
University of Louisville School of Nursing

SONAR Vision (Small Project)

Version <1.0>

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Revision History

Date	Version	Description	Author
09/Sept/16	<1.0>	First pass at Vision Doc	Tim Mahan Rebecca Ludwig Ajay Singh Chris Meany

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Vision (Small Project)

1. Introduction

The purpose of this document is to collect, analyze, and define the high level features of the SONAR system and the needs it will fulfill for the stakeholders involved, as well as explain why these are real needs and how the proposed solution benefits all who are involved.

The current process of tracking students throughout their academic career at the School of Nursing is a complex, time consuming activity that leaves a very heavy workload for the handful of advisors that oversee the progress of hundreds of students each year at the school. Individual Excel documents need to be created and maintained for each student, meaning that not only do advisors have to create the documents and maintain them, advisors must also manually open each student's documents every time a request is made by a student for information regarding their academic progress, standing, and compliance.

The purpose of creating a new system is to improve the workflow for advisors, and make certain tasks like fulfilling a student's request for their program GPA can be met with speed, efficiency, and convenience on the part of advisors. We want to redistribute the data entry work, which would save the advisors a considerable amount of time in getting students prepared to enter the college, as well as simply tracking any given student's progression through their chosen program of study.

To start with, students should be charged with entering their own information into a web form online prior to orientation. The only information an advisor should have to enter would be a student's GPA upon entering the school, which comes from PeopleSoft. This reduces the data entry workload of advisors greatly.

Next, Professors should have access to an interface to upload student's grades (or if available we'll interface with Blackboard) so that the entry of every student's final grade for every class would not be left up to the five or six advisors, but rather the professors who already submit the grades to PeopleSoft.

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Tracking marketing efforts are also something we want implemented into the system, nothing that has to be very complicated, but rather simple so information regarding how a student heard about the program can be passed along to the University marketing department.

Finally, Advisors should also be able to access the database through their part of the site, allowing them to track each student's progress through whichever program they may enroll in. Advisors should be able to see what courses students have enrolled in, what they've passed and with what grade, as well as track students who have fallen out of compliance with such requirements as immunizations and current CPR certifications.

In order to properly track all of this information for each student, this system will also serve to centralize student information. Where currently each student has their own excel document and tracking must be done by updating the documents individually, we will provide a system that stores and tracks all student information where advisors can gather whatever information they could possibly need.

1.1 References

- 1) [Access 2016 Specifications](#), Accessed 9/10/2016, Microsoft
- 2) IT Strategic Assessment, 4/10/2016, Brett Leger

2. Positioning

2.1 Problem Statement

The problem of	Heavy data entry by advisors, data redundancy, large potential for data integrity issues
affects	School of Nursing Advisors and students
the impact of which is	Students fall through the cracks at the school, advisors spend large amounts of time entering data when they could be advising students, students and advisors can't always depend on data stored due to excel formatting issues, slower responses when students request certain information, etc.
a successful solution would be	Less data entry for School of Nursing advisors, greater data integrity, less redundancy, easier access to database for most advisors, centralized student data, accurately track student progress through program, and backed up database.

2.2 Product Position Statement

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For	School of Nursing advisors.
Who	Need a more centralized way to enter and track student data/progress through nursing programs.
The SONAR	Is a web front end for a database which houses all relevant student information
That	Will significantly reduce the amount of time advisors spend on data entry and upkeep.
Unlike	The current system
Our product	Will store the data centrally, query easily, track student progress, and send out automatic alerts when student is out of compliance,

3. Stakeholder and User Descriptions

3.1 Stakeholder Summary

Name	Description	Responsibilities
Admissions Council	These are the people who decide who makes it into the upper division and graduate programs	Use information provided by the Advisors to decide who will progress through the school of nursing and who will not.
Students	Those who are tracked in the system	Enter initial information into the system
Marketing Team	Track efforts of University advertisement efforts	Use data provided by advisors to ensure money is being well spent on efforts to advertise the school of nursing and its programs.

