
- Design UX