EECS 581

Spring 2018

Final Project Design

Team EduCare

Date submitted: 2/5/2018

Group Information

Team Name: EduCare (Team 7)

Team Members and Email Addresses:

- Sharynne Azhar (sharynneazhar@ku.edu)
- Erin Coots (erincoots@ku.edu)
- Neil Dunn (n768d465@ku.edu)
- Najeeb Lakhani (n381l087@ku.edu)
- Vuong Nguyen (vuongnguyen@ku.edu)

Github Link:

- Frontend: https://github.com/vuongptnguyen/EduCare
- Backend: N/A

Team Meeting Time: Thursdays @ 11:00AM

Lab Meeting Time: Mondays @ 2:30PM

Contact: Najeeb Lakhani and Erin Coots

Project Sponsor: N/A

Project Description

Our Journey to EduCare:

Through the Fall 2017 semester, our team has conducted many research in order to narrow down the user need. At first, we created a research database for common trends of technology and analyzed how these technologies might solve a problem in our fields of interests: education, entertainment, travel and finance. Our team then created an opportunity map and decided to use data analytics and machine learning to bridge the gap between academic advisors and students, in order to maximize students' academic and career support at the University of Kansas.

With our connection to professional academic advisors at the Undergraduate Advising Center (UAC), we started to conduct user interviews and in-depth research about advising system at KU. Our team created a survey for students (mainly lower-classman) to identify their pain points and address their needs in academic supports and career development. From our research data, the main issues are the lack of communication and personal relationship between advisors and students. The students feel like the 30-minute advising appointment once per semester is too short and not personal. The advisors do not get to know the students well enough to help them design a career plan who synthesizes their strength, interests and capacity. At this point, EduCare is designed to provide a centralized dashboard for academic advisors with advising tools and resources; and a mobile application for students with personalized recommendation system for related campus organizations and events. This system also tracks students' activities and academic in-class performances, allowing academic advisors to better understand the students.

In November 2018, after completing our first set of wireframes, we presented our concepts and prototypes to three academic advisors at the UAC. We received many suggestions to improve the concepts. However, more importantly, we were suggested to research more about edutech in how data is utilized to maximize students' growth and proactively prevent low performances. This was an important turn in our product. After our research about student academic success in higher education, we have identified the primary approaches: Student engagement, early intervention, degree planning, degree progress and career development. We soon realized that the mobile application for students only improves student engagement on campus, while the dashboard for advisor may be used in early intervention, degree planning and progress as well as career development. Since the dashboard provides the advisors information about the students and advising tools to enhance their workflow, we decided to focus primarily on building an advisor dashboard as the main product of EduCare.

Main concept offerings:

After this new finding, we identified the main user as academic advisors. Our team created user persona and journey map to fully emphasize with the responsibilities and work flows of academic advisors. The journey map always helps us to identify areas of opportunity that our EduCare dashboard can improve. After in-depth research about advising procedure and best practices, our team realized that advising for main enrollment, which happens once per semester, is the most stressful time for most advisors, including faculty advisors. We finalized our main offerings: collaborative documentation, task management and time management.

- Collaborative documentation is the process in which both students and advisors are contributing to the advising notes, before, during and after the advising appointment. This not only

strengthens and maintains the connection between advisor and students, but also records important information so that the students or any other advisors may refer to after the appointment. Collaborative advising notes also encourage students to be proactive about degree planning before they talk to the advisors. The advisors, knowing what the students need to talk about, are able to prepare accordingly, and even go further to get to know the students within the limited time of 30-minute appointment.

- Task management on EduCare dashboard offers various design patterns to assist the advisor during an appointment. We understand that there are many resources, documents, tools and information that an advisor utilizes in an appointment, while interacting directly with the student. Our task management patterns, such as two-panel selectors for quick preview and advising notes, or split screen for multiple tabs, aim to create a smooth workflow and minimize frictions when advisors look through multiple resources and tools.
- Time management design patterns such as calendar reminders, calendar management, strive to help advisors manage the workflow through our the semester effectively. Upcoming appointment reminder and snooze option help advisors to manage their workflow throughout a day of consecutive appointments.

At current states, our wireframes are made into working prototype to test with advisors. While the front end team has started to code the individual components of the landing web page.