3.2 User Summary

Name	Description	Responsibilities	Stakeholder
Advisors	These are the individuals who will utilize the system the most for tracking purposes.	Ensure data submitted by students is correct (specifically a student's GPA) Produces reports and query database to ensure students maintain minimum GPA requirements. Ensure students have valid CPR certification and are up to date on immunizations.	
Students	These are the individuals the system will track	Enter data upon registering for orientation. Maintain current immunizations and submit relevant documents to SoN	Advisors

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		upon request. Maintain CPR certifications.	
Professor s	Instruct/Evaluate students	Update students grades in database at the end of each semester	

3.3 User Environment

There are currently five people who utilize the current system on a regular basis (not including IT staff at the School of Nursing). This will likely remain the same after the implementation of this system. Right now these are advisors who primarily work through the Access database, Excel Spreadsheets, and email.

Advisors create the spreadsheets for lower division students when their information comes in from the University after students register for orientation. These sheets include the classes students must take to complete the program, GPA, and any other important student information. Next the advisors meet with lower division students to help them enroll for their first semester and get students off to a start in their academic career. These sheets are updated regularly to reflect progress, semester by semester. If students later successfully enroll in the upper division program, their information gets moved to an Access database where their upper division progress is tracked. Any further education beyond the upper division is also tracked through this Access Database.

The only really unique constraint is going to be our lack of ability to directly interface our system with PeopleSoft. There is apparently a way to export excel documents (hopefully that means .csv files) which would make taking data from PeopleSoft feasible, though perhaps not convenient or automated in the terms of generating the file we would like to import to our database.

The system in place today consists of an Access database used to track upper division students and a bunch of Excel documents that each keep track of a single student's progress through the program that are all hosted on a Sharepoint server. The other major component of this system is a lot of manual effort by advisors to keep up with the students, their grades, GPAs, and compliance.

Other systems in place today are Blackboard and PeopleSoft. Blackboard is used by professors to keep up with student grades and submit the student's final grade to the PeopleSoft database. PeopleSoft is the University's database that keeps record of all students and their information. PeopleSoft is fairly closed, so we may not be able to make use of it.

3.4 Summary of Key Stakeholder or User Needs

Needs:

- Need to offset/automate data entry for Advisors
 - Currently, Advisors have to keep track of student data manually, meaning they enter data manually for each student when the student registers for orientation
 - Solution: Have the students fill out the relevant information the school will need online to keep track of before student orientation
 - Once student has filled out required information by school, create new students entity in the database and associate the relevant schedule of classes with the student
 - Advisors must also manually enter grades for each student at the end of every semester in individual spreadsheets.
 - Add tracking of student progress to the functionality of the program.

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- If a student no longer meets requirements involving CPR certification or minimum GPA requirements, advisors must manually keep track of that information in excel spreadsheets
 - Automating alerts that email students when they are out of compliance would reduce the effort required currently by nursing advisors to make sure students are compliant.
- Need to make it easier to find student program GPA
 - Currently, advisors must find each student's excel sheet and double check the GPA calculations as they have had integrity issues with the template they use in the past.
 - By creating a central location to store ALL student information, we can create the GPA calculation formula once and have a simple query advisors to run, which returns the selected student's program GPA.

3.5 Alternatives and Competition.

- Keeping the status quo
Strengths

- They don't have really have a budget, so keeping the status quo means they don't have to spend anything

Weaknesses

- Still have data integrity problems from bad templates and large amounts of manual data entry
- Difficulty keeping track of student's progress
- Difficulty determining which students remain out of compliance with immunizations and CPR certs
- Difficulty keeping up with which students no longer meet GPA requirements
- Slow response times getting information like program GPA to students

- Building their own system

(It's true they have an IT person, but his skill level and abilities are unknown)

Strengths

- School would have complete control of the system, ultimate ability to customize as time progresses
- Cheaper (in terms of a dollar amount) to build their own

Weaknesses

- It would likely take longer to design and implement (considering it'd be one person versus the teams of people working on this in our class)
- Difficult to actually implement and maintain when you're using one full time IT guy.

- They could simply update the Access software and migrate all programs to use a single Access database.

Strengths

- Cheap
- Easier to implement than designing a whole new system

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- o Familiarity with the Access program
- o Linking Access databases allows for more data storage

Weaknesses

- o Access databases can only be 2GB a piece in size(1)
- o Linking tables in separate Access databases opens the door for data integrity issues depending on how data is structured
- o No convenient web interface

4. Product Overview

4.1 Product Perspective

The SONAR program will be a part of a larger system. I will likely not have any direct interface with Blackboard or PeopleSoft, but data from both of these systems will be entered into the database.

