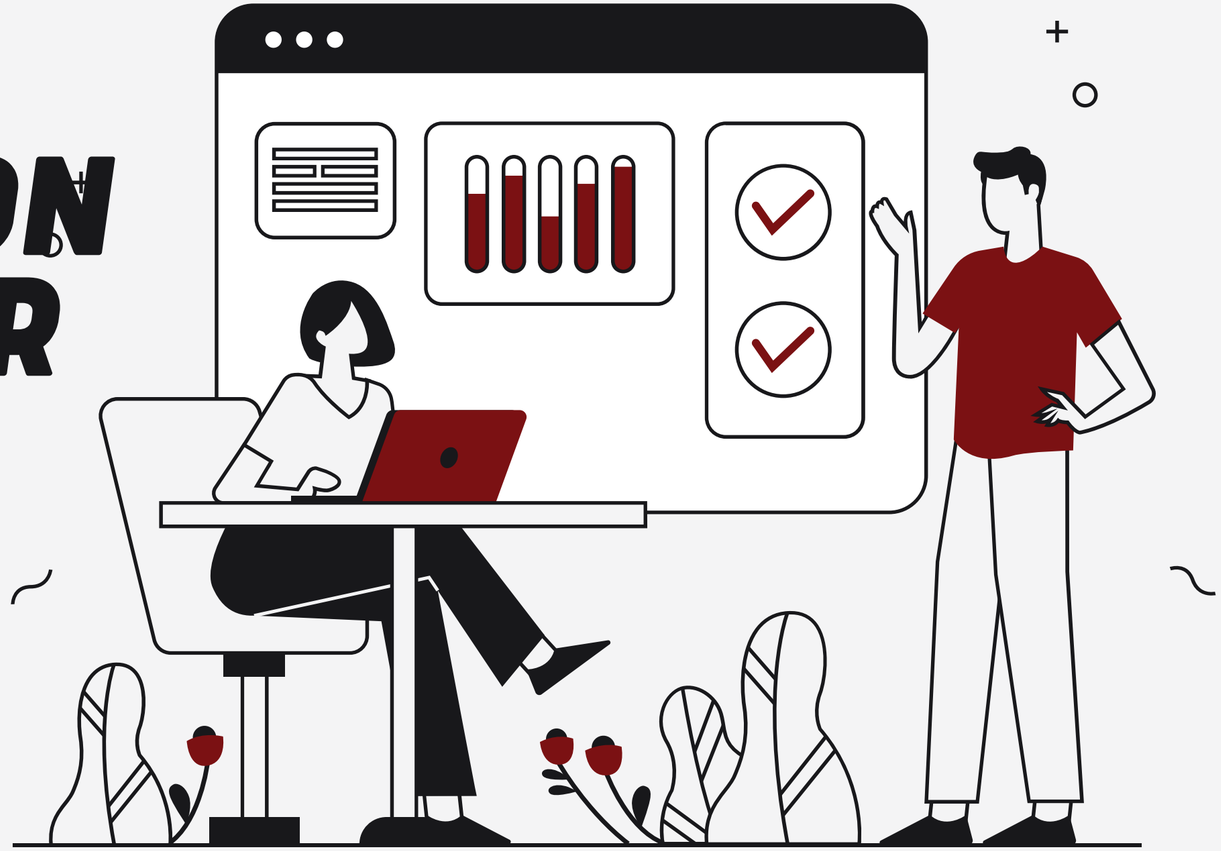
A SPECIALIZED WEB APPLICATION DEGREE PLANNER FOR UPLB STUDENTS



Kyle Edward P. Aquino

Rodolfo C. Camaclang III

University of the Philippines Los Baños | BS Computer Science

BACKGROUND

Degree programs are made up of ordered sets of courses. The way the courses are ordered and structured is called a curriculum.

In UPLB, each degree program has one or more curricula. These curricula are used as guides for students to graduate on time.

However, various factors can affect a student's ability to follow a curriculum.

DEGREE PLANNERS

Degree planners are tools that are used to plan a degree program.

Common features:

- layout or list courses in the order that a students is going to take it
- editing of the order of courses
- visualize relationships between the courses
- recommend courses for students to take based on other variables

Universal degree planners

Degree planners that can be used for any degree program at any institution.

