

University of South Carolina Degree Planning Application

Software Requirements Specification

Team “No Idea”

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1. Introduction

The program for this project is going to be an improved version of the DegreeWorks that the University of South Carolina currently has in place. It will mainly focus on the student and faculty's ability to track the student's progress through desired majors. It will have the ability to show past, current, and future classes that are required for specific majors, while also showing optional courses that can be taken to meet school requirements.

Our goal is to eliminate confusion for both the students and the faculty, while also improving the student's ability to understand the reasons for specific classes. We hope to make the most functional system that allows for easy accessibility and more convenient and useful properties for work and school needs.

2. Stakeholders

Grayson Walter



"I want to know more about how I could graduate early."

Age: **19**
Work: **Student at UofSC**
Location: **Columbia, SC**
Major: **Computer Science**

Personality



Ambitious Courageous Reliable

Goals

- Completing his degree in Computer Science.
- Have a great college experience.
- Stay on track and maintain his GPA.

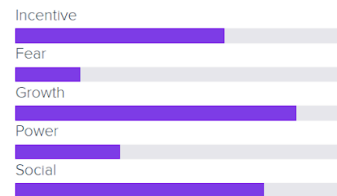
Challenges/Frustrations

- Balancing his education with his social life.
- What profession he wants to pursue after college .
- Concerned about finding an Internship.

Bio

Grayson loves his major and is excited to be able to enter the workforce and put his knowledge to work after graduation. However, sometimes he doesn't understand why he is taking the classes that he is. On his school's current system, he finds it hard to track whether he is taking the right classes or has the ability to graduate early. He wants a new system that will be navigable and understandable. Grayson wants to know what classes he could take for his elective areas.

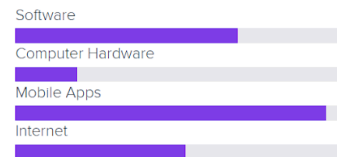
Motivation



Interests

- Traveling to new places.
- Reading a good book.
- Hanging out with my friends.
- Playing videogames.

Technology



Rose McCann



"I want to help the students to the best of my ability and not confuse them."

Age: **42**
Family: **Married with 3 kids**
Work: **Advisor at UofSC**
Location: **Columbia, SC**

Personality



Charismatic Organized Honest

Goals

- Help students to succeed by keeping them on track
- Be a listening ear to student's frustrations
- Have a great career and family life

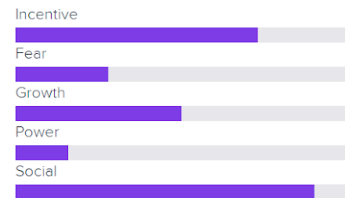
Challenges/Frustrations

- Understanding the current advisement system due to subpar organization.
- Navigating through each students profiles
- Getting students to open up about their challenges

Bio

Rose McCann is an advisor at the University of South Carolina. She loves her job and helping lead students to success in their future careers. She wants a more modern system that is easy to navigate for both herself and the students. She wants to be able to see classes that are both required and not, while also being able to focus on the students strengthens and weaknesses. She wants the system to be easily accessible.

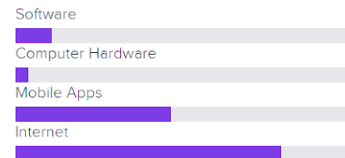
Motivation



Interests

- Spending time with her husband and kids
- Going on a bike rides
- Doing Yoga
- Volunteering with her community

Technology



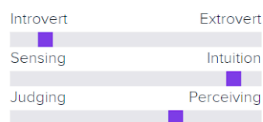
Dan Frank



"I need the most usable system so I can promote academic excellence throughout the college."

Age: **57**
Family: **Married with 1 kid**
Work: **Dean of College of Engineering and Computing at UofSC**
Location: **Columbia, SC**

Personality



Dedicated Hardworking Personable

Goals

- Lead the college of Engineering and Computing to success.
- Create an open learning and working environment for my advisors and students.
- Creating workable budget plans and staying on track.

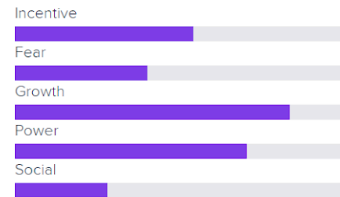
Challenges/Frustrations

- Creating the most learning beneficial guides to completing majors.
- Not having advisors and students voice their dislikes about the current procedures.
- Organization in systems that lead to confusion.