SONAR will also have a web interface for at least two groups of people, these will be the Professors who will use the system to upload students' grades at the end of each semester, and the advisors who maintain the data once the students have been enrolled. For professors, the interface will be simply for uploading the student's final grade. The advisors will then be able to log into the web client to view and update student information as needed.

Another interface will be provided for system admins. This interface will allow for changes to the internal components of our system. This will not be intended for the advisors, but rather their IT person or the person responsible for maintaining the system we create once implemented. This interface will allow for several features, including storage maintenance, adding/removing users, and updating the system (should we implement third party software such as MySQL or SQL server that benefit from regular security updates.)

4.2 Assumptions and Dependencies

We will not be able to directly import data from PeopleSoft.

Advisors will be doing a majority of student data entry

We are also assuming that there is an extremely limited budget for purchasing hardware and software. Currently the hardware we'd like to use is just the server they already have, which should run the software our system will use with no problems.

If there is a budget, it would be best if we spent the money on some hardware and bought a desktop server and any needed plugins for Joomla to make integration with our database easier.

The server has some form of current Windows or Debian based Linux operating system, if this is not the case, we'll have to reevaluate whether or not our system will run on it properly.

5. Product Features

- 1) Login pages for advisors, students, and professors
- 2) Interface for professors to submit grades
- 3) Premade queries
- 4) Ability to create adhoc queries (for advisors)
- 5) Ability to import data from .csv files and other excel files to database (profs and advisors)
- 6) Reporting that can detail GPA violations, CPR certs out of compliance, which students aren't enrolled

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- 7) Automatic report generation that goes out to certain advisors during the week before open enrollment closes
- 8) Ability to export reports into Excel files
- 9) Update student records
- 10) Advisors can add students into the database from their interface (in case one needs to be added later on)
- 11) Ability for system administrators to create new users/give specific permissions
- 12) Password reset email process
- 13) Automatically generate emails that go out to student and advisor when a student falls out of compliance
- 14) Email templates
- 15) Tracking for students' progress through selected program
- 16) Upon program completion, students will be automatically marked as "Graduated" and a list will be emailed to advisors to review
- 17) School admission application submission
- 18) Scholarship application submission
- 19) Track if scholarships are renewable and whether or not student is eligible to receive
- 20) Track marketing efforts
- 21) Help documentation
- 22) Change how reports are viewed (graphs, lists, etc.)
- 23) Automatic email is generated when admission application is submitted
- 24) Expandable storage for database growth
- 25) Link to main admission page for the University
- 26) Generate automatic email to ask alumni for donations

6. Other Product Requirements

HARDWARE

- Server – specs unknown (save for 3 TB hard drive), location unknown, existence unconfirmed (2)

PLATFORM REQUIREMENTS

Operating System	Windows 7, 8, 8.1, or 10 Linux Mint 17.1 ,17.2, 17.3, Ubuntu14.04 or greater Ubuntu Server
Processor	Intel i5 or i7
Memory	8GB
Storage	1TB for data storage

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PERFORMANCE REQUIREMENTS

- Response time must be 5 seconds or less for any transaction over the network.
- There will be 1000 simultaneous users at peak use times
- Typical transaction will require the transmission of 500k of data
- The system should be available 24/7 with the exception of scheduled maintenance periods
- System will have 95% uptime performance or better.
- System database will be scalable up to 2 TB at the least.

CONSTRAINTS

- We cannot interface directly with PeopleSoft
- FERPA may prevent us from actually hosting student academic information on a non-university server.
- There isn't really a budget we're aware of, so we don't know how much we can spend.
- HIPAA regulations will prevent us from storing student medical information.

DOCUMENTATION

- Help for students getting started with initial data entry
- Help for Advisors with data queries, entry and updates. As well as clear error codes and an online "book" for advisors to search through in order to determine what the cause of certain errors are.
- Help for professors getting grades entered at the end of the semester
- Detailed system documentation for administrators such as the IT personnel at the school of nursing who may be charged with the upkeep of the system.