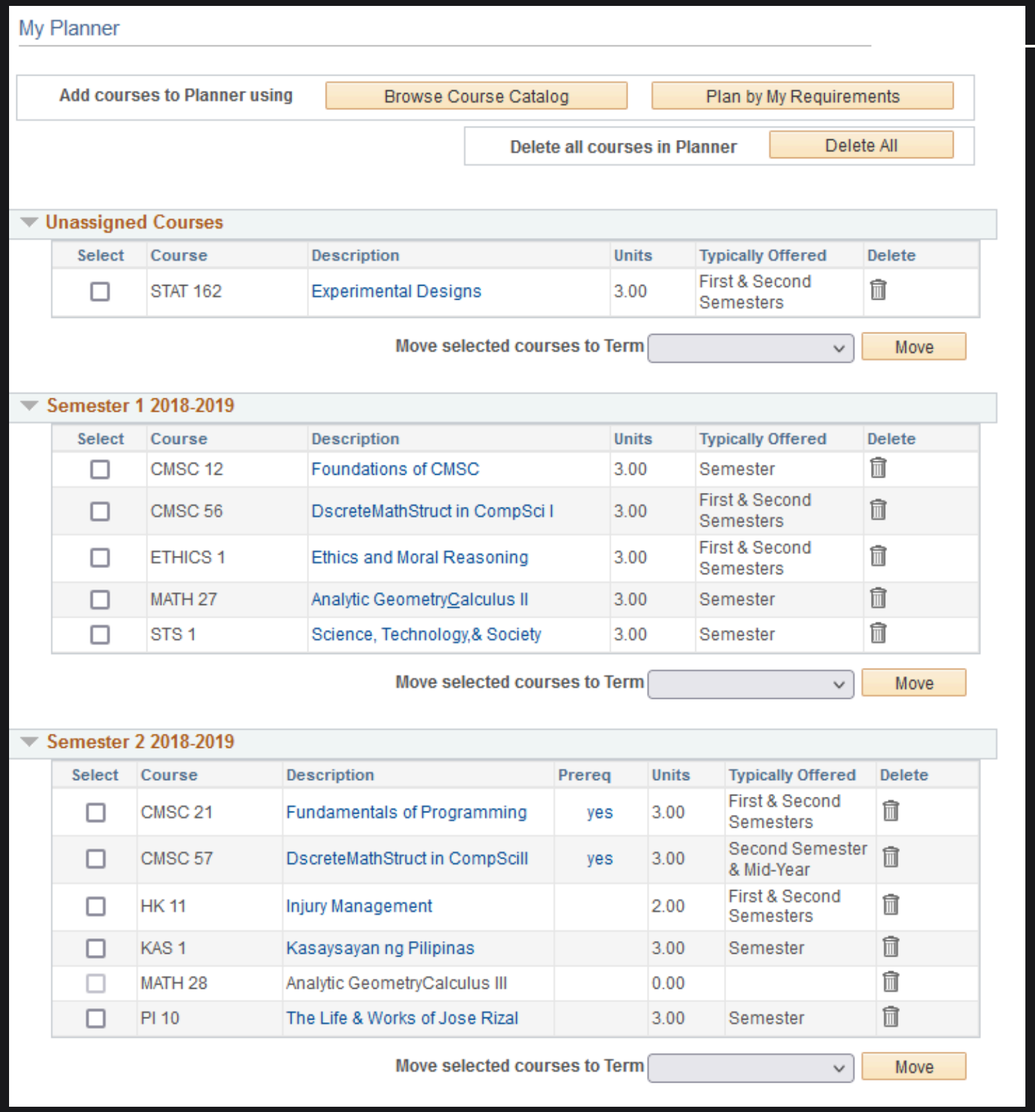
Specialized degree planners

Degree planners specifically made for a specific institution.

PROBLEMS

"My Planner" integrates with the course catalog but lacks features like validation of degree plan or personalized recommendations

The interface could be improved through the application of visualization techniques



OBJECTIVES

- Develop a web application for planning, tracking, and visualizing the coursework of UPLB students.
- Give users the ability to generate forms/documents that use information from the planner.
- Implement features that help student in making sure that their plans are valid and feasible by university standards.
- Evaluate the user experience by conducting a usability assessment of the web application

SIGNIFICANCE

- Addresses the gap in specialized degree planners for UPLB students. The application can help the students better plan and track their progress in the university.
- Strengthens academic advising in the university by providing a platform to supplement interactions between advisees and advisers .
- Contributes to the academic community's understanding of the design, implementation, and evaluation of degree planners and curriculum visualization tools

SCOPE AND LIMITATIONS

The evaluation of the application will only assess it's usability. The effects of the planner on other metrics like grades and graduation rates will need a more comprehensive research.

