CS486C – Senior Capstone Design in Computer Science
Project Description

Project Title: C & I doctoral tracking tool	
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Project Overview:

So you want to be Doctor (PhD)? It takes a lot of learning, a lot of work, and a lot of discovering new things. If you are ready to do this, it will be very worth your while. However, trying to figure out all the rules, what you have done, what you still need to do, and so on, can add more complication and distress than you might want while you are doing one of the coolest things you will ever do. It would really be helpful if there was a system to take care of this while you are making your way to Doctorhood.

The Curriculum and Instruction (C&I) doctoral program here at NAU (https://nau.edu/teaching-and-learning/curriculum-and-instruction/) takes graduate students from their initial application all the way through to their dissertation. Along this journey, they have many required elements and what are called milestones. These milestones are required steps that are achieved so they can continue in the program. They must complete these milestones that include course work, a qualifying research paper, comprehensive exams, a dissertation proposal, a dissertation prospectus, and other professional and academic development activities necessary to get the job done.

At the current time, each completion of a milestone is noted in our administrator's computer, which means all paperwork on these milestones are held locally. Because they do not show up as completed in a students' record, the C & I graduate students often "freak out" when viewing their LOUIE records. This leads to a lot of stress, confusion, and then clarification by administrators and Faculty because all of this paperwork is not marked as completed in LOUIE, until essentially the end of the process, which is Candidacy.

As the coordinator of this Doctoral Program, I would like to create a tool that lessens stress while at the same time (a) communicating progress to the students and faculty; (b) collecting data on who is making progress (much like a dashboard) and (c) motivating students to keep moving toward their goal.

The problem is that we can not currently have these milestones noted in LOUIE. We would like to create a local College of Education (COE) web application that would help us monitor individual student progress as well as create reports for the coordinator to track progress of all the students in the program. We also need an app that would be user friendly for staff and faculty and "fun" (and less stressful) for the student user.

We envision the app for the Faculty and Staff to use to input and store files in a shared system. For the students, we envision accessing the same app at their level that would illustrate their progress and communicate something to encourage them to keep going.

The key features:
- Faculty and Staff access this app to input forms and student products, and document the milestones
- Faculty and Staff will also access the app to get an overview and/or reports on all of the students in the program
- Students will access this app to view their progress and completion of each milestone
- Other support in the student access will provide some sort of engagement and motivation to help keep them on track toward their goals

Impact of this product: This app would solve a long standing problem and confusion among students, faculty and staff. Moreover it would allow us to analyze student progress from a programmatic and individual view. Most of all, it would provide encouragement for our graduate students as they see the wonderful and important progress they are making. Finally, it should be easy for Colleges and Schools to transfer this app over to their own graduate programs; this would be a huge bonus.

Knowledge, skills, and expertise required for this project:

- Database management and interaction, possibly with a cloud/server component

- Web user Interface (UI) development to create engaging and effective data presentation

- Development of security components so that student data is only exposed to authorized individuals

Equipment Requirements:

- No equipment components are required; however, interaction with NAU's ITS and/or AWS may be required for access to a secured server, if needed

Software and other Deliverables:

- A web software product that can be accessed at the appropriate level(s) by Faculty, Staff, and Students, implementing the specifications proposed above and negotiated between the team and the client

- A strong as-built report detailing the design and implementation of the product in a complete, clear and professional manner. This document should provide a strong basis for future development of the product.

- Complete professionally-documented codebase, delivered both as a repository in GitHub, BitBucket, or some other version control repository; and as a physical archive on a USB drive. [SEP]