Appendix A

The following sections of this Vision Document detail the feasibility of the SONAR project in three aspects. First, we will describe the technological feasibility, including the project's size, compatibility of this project with other systems currently in place, and how our system will work alongside the systems currently in place.

Next we will describe the economic feasibility of the project. This will include a cost/benefit analysis which will detail all costs, and all benefits over the next 5 years starting from year 0 (which will be the year we develop/implement this new system).

Finally, we will discuss how we perceive the completed project will be received by the end users. This will really boil down to whether or not we think people will actually use the new system, and why we believe they will find the new system

Technological Feasibility:

From a technological standpoint, the project looks good. It's going to be a mid-size project, which includes a database that we will create on already existing hardware, and web pages that will access the database, allowing multiple users to utilize the database from whatever machine they choose on the school's network.

This will be a self-contained system that will not directly interface with any existing systems (due to the nature of currently existing systems in the University). This means a simpler implementation process in the system (as we don't have to worry about connecting directly to PeopleSoft). We will use a Windows Server and the latest Microsoft SQL server, as well as Microsoft's web server (IIS) to host all of the web pages utilized by the School of Nursing. Backing up data is also a huge concern, as currently, there are no backups for the data created by the school of

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nursing team. In order to provide offsite backups of critical student data, we will utilize a cloud based backup service in Microsoft Azure. The data will be stored offsite in the same region in which the school resides. This will be relatively simple to implement as Azure is a Microsoft product with a tool specifically designed to generate backups of SQL servers and whole servers if need be.

Our team is also (at least for the most part) fairly familiar with the functions of a database and how to put one together. The users are also familiar with database concepts, which should bode well in terms of

Organizational Feasibility:

Organizationally speaking, this system should be an overall success. It is specifically designed to assist with tracking students as they progress through the nursing programs offered by the School of Nursing, which is the biggest obstacle advisors seem to face in retaining and graduating students. Because the School is so student focused, a system such as ours will align perfectly with their current business strategy.

The end users of the system will be able to more quickly view any particular students' data when they receive an inquiry from the student about a particular aspect of their progress. The system will also allow advisors (end users) to pull reports on student data, they should be able to view all students who have failed a class in a given semester, as well view students who enrolled in the previous semester, but not the current semester. What our end users gain is the ability to reach out to students who haven't re-enrolled sooner than they were able to do previously, see who is failed what class, and finally, they will be able to generate reports to aid in future decision making, that may lead to a greater retention of students.

The management of the School of Nursing will have access to more data with our system. This data can be used to aid in the determination of possible causes of attrition at the school, and could help management take steps to minimize attrition as much as possible. With attrition minimized, the revenue generated from tuition is increased, meaning more funding for expanding the program, funding for tutoring programs, or funding for more supplies at the school.

Finally, students will benefit from our new system. If a student decides to take a semester off, this can set their graduation from the school nursing back by as much as a full calendar year as certain classes are only offered during certain parts of the year. If a student is unaware and takes a semester off, then later discovers their graduation has been pushed back an entire year, it may be enough to make any given student drop out of nursing to pursue another degree that could be obtained sooner. With this system, advisors will be able to intervene before this potential problem becomes reality for nursing students, allowing the students to graduate with their preferred degree.

Economic Feasibility

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Iteration 2							
Economic Feasibility							
Benefits	0	1	2	3	4	5	Total
Students	60,000	60,600	61,206	61,818	62,436	63,061	\$ 369,121
Grants	15,000	15,150	15,302	15,455	15,609	15,765	\$ 92,280
Total	75,000	75,750	76,508	77,273	78,045	78,826	\$ 461,401
PV of benefits	75,000	71,127	67,454	63,970	60,666	57,533	\$ 395,750
PV of all benefits	\$ 75,000	\$ 146,127	\$ 213,580	\$ 277,550	\$ 338,217	\$ 395,750	
Costs							
Licenses	-	1,620	1,782	1,960	2,156	2,372	\$ 9,890
PV of Op	-	1,521	1,673	1,840	2,024	2,227	\$ 9,286
Labor	23,800	-	-	-	-	-	\$ 23,800
Total	\$ 23,800	\$ 3,141	\$ 3,455	\$ 3,800	\$ 4,180	\$ 4,599	\$ 42,976
PV of Op	\$ 23,800	\$ 2,949	\$ 3,046	\$ 3,146	\$ 3,250	\$ 3,357	\$ 39,548
ROI	<u>215.13%</u>	<u>2311.56%</u>	<u>2114.25%</u>	<u>1933.29%</u>	<u>1766.93%</u>	<u>1613.89%</u>	
Yearly NPV	\$ 51,200	\$ 68,177	\$ 64,407	\$ 60,824	\$ 57,417	\$ 54,177	