Project Milestones

Implementation Milestones:

Fall 2017:

- Phase 1: Conception and Initiation *(Completed: November 2017)*
- Phase 2: Design and Specification *(Completed: November 2017)*

Spring 2018:

- Phase 3: Implementation *(Planned: March 2018)*
- Phase 4: End-to-End User Testing *(Planned: April 2018)*
- Phase 5: Deployment and Distribution *(Planned: April 2018)*

Documentation Milestones:

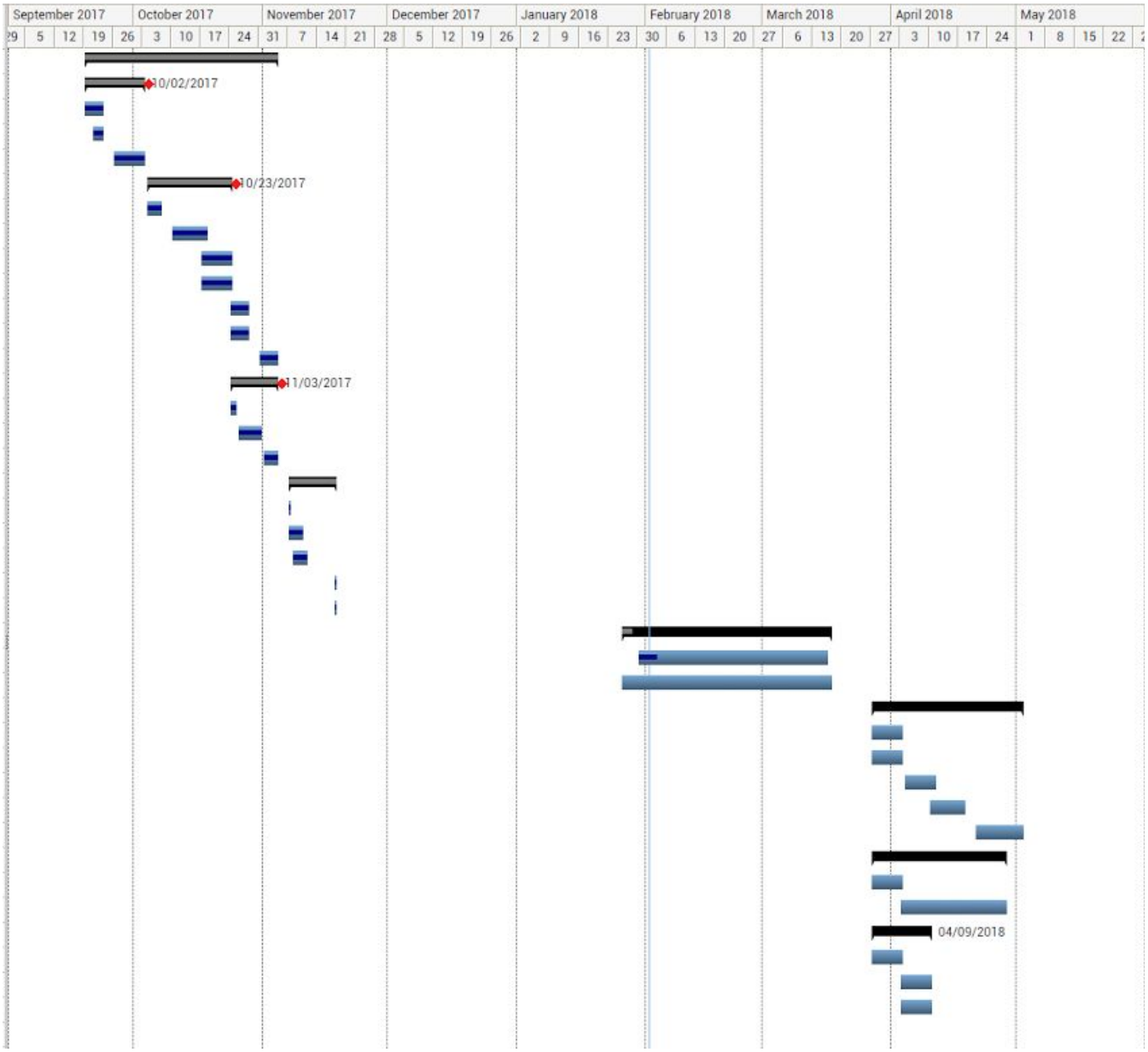
- Team Formation *(Completed: September 2017)*
- Initial Project Description *(Completed: October 2017)*
- Gantt Chart (*Completed: October 2017)*
- Project Proposal Report *(Completed: October 2017)*
- Project Proposal Video *(Completed: November 2017)*
- Final Design Document *(Planned: February 2018)*
- Final Project Video *(Planned: April 2018)*
- Final Project Pitch Deck *(Planned: April 2018)*
- Quad Chart *(Planned: April 2018)*