Bio

Dan Frank is the Dean of College of Engineering and Computing at the University of South Carolina. He needs an organized system that promotes the best work ability for the advisors. He wants a system that is easy to understand and work through because most students believes that most students don't understand the current system. He hates that the current system has some functionality bugs that lead to an inability to complete work.

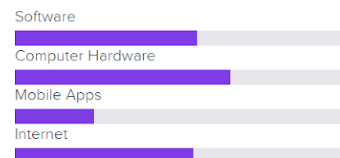
Motivation



Interests

- Working out
- Learning more about computers
- Creating personal coding projects
- Being with my family

Technology



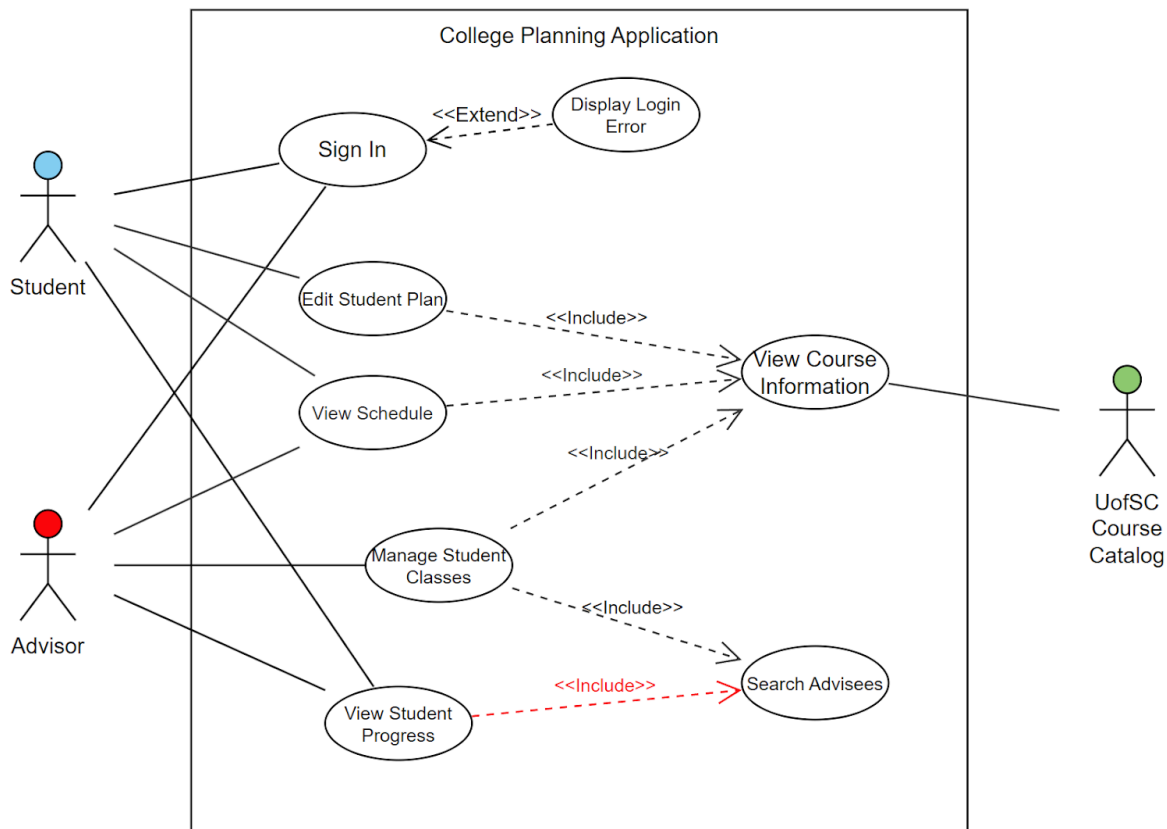
3. Constraints

- The program must be written in Java, using Git for collaboration.
- The program must be done by April 21st.
- UofSC does not have a public API¹ for their course listing.
- It must use the same data as publicly available on UofSC's course catalog.
- 2FA² through UofSC's Duo system will not be possible without access from the university.
- There is no funding for this project.
- Regular meetings must be held.