System Request

Project Sponsor: University of Louisville School of Nursing

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Business Need: This project has been initiated to increase the success of nursing students by allowing advisors to have a centralized system to track students' progress, to automatically contact students, to allow students to apply for scholarships, and to allow prospective students to make contact with the School of Nursing.

Business Requirements: Using the Web, advisors will be able to input student data and run queries to assess students' progress, students will be able to apply for scholarships, and prospective students will be able to interact with School of Nursing.

- Input student data
- Run queries
- Send email alerts to students
- Submit and track scholarships
- Gather information of prospective students

Business Value: We expect that this project will enhance the revenue of the University of Louisville by keeping students enrolled. We expect this system to assist advisors to keep students on track with their programs, in turn decreasing the current dropout rate. We also expect this system to allow students to gain revenue in the form of scholarships as we hope to include links to the school's financial aid page. We expect for this system to help recruit more students to the University of Louisville School of Nursing by making it easier for new students to gain information and seek out questions about the program while also being added to an email list which will increase revenue in the form of tuition. And we expect to save costs in advertising by pin pointing what forms of advertisement are the most effective.

Conservative estimates of tangible value in tuition collection for each class of incoming students per year

- \$554,656 per class of undergraduate students per year
- \$683,413 per class of graduate students per year

Constraints:

- The University of Louisville uses PeopleSoft to host most of the student information used by the School of Nursing. We have decided that it is out of reach to interface directly with this system, so information will need to be manually entered into the new database system.
- FERPA laws limit us from storing certain academic information on students, so we will be limited to abide by these laws on what information we can host.
- HIPAA laws limit us from storing certain health related information on students, so we will be limited to abide by these laws on what information we can host.

As Is

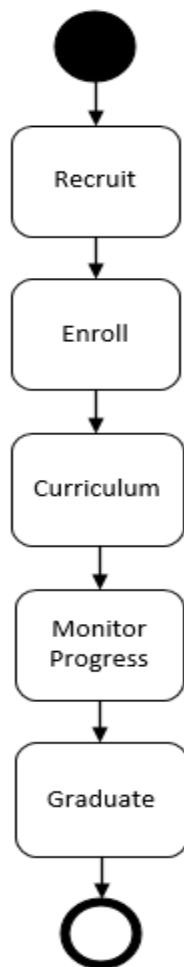
The following describes the As Is model of the system the School of Nursing is currently using. We started the process at the marketing efforts the school engages in to try and recruit students, as that is something both the

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University and the school are currently trying to find a way to track.

Process begins
 Students are recruited
 Students are enrolled
 Students follow curriculum
 Advisors monitor student progress
 Students graduate
 Process ends

As Is



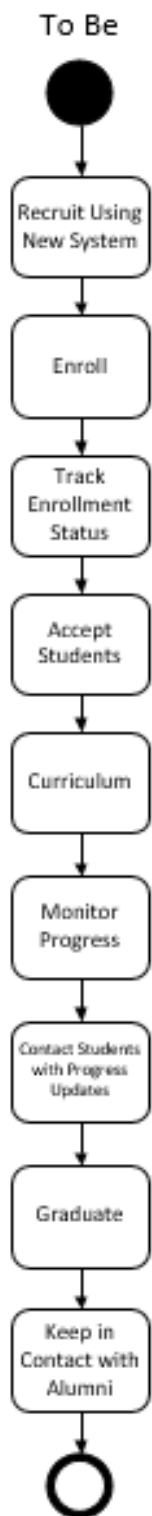
To Be

The following is the To Be process for the new system. As the system is still in its planning phase, this first pass is the most basic task flow of what we will eventually implement. Again we started with the marketing efforts the school and the university engage in, though this process will include

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Process begins
 Students are recruited using new system
 Students are enrolled
 Enrollment status is tracked using new system
 Students are accepted
 Students follow curriculum
 Advisors track student progress using new system
 Students are contacted with progress updates
 Students graduate
 Alumni are tracked
 Process ends

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System Features

The following are the system requirements derived from our use cases listed in the previous Use Case/Risk Analysis section. These will be screens and functionality that we add into the new system in order to meet the needs brought to our attention by the school of nursing staff and advisors. As we progress through future phases and receive feedback, this section will likely change to meet requirements (features) that we uncover throughout future phases.

