Habib University

CS 102 (L5) Data Structures & Algorithms

Spring 2020 Project

Dr. Ayaz ul Hassan Khan

Needs Major Revision

Project Title: One Portal

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Project Description:

seem to be a web search portal.
you should not create a central database for it.
you need to define a data structure to store the consolidated data for search.
Search to be done by a search query (a string) with simple interface.

There are two aspects of our project. (a) Construct a network for all the entities in Habib University (i.e. students, instructors, courses, rooms, etc) and link them using graph implementation of relational databases. (b) Construct a central portal for Habib University students to access all of their data in one place, all organized and a few clicks away. This would include web scrapping for LMS, PSCS and Microsoft SharePoint to access the data of a particular student just by signing in into one application instead of three different ones. For example, if I want to manage my outlook calendar, see my attendance in a particular course on PSCS and see my syllabus on LMS, I would be able to do so from a single application by signing in only there.

Project Outcome:

These are the applications of your project not the outcomes.
you should list down the outcomes that you will be demonstrating in the interim and final demo.

As a student of Habib, it gets very hectic to keep tabs on our grades, assignments, attendances and even files on SharePoint using three different websites. So, we have thought of having a single platform to view and regulate everything that we would otherwise have to do on different sites. Not only will this be less hectic, but one of our aims would also be to make this platform more user-friendly than the options we have at the moment. This will result in students saving a lot more time, which can be dedicated to other important stuff, and not having to worry about typing usernames and passwords on sites again and again. Furthermore, we can integrate aspects (a) and (b) to include features such as calculating the average grade for a particular course by surveying previous students of that course, recommend courses for the next semester to complete a major or minor, expected grade in a course, etc. Also, we can send alerts if there is a sudden change in calculated grade in a subject or if a student's absences exceed the allowed limit of absences.

Recourses:

- Graphs
- Priority Queues
- Math Library
- Tkinter
- O365 API
- Binary Search
- Web Scrapping Libraries such as request, and other parsers

We may also use:

- Stacks
- Queues
- Linked Lists
- Trees
- Sorting