Team 5 - Mentorship Program

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1 Overview

Intelligent Schedule Builder (ISB) is a web application which allows McGill students to plan out their course load for their entire degree. It's name is a playful poke at Visual Schedule Builder (VSB), which is the official course planning software currently offered to students by the school. Unlike VSB, ISB provides the functionality for students to plan their courses beyond a single term. Instead students can use ISB to select the courses they want to take for every year and every term that they are at McGill.

As a student fills out the courses for a given year or term, the software will automatically filter in and out courses based on whether or not they have their prior choices give them the pre-requisites or not. After filling out their planner, users can save their selections under a personal profile, so that they can return and make changes if needed.

1.1 Application Scope

- Display the users courses for each year and every term.
- Ability to add and remove courses to the planner. User can search for courses, but will also be prompted with recommended options based on their degree and previously taken courses.
- Dynamically and automatically update the list of possible courses a user can take, as they add or remove them in previous terms and/or years.
- Store the users finished course plan in a customized personal profile/account.

1.2 Future Avenues to Extend Project Scope

- Implement a course recommendation system using machine learning.
- Introduce a rating system, similar to rate my profs that's associated with a reviewers profile.

2 Use Cases

While ISB's target user base is McGill Students, there are four example user profiles which encompass the majority of use cases for all students.

- First Year undeclared Arts Major: Since first-year students have not chosen any major that they want to be in, we want to ensure they take a variety of courses.
- Entering U1 CS Stats Major: They will have to take basic required courses that are pre-requisite to other higher level courses.
- Entering U2 Biology History Major, Fiance Minor want to do an exchange: The U2 has a lot of unrelated courses, but taking an exchange in the year they're entering will mean that they will have to plan out how they are going to arrange their schedule.
- Software engineering student who has to do Co-Ops: Similar constraints to the CS Stats apply. However, they have to factor in when they will be doing Co-Ops and how it will be affecting their schedule.

3 General Requirements

- MongoDB: We will be using Graph Database which will allow us to create a tree structure based on the pre-requisite courses. Use $graphLookup to traverse connections between each node.
- Node.js: Using Node.js to scrap McGill Websites to acquire information about general required courses and complementary courses for each program.
- TypeScript: Using TypeScript as main language for the web app implementation
- NextJs: Using NextJs as framework for our backend and frontend implementation

4 Milestones and deadlines

Web scraping app	Week of 14th October
Database set up	Week of 21st October
Backend interface set up and synced with database	Week of 28th October
Web app logic implemented	Week of 4th November
Front-end components built	Week of 11th November
Testing and final build of the web app	Week of 11th November