1. Login Screen
2. Eligibility management system will allow professors to submit pass/fail status for each student.
3. The database will meet the needs of the advisors for monitoring students.
4. System will let the SON management to run queries on database for decision making.
5. The database will allow advisors to create new queries.
6. System will have the ability to import CSV files from other programs.
7. The system will be able to generate reports for the advisors.
8. System will allow admissions committee to run reports to facilitate decision making.
9. The system will allow for automatic reporting to advisors.
10. The system will have the ability to export data into CSVs.
11. The system will allow advisors to update student records.
12. The system will have the ability for advisors to enter student information manually.
13. The system will allow the system administrator to create new system users.
14. Password reset through email.
15. The system will send automatically generated email alerts to students
16. The system will generate email templates for advisors to send to students.
17. The system will allow advisors to track student progress.
18. The system will allow student for submit their applications to the school of nursing.
19. The system will let inform advisors when students have received scholarships.
20. The system will allow students to submit applications for scholarships.
21. The system will provide advisors the ability to track marketing efforts.
22. The system will allow students to fill out an application to the school of nursing online.
23. The system will expansion capabilities, allowing for system admin to increase database storage.
24. The system will be able to add graduated students to the alumni list.
25. The system will generate emails to send to the alumni for updating contact information for the advisors.
26. The system will allow advisors to manually update alumni contact information from received email.
27. The system will generate an email list of alumni to ask for donations

Use Cases / Risk Analysis

This document contains each of our use cases with an associated risk. The items below received a risk rank based on a combination of difficulty in execution and the use case's importance to the system. Those that were deemed to be less difficult or less critical were deemed low risk. Use cases that were deemed to be absolutely critical, or difficult

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in terms of execution and customer satisfaction were labeled high risk.

- 1) Login to advising system
 - Advisors
 - Risk: High
- 2) Login to admin portal
 - System administrator
 - Risk: High
- 3) Login for Professors
 - Professors
 - Risk: Low
- 4) Login for Admissions Committee
 - Admissions Committee
 - Risk: Low
- 5) Submit Pass/Fail
 - Professors
 - Risk: High
- 6) Query database for advising needs
 - Advisors
 - Risk: High
- 7) Query database for decision making
 - School of Nursing Management
 - Risk: High
- 8) Create new queries
 - Advisors
 - Risk: High
- 9) Import data from csv
 - Advisors
 - Risk: Low
- 10) Generate reports
 - Advisors
 - Risk: Low
- 11) Generate reports for decision making
 - Admissions Committee
 - Risk: Low
- 12) Automatic reporting
 - Advisors
 - Risk: Low
- 13) Export to csv
 - Advisors
 - Risk: Low
- 14) Update student records
 - Advisors

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- Risk: Low
- 15) Add students to system manually
- Advisors
Risk: High
- 16) Create new system users
- System Administrator
Risk: High
- 17) Reset Advisor password via email
- Advisors
Risk: Low
- 18) Reset System Admin password via email
- System Admin
Risk: High
- 19) Reset professor password via email
- Professors
Risk: Low
- 20) Reset Committee Member password via email
- Advising committee
Risk: Low
- 21) Generate automatic email alerts for student compliance
- Student
Risk: High
- 22) Generate email templates
- Advisors
Risk: Low
- 23) Track student progress
- Advisor
Risk: High
- 24) Track graduation
- Advisor
Risk: High
- 25) Submission of application to School of Nursing
- Students
Risk: Low
- 26) Track received scholarships
- Advisor
Risk: Low
- 27) Submit scholarships
- Student
Risk: Low
- 28) Track scholarship eligibility
- Advisor