Gantt Chart:

View the full Gantt Chart here:

https://drive.google.com/open?id=1dfvvYjruruWr2W2dzfdpT50y1m1r2QgW

		Name	Duration	% Complete	Start	Finish
1	✓	**Phase 1: Conception & Initiation**	35days?	100%	09/18/2017	11/03/2017
2	✓	**Submit initial project description**	11days?	100%	09/18/2017	10/02/2017
3	✓	Individually research potential opportunities in various industries	5days?	100%	09/18/2017	09/22/2017
4	✓	Combine and synthesize individual research	3days?	100%	09/20/2017	09/22/2017
5	✓	Conduct in-depth research into selected industries	6days?	100%	09/25/2017	10/02/2017
6	✓	**Submit project proposal report**	15days?	100%	10/03/2017	10/23/2017
7	✓	Narrow down ideas and define project requirements	4days?	100%	10/03/2017	10/06/2017
8	✓	Reach out to various departments and students to gain insight on student experience	7days?	100%	10/09/2017	10/17/2017
9	✓	Conduct interviews with academic advisors	6days?	100%	10/16/2017	10/23/2017
10	✓	Conduct interviews with underclassmen	6days?	100%	10/16/2017	10/23/2017
11	✓	Determine requirements to quantify student data	5days?	100%	10/23/2017	10/27/2017
12	✓	Create and distribute advising experience survey to students	5days?	100%	10/23/2017	10/27/2017
13	✓	Extrapolate data from interviews	5days?	100%	10/30/2017	11/03/2017
14	✓	**Submit project proposal video**	10days?	100%	10/23/2017	11/03/2017
15	✓	Plan out proposal video	2days?	100%	10/23/2017	10/24/2017
16	✓	Shoot proposal video	4days?	100%	10/25/2017	10/30/2017
17	✓	Edit proposal video	4days?	100%	10/31/2017	11/03/2017
18	✓	**Phase 2: Design & Specification**	10days?	100%	11/06/2017	11/17/2017
19	✓	Determine requirements for MVP (i.e. what does the app do?)	1day?	100%	11/06/2017	11/06/2017
20	✓	Sketch out app architecture diagrams and backend databases (UML?)	4days?	100%	11/06/2017	11/09/2017
21	✓	Sketch out initial wireframe and storyboard (UI/UX) for web app	4days?	100%	11/07/2017	11/10/2017
22	✓	Determine frontend language/frameworks	1day?	100%	11/17/2017	11/17/2017
23	✓	Determine backend database technology	1day?	100%	11/17/2017	11/17/2017
24		**Phase 3: Implementation**	37days?	5%	01/25/2018	03/16/2018
25		Implement frontend	34days?	10%	01/29/2018	03/15/2018
26		Implement backend	37days?	0%	01/25/2018	03/16/2018
27		**Phase 4: End-to-End Testing**	27days?	0%	03/26/2018	05/01/2018
28		Complete QA testing of frontend UI/UX	6days?	0%	03/26/2018	04/02/2018
29		Complete QA testing of backend APIs	6days?	0%	03/26/2018	04/02/2018
30		Complete end-to-end internal testing with fully integrated frontend and backend	6days?	0%	04/03/2018	04/10/2018
31		Complete end-to-end user testing with fully integrated frontend and backend	7days?	0%	04/09/2018	04/17/2018
32		Fix any issues found and refine app	8days?	0%	04/20/2018	05/01/2018
33		**Phase 5: Deployment & Distribution**	25days?	0%	03/26/2018	04/27/2018
34		Buy a domain name	6days?	0%	03/26/2018	04/02/2018
35		Deploy web app to server	20days?	0%	04/02/2018	04/27/2018
36		**Phase 6: Presentation**	11days?	0%	03/26/2018	04/09/2018
37		Create Poster	6days?	0%	03/26/2018	04/02/2018
38		Prepare Video Demo	6days?	0%	04/02/2018	04/09/2018
39		Prepare Slide Deck	6days?	0%	04/02/2018	04/09/2018


