Project Proposal

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Introduction

The current process of program planning at UofC can be awkward and frustrating. It involves navigating all around the UofC website and using certain features that do not work well. Our proposed solution is an all-in-one DBMS for students of all kinds to plan out a potential transfer to any of the 91 undergraduate programs at UofC. Our proposal will first describe the problem in more detail, specifically why the current process of program planning is so tedious. Then we will outline our proposed solution which includes many of the features that we are hoping to implement. Finally, we will express the main motivation for our project and why we believe it to be so important.

Problem Definition

Table 8 – 2019-20 Enrolment by faculty (Full-Load Equivalent)

Faculty / School	Undergraduate		
	Fall Target	Annual Actual	Diff
Arts	6,131	6,333	202
Schulich Engineering	3,692	3,702	10
Architecture, Planning & Landscape	-	-	-
Haskayne Business	2,781	2,826	45
Kinesiology	923	944	21
Law	370	381	11
Cumming – MD	640	678	38
Cumming – Other	576	629	53
Nursing	901	908	7
Science	4,435	4,363	(72)
School of Public Policy	-	-	-
Social Work	501	546	45
Veterinary Medicine	138	144	6
Werklund Education	1,055	1,050	(5)
Open Studies	513	754	241
Cumming - PGME	881	945	64
Sub-total	23,537	24,203	666
Qatar	291	341	50
Total	23,828	24,544	716

According to the above chart from the 2019-2020 annual report (1, Page 37), there are currently 24,544 undergraduate students enrolled full-time at the University of Calgary. Every year, there are thousands of possible applicants interested in enrolling at the University of Calgary who must begin the process of thoroughly researching their programs of interest, and the requirements for those programs. Of the 24,544 current students, there are many who are interested in changing their program.

Students may decide to change their program because of a lack of interest, outside opportunities that require a different program, or for other reasons. They may also be interested in pursuing a second major, or an after degree, such as the Bachelor of Education program. Making this decision can be overwhelming, since there are many things to consider: courses that

will transfer, pre-requisites and anti-requisites, when required courses are offered, and what your possible next semesters might look like or if you can complete the requirements of a program within a desired time frame. For UofC, the solution to acquiring this information is by using its 'what-if' report, which goes through the required courses and tells you which ones you have taken. However, we find this report wholly insufficient as a predictor for how a program transfer would look like for any individual student given that it often just doesn't work and provides error codes instead of course transfer information. In order to fully plan out a student transfer, one would need to use a combination of the 'what if' report (2), the program course list (3) to determine prerequisites, anti-requisites and possible electives to take, and the individual course pages to determine in which semesters the course is offered. Currently, planning out a transfer requires navigating between many different several different web pages over and over again. Given that students already have many demands on their time, we believe that we can provide a more intuitive and streamlined programming planning experience.

Problem Solution

Our proposed solution to the problem described above is a database management system which incorporates the most important aspects of the university program transfer process into a simple to use GUI. A user would be able to input their courses manually or, if they are currently a student at UofC, log in to their university account and their course data would be automatically exported to our web application. The user can then select a new major, minor, or other possible aspects of their program to change. The user will then be shown a recommended full degree schedule, based on which courses they need to take, which courses have prerequisites, and when courses are offered. This schedule will be highly interactive; the user will be able to hover over each course to see its details, as well as drag courses between semesters to customize their schedule. The user will be notified if their customized schedule does not work and for what reason. The number of electives the user needs to complete their degree will also be shown, and an easy to view course list of available electives will be shown. Our plan for this project is to include all undergraduate programs currently available at the UofC.

Motivation

We believe that our solution is necessary because the current solution is tedious, time-consuming, and sometimes frustrating. The current process to plan out a program transfer takes many hours of navigating through different web pages just to plan out a single possible transfer. If a student wanted to see what several different transfer scenarios would look like, it becomes an extremely cumbersome process. Our project is unique because it serves a niche user (UofC student) and there is currently no all-in-one API that serves a more complete program transfer planning process. With our DBMS, students will quickly gain the knowledge of what their possible program transfers would look like. The students can then use this information to compare many different transfer scenarios and be able to make a well informed decision. We believe that the existence of our project will be essential for UofC students to make informed decisions about the student transfer process.

Conclusion

The entire mechanism for program planning at the UofC could use a major upgrade to make it more time-efficient and intuitive for students. Our proposed DBMS collects most of the necessary components of the planning process into an all-in-one, easy to use GUI. Our project will include a detailed extended ERD by mid February, a complete relational diagram by late February, a functional website by early March, and a demonstration of the complete product in April. We hope that our project will help many students with program planning, as well as teach us a lot about database management systems.

References

(1) https://www.ucalgary.ca/sites/default/files/teams/strategies-plans/2019-20-Annual-Report.pdf

(2) https://portal.my.ucalgary.ca/psp/paprd/EMPLOYEE/EMPL/h/?tab=IS_SSS_TAB&jsconfig=IS_ED_SSS_ADVISINGLnk

(3) https://www.ucalgary.ca/pubs/calendar/current/course-desc-main.html