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- Risk: Low
- 29) Track marketing efforts
 - Advisors
 - Risk: High
- 30) View reports for Admissions decisions
 - Board of admissions
 - Risk: Low
- 31) Submission of program application
 - Student
 - Risk: Low
- 32) Add to Database storage
 - System admin
 - Risk: High
- 33) Add graduated students to alumni list
 - Advisors
 - Risk: Low
- 34) Generate email alumni to request email updated contact information
 - Advisors
 - Risk: Low
- 35) Manually update alumni contact information from received email
 - Advisors
 - Risk: Low
- 36) Generate email list to ask alumni for donations
 - Advisors
 - Risk: Low
- 37) Create upper division student
 - Advisors
 - Risk: High
- 38) Edit upper division student
 - Advisors
 - Risk: High
- 39) Delete upper division student
 - Advisors
 - Risk: High
- 40) Create lower division student
 - Advisors
 - Risk: High
- 41) Edit lower division student
 - Advisors
 - Risk: High
- 42) Delete lower division student
 - Advisors
 - Risk: High

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43) Create perspective student
 Advisors
 Risk: High

44) Edit perspective student
 Advisors
 Risk: High

45) Delete perspective student
 Advisors
 Risk: High

46) Create graduate student
 Advisors
 Risk: High

47) Edit graduate student
 Advisors
 Risk: High

48) Delete graduate student
 Advisors
 Risk: High

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Initial Architectural Design

There were three options we looked at in the design of this system. The first is a cloud based option. What this means is that the web pages advisors and professors would log into, would exist on servers which we paid to use. The upside to this would be the advisors and other users could access the system from anywhere with an internet connection. This would allow multiple users of the system to use the system at one time, and this also means the school wouldn't have to worry about maintaining any hardware. We'd also have a cloud backup, this way if anything happened to the hardware the current system was stored, the data would be safe on another machine.

Another option we will consider is using the existing server at the school of nursing which is not currently being utilized. This will help keep the ongoing cost of running the system lower as there will be no licensing fees for utilizing cloud services, meaning most of the cost will be upfront, with only cloud backup services as the cost of continued operation.

Finally, we will consider using the existing server at the school and using a storage device installed at the Owensboro campus. This will mean no continued cost of operation aside from purchasing new hardware when the current hardware needs replacing. This will be the cheapest option up front as the device needed to store backups is relatively inexpensive, and the server that the new system could run on has already been purchased and is at the school of nursing.

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Team Charter

The goal for our team is to complete this project both effectively and efficiently, and to deliver a product to our clients that meets their needs and works better than their current system. We are going to ensure that the work we put into this project will produce a final product that will be user friendly, as basic as possible while still meeting all the criteria, and something that the school of nursing can use for many years to come. We have met with the clients and gained a very good understanding of what it is they would like. There are a few bumps in the road early as some functionalities they requested may have some issues with FERPA and issues with pulling information from PeopleSoft, so this will be something that we will have to work around and do our research to ensure that the final product will be useful without violating any rules or unable to pull the information needed.

Our group has met only in class to this point so far to work on the project. We have discussed in depth as to how we plan on achieving our goals this semester and what our plans of action will be throughout the semester. The initial plan will be for us to meet Mondays and Wednesdays immediately after class as we all have free time. During these meetings we have laid out a plan to follow throughout this semester.

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As for dividing the workload, we are meeting together after class and laying out the work for the iteration that is coming up and we are dividing the work evenly amongst the group members to make for sure that everyone is doing their equal parts. Before we leave, we are in agreeance that the section of work that everyone has is an equal amount and that we are all accountable. During these meetings we are looking at the iteration workload that we will present on next and writing each person's name next to the section of work they are assigned to so that we are all aware of who is doing what part so there is no confusion.

The only issue we have at the moment is some of us work and there are conflicting times for the group to meet as a whole besides the time slot immediately after class. To combat this problem, we have created a google drive account for the four of us to log into. Here we can all upload our portions of work and use the chat function to communicate more efficiently with other group members. This was a decision agreed upon by the members of the group during the first meeting after picking our groups as a great way for us to all keep our documents and work in one spot that is essentially in the cloud so that we do not have to worry about someone losing a flash drive or forgetting their portion of work at home on a day we need to present our work.