The application relies on UPLB's database as the source of information, errors and inconsistencies present in the database will be inherited by the application.

METHODS AND MATERIALS

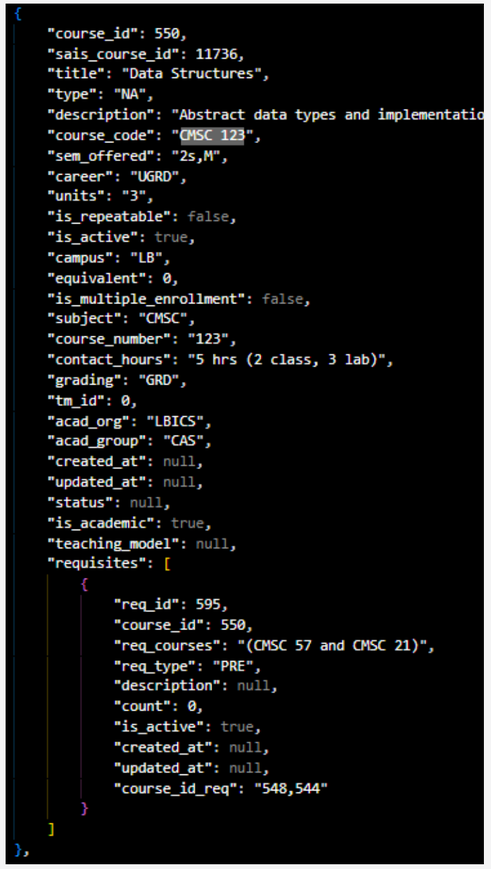
DEVELOPMENT TOOLS

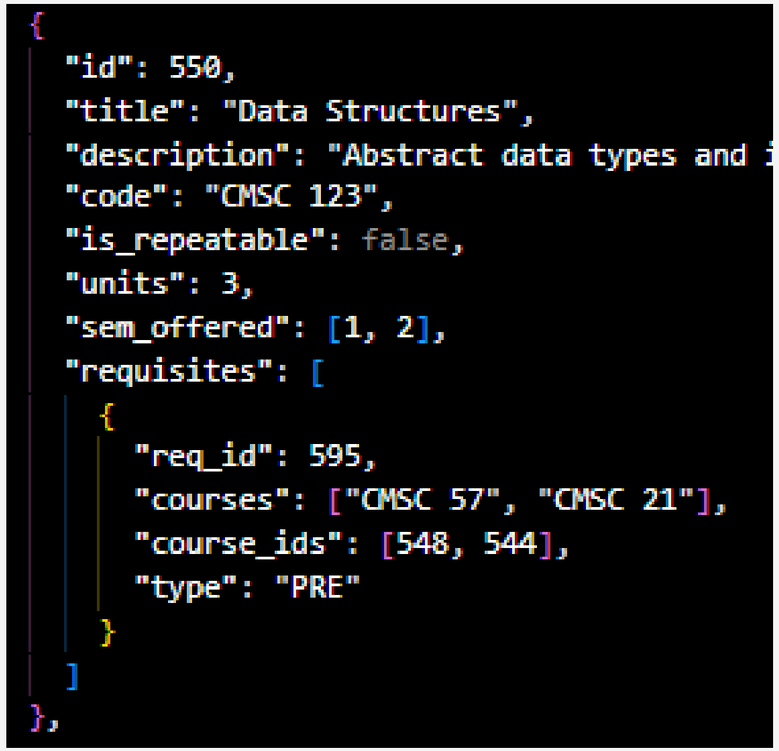
- Written in ***TypeScript***, a programming language that adds typings to JavaScript
- Built using ***Next.js***, a web development framework that offers an optimized approach in creating applications using React
- The main layout was built using ***react-grid-layout***, a layout system that provides an interactive grid interface

