Zoe Cheng, Catherine Xu
MIS 3640
Professor Zhi
2/26/2020

Python Project Proposal

I. Big Idea

The main idea for our project is to help students identify the concentrations they are most likely to be able to complete based on what courses they have already taken. The way we envision the project is first, our minimum viable product, allowing Babson students to enter or select the courses they have taken. Then with this information, we will generate concentrations that they are able to complete based on the concentration requirements posted on Babson's website. To further develop the project, the stretch goal is to take the descriptions of the courses inputted and link them to keywords found in job descriptions on Handshake/LinkedIn. Ultimately the end goal of the project is to help Babson students find potential job opportunities that align with the classes they have taken.

II. Learning Goals

This is a problem that both of us have experienced in our Babson careers - not having an automated way of knowing which concentrations we qualify for, or are close to qualifying for. The current degree worksheet that we manually fill out can leave room for error and confusion since it is generalized for every student in Babson. This degree worksheet also ultimately accounts for the credits needed to *graduate* Babson; it is not sufficient for those who aim to complete concentration requirements. By completing this project, we hope to automate the course selection process for not only students who already have concentrations in mind, but also for those who take courses based on interests and want to place a concentration label on their selection of courses.

Most Babson students, ultimately, want to graduate and find a decent job. Our shared goal is to help ease this process for current and future students that are in the midst of taking courses and considering future career paths. Some of the problems we have faced in our Babson careers include determining which potential job opportunities for which we qualify given the skills we've learned in courses, or finding potential career paths that may be of interest to us considering the courses we've decided to take at Babson. By creating this website that not only informs students of which concentrations they qualify for, but also provides potential job listings

and opportunities pulled from job-search websites such as LinkedIn, Indeed, Handshake, etc., we hope to alleviate the stressful process of tough career decisions and job search.

III. Implementation Plan

This project requires data from 3 areas - the students themselves, Babson's course listing, and job sites.

1. We are currently in the process of asking IT personnel at Babson to see whether or not there is a way to auto generate the student's completed courses through a login to Babson's student portal. This will be determined at a later point in time. If this particular approach cannot go through, we will need to resort to having students manually enter or select their completed courses.
2. We also need to gather data from the Babson course listing and concentration requirements sites to create a database. This database will have all the course descriptions for each course, including the specific requirements in order to qualify for a certain concentration. The database will also group courses by concentrations, and determine any overlap courses across several concentrations.
3. We'd also like to gather data on the concentrations and job experiences that Babson alumni have had. In this sense, we could determine a correlation between a concentration and a potential job opportunity based on previous matches. For instance, if many Babson alumni who have concentrated in Finance and Business Analytics in the past have landed jobs as Quantitative Analysts, we could use this information to suggest to students concentrating in these fields to consider Quantitative Analyst positions. In addition, we could match companies who typically search for particular skills and qualifications in their candidates with students who have learned these skills in their courses.
4. Lastly, we need to select keywords from course descriptions and match them to those shown on job postings. This would help match the skills learned from courses to qualifications required for job positions.

IV. Project Schedule (Based on syllabus shown on Canvas and tentative)

2/26 - Project Proposal
Early March - Based on the feedback given after submitting the proposal, we will begin to gather data and create the databases we mentioned above, both for concentrations and course listings.
By the end of March - Complete database and begin to work on python code.
April - Continue to refine python code and begin to think about the layout of the website (UX/UI aspect).
4/14 - Project Design Review

4/21 - Project Code Review
4/28 - Project Final Demo/Presentation In Class

V. Collaboration Plan

We plan to pair program the entire way. We believe that working together is most efficient for bigger tasks because we can discuss ideas in person. This particular way can ensure that we will be able to make mistakes together and work through issues side by side. Making sure we carve out time to work together on programming is key to the success of this project. If along the way, there are certain things that can be handled individually, we will access and split up tasks as seen fit. Because we have worked in a team together before and found that this collaboration plan has worked for us in the past, we plan on continuing this style of teamwork for this project as well.

VI. Risks

The biggest risks that come with this project can vary based on different stages. First, if we are unable to connect the Babson portal through username login, it may come as an inconvenience for users if they have to manually input each course they have completed. However, we will be able to find other ways to minimize this risk by taking on different approaches. For instance, we can have students upload their transcripts in PDF form and have the website scan these documents to auto generate the students' list of courses.

VII. Additional Course Content

We believe that this project will give us a chance to use all that we have learned throughout the entire semester. For instance, a few topics we can see as useful include: lists, iterations, functions, conditional statements, to name a few. Data analytics will be something that our project requires as well since we will be creating databases and analyzing output from these databases.