4. Overall Description

This program should be able to operate within any operating system for the convenience of users/students using different operating systems. The program will run using a local interface running Java, to allow for a wide variety of devices to run it. There aren't any external hardware devices that will be operating simultaneously with this software. It will utilize data from the University of South Carolina for its course listing and planning.

5. Business Use Cases



6. Functional Requirements

[Requirement Spreadsheet](#)

7. Non-Functional Requirements

Look and Feel

- The software must have an easy to use graphical interface.
- The software must implement modern design patterns.

Maintainability and Support

- The system shall support Windows, Mac, and Linux operating systems.
- The system shall be capable of expanding to future semesters.

Security

- The user's information shall be securely stored.

8. Definitions and Acronyms

1. API - Application programming interface
2. 2FA - Two factor authentication

9. Competitive Analysis

	DegreeWorks ¹
Strengths	Clearly states how many credits are required, how many have been completed, and how many are needed. Is divided into the different types of classes that are required Classes are color coded based on completion status and there is a legend stating which each means Lists what class and when it was taken to fulfill the requirement Lists what classes could fill unfulfilled requirements Users can run what-if scenarios for changing major, minor, areas of concentration Integrates nicely with other UofSC systems Secure through 2FA/Duo
Weaknesses	Is separated by type of class but not in any chronological order; can make it overwhelming to determine when classes should be taken in what order

	Can be very slow to load, antiquated design
Audience	Advisors and students

	DARS (Degree Audit Reporting System) UTK²
Strengths	<p>Uses green check marks, blue dots, or red X's to indicate completion status of requirements</p> <p>In drop down menus of a specific requirement it lists the classes that have been or could be taken, lists the grade that was earned, and when they took it</p> <p>Lists the students minors and courses required to complete them</p>
Weaknesses	<p>Oriented to half a page which makes it visually unappealing</p> <p>Lots of words making it hard to quickly see progress</p> <p>Is divided into types of classes but drop down menus must be opened to see the specific classes in the menu</p> <p>Does not clearly state hours completed, instead a drop down menu must be opened</p>
Audience	Undergraduate students only and advisors

	Degree Planner (PeopleSoft)³
Strengths	<p>Users can run what-if scenarios for changing major, minor, areas of concentration</p> <p>Has a Past Courses section that when opened tells you everything</p>

	<p>about the classes you have completed or are taking (title, grade, semester it was taken, requirement it filled)</p> <p>Has a section laying out the different options you have to fulfill certain requirements</p> <p>You can plan a hypothetical schedule as your trying to fulfill requirements</p> <p>You can assign certain requirements to specific semesters so you know when you should complete them</p>
Weaknesses	Home screen is split into 5 sections - lots of good information but does not allow you to quickly evaluate degree progress
Audience	Advisors and students

9.2. Summary

	DegreeWorks	DARS	Degree Planner
Strengths	<ul style="list-style-type: none"> - efficient - color coded 	<ul style="list-style-type: none"> - color coded 	<ul style="list-style-type: none"> - flexibility - usability
Weaknesses	<ul style="list-style-type: none"> - not chronological -slow 	<ul style="list-style-type: none"> - inefficient - wordy 	<ul style="list-style-type: none"> - inefficient - everything hidden in boxed

After reviewing a variety of similar applications, we have gained much valuable insight into the key features that make a degree auditing software successful. We concluded that having information color-coded and neatly laid out for quick overview aids in efficiency. Having things hidden behind multiple clicks takes longer and can lead to information getting lost. Having requirements clearly laid out is also important in helping the student figure out what classes they need to take. Adding a feature that would allow the student to look at a chronological suggestion of classes would also be useful and take away some of the stress for the student of not knowing when to take classes. We think it's important we have enough information that the user understands the requirements and what is expected but not too much where they won't want to take the time to read it and it will get skipped. DARS is a bit too wordy and illogically

organized; the flow just doesn't make sense. It will be important that information can be easily found and interpreted.

10. References

1. Degree Works - <https://degreeworks.onecarolina.sc.edu/>
2. DARS - <https://registrar.utk.edu/about-dars-degree-audits/>
3. Degree Planner - <https://www.registrar.pitt.edu/sites/default/files/pdf/DegreePlannerStudentGuide.pdf>