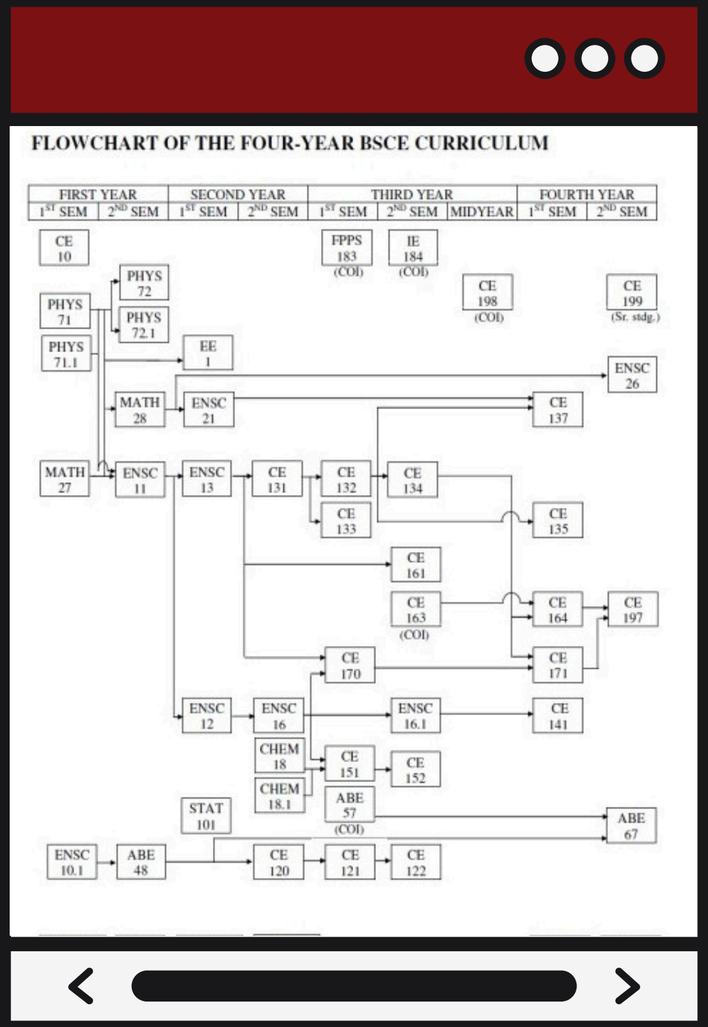
DATA SCRAPING AND PROCESSING

The course and curriculum data is scraped from UPLB Academic Management Information System (AMIS).

The raw data then underwent a cleaning process to remove unnecessary attributes. Afterwards, the data was formatted to make it easier to import the data into the application







INTERFACE

- A grid-based layout where columns are semesters and each item in a column is a course.
- Prerequisite relationships are denoted by arrows pointing from one course to another.

DEMONSTRATION

USER EVALUATION

The respondents are UPLB students since they are the intended users of the web application. Respondents were selected using convenience sampling. The respondents were tasked to create a degree plan that reflects their current academic standing. Additionally, they were tasked to generate a GE Plan of Study form using the application

They were then asked to answer a survey to evaluate the usability of the application. The survey employed the System Usability Scale (SUS). The respondents were also asked for a general comment about the application.

RESULTS

The evaluation involved 10 UPLB students from various degree programs.
The average score was 84.75. This indicates that the application has above average usability.

Users noted the general usefulness of the application, with many stating that they plan on using it for the remainder of their time in the university.

RESULTS

The respondents also appreciated the ability to customize a curriculum using the drag and drop functionality.

Areas for improvement include the need for more detailed instructions and a mobile-friendly interface. Respondents also asked for specific documents/forms to be added in the Download section.

CONCLUSION

A specialized degree planner was developed to address gaps in existing tools to help students plan their degree.

The degree planner features curriculum visualization, prerequisite checking, unit requirement verification, and document generation.

CONCLUSION

User evaluation was positive with an SUS score of 84.75. Additional comments from respondents were also positive.

Further improvements on the web application can be made by adding detailed instructions and adding more documents for downloading.

CONCLUSION

Additional research could also explore the effect of the degree planner on student success metrics, such as grades and on-time graduation rates. The study could collaborate with other UP campuses and universities to investigate the possibility of adapting the application for use in their schools.