Our main source of communication as of now or until we decide that it is ineffective is google drive chat and text message. This has proven to work thus far and allowed us to keep documents organized and our progress communicated to everyone. We also have the luxury of spending at least an hour after class on Mondays and Wednesdays to talk with the group as a whole and track everyone's progress or discuss issues that we may have encountered. This hour after class will also allow us to work out any conflicts that we may have and that may be too big to solve over the computer.

To this point in time, we have had no conflicts or anyone that feels that they have been slighted or given too much work. However, we have discussed that if we ever reach a point in time where someone disagrees with the group or feels that there is a better option, we will let the member speak and give their opinion to try and convince the group to follow their idea. After the member or members have

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given their ideas, we will put it to a group vote to decide what the solution is. If the vote results in a tie, then we will continue our work as we previously had, or take some time apart to collect more information to back up our ideas and re-present them to the group before taking another vote.

In conclusion, our group has communicated very well with one another to this point in relationship to the project, and have all been in agreeance as to how we will approach this project. We will maintain our current approach until the time comes that we need a new plan. We are all ready to put forth the effort and time that this will take to give a product that is worth presenting. We are all also aware that if someone does not pull their weight or the group feels that someone is hindering our progress, we will have a group meeting to discuss our issues. If we feel that a group meeting does not resolve the problem at hand, we will discuss our issue with the professor to make him aware that we have tried to fix our own problem, but that someone is not carrying their weight.

Other Risk Areas

Other areas of risk will include things that we are not currently sure how we will include in our system, obstacle that will make the implementation of our SONAR system more difficult (such as FERPA), or any piece of the project we feel we are still missing in terms of information. The High risk items will have the most impact on the system, where low risk items are those that simply need a decision to be made.

High Risk:

- Budget: we are not sure if there will be a budget to maintain our system, meaning that if we implement a system that does anything cloud based, we may not be able to fund services such as backups or web hosting for our system.
- Hardware: We have been lead to believe that there is currently an unused server available for our system at the School, however, as we have no confirmation, this poses as risk if we purchase no hardware to run on the system.
- FERPA: This act restricts the storage of student information in a personally identifiable way. We may not store grades, but we can store pass/fail, provided this is acceptable.
- FERPA2: If pass/fail is not acceptable, we will have to find a solution other than something that is cloud based.
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Low Risk:

- How Students and professors will interface with the system
- How/if the Upper Division committee will access the system

How Risks will be dealt with:

- During the next phase our focus will be on the items listed as high risk. Most of the high risk items will be dealt with by using feedback provided by the School of Nursing staff, as they will have the most insight as to how the system should meet the issue in the current process.
- Should Letter grades or GPA be a requirement, we will not use any cloud based components, and utilize current available hardware.
- We will also reach out to School of Nursing IT to ensure the hardware discussed earlier in the current phase is available for use.
- We will also reach out regarding continued maintenance or other budget requirements for the new system if we do utilize a cloud environment.

Gantt Chart Schedule

The following is a Gantt chart. It is simply a visual representation of the tasks the team will need to complete in the coming iteration of the project. It provides a name for each task. Each task listed will have a corresponding section in the report we deliver at the end of this iteration. The chart also lists the team member responsible for completing a task, any task marked with "All Members" simply means that the tasks has been divided amongst the group members to complete in parallel to each other. The Gantt chart also lists the anticipated start and end date for each task. Finally, the arrows drawn from one project to another indicate dependencies, these dependencies are what guided our decisions in the order of completion with certain tasks.

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ID	Task Name	Team Member	Start	Finish	Oct 9 2016				Oct 16 2016							Oct 23 2016							Oct 30 2016						
					12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	
1	System Request	Ajay Singh	10/12/2016	10/14/2016																									
2	Vision Document Updates	Tim Mahan	10/12/2016	10/13/2016																									
3	Process Models	Rebecca Ludwig	10/12/2016	10/17/2016																									
4	System Requirements	Chris Meany	11/3/2016	11/4/2016																									
5	Complete Use Cases	All Members	10/18/2016	10/21/2016																									
6	Risk Analysis	Tim Mahan	10/17/2016	10/19/2016																									
7	Prototypes	All Members	11/7/2016	11/11/2016																									
8	Use Case Diagrams	All Members	10/27/2016	10/28/2016																									