September 2017
October 2017
November 2017
December 2017
January 2018
February 2018
March 2018
April 2018
May 2018
29 5 12 19 26 3 10 17 24 31 7 14 21 28 5 12 19 26 2 9 16 23 30 6 13 20 27 6 13 20 27 3 10 17 24 1 8 15 22
10/02/2017
10/23/2017
11/03/2017
04/09/2018

Project Budget

The project budget at this time is still $0.00. All the resources we are using are free or from KU.

Work Plan

Sharynne Azhar

Front-End Developer. Responsible for designing and developing the user interface and interactions.

Erin Coots

Front-End Developer. Responsible for designing user experience and developing the user interface.

Neil Dunn

Back-End Coder. Responsible for retrieving/handling data in the database and providing it to the front-end. Will establish communication between the front-end and back-end.

Najeeb Lakhani

Database Coder. Responsible for creating and configuring the database to the specification given by the front-end team. Supports Neil whenever necessary.

Vuong Nguyen

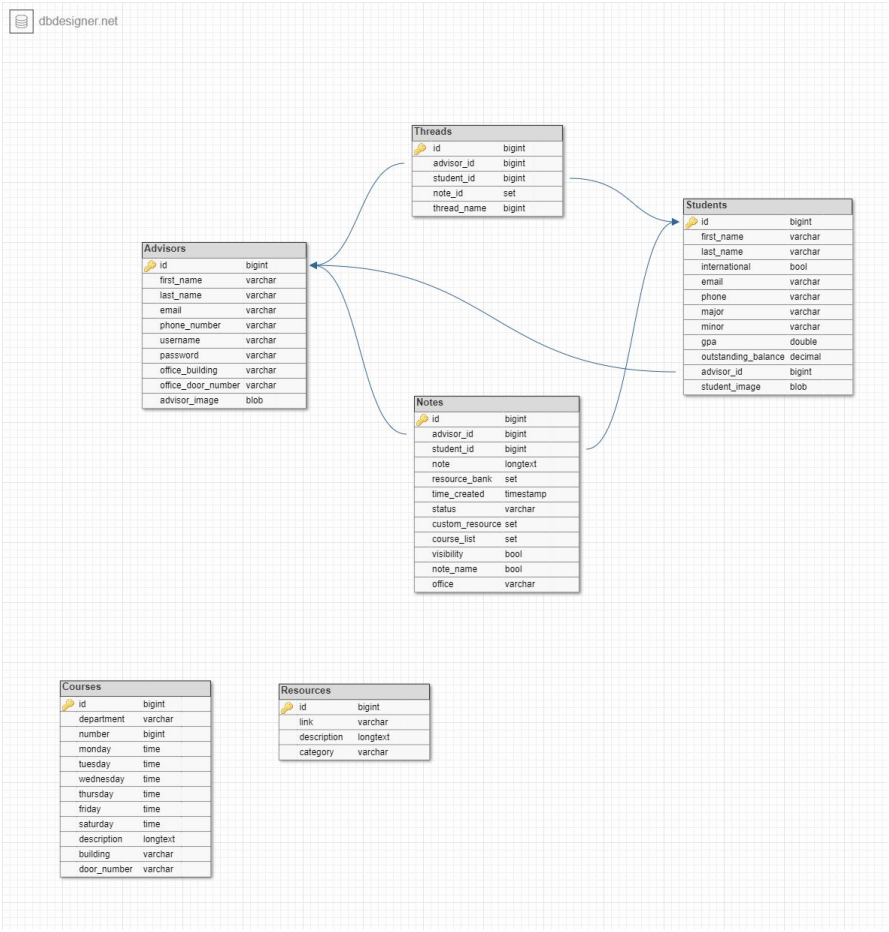
Team Lead. Responsible for managing the workflow and meetings. Facilitating user research and prototyping.

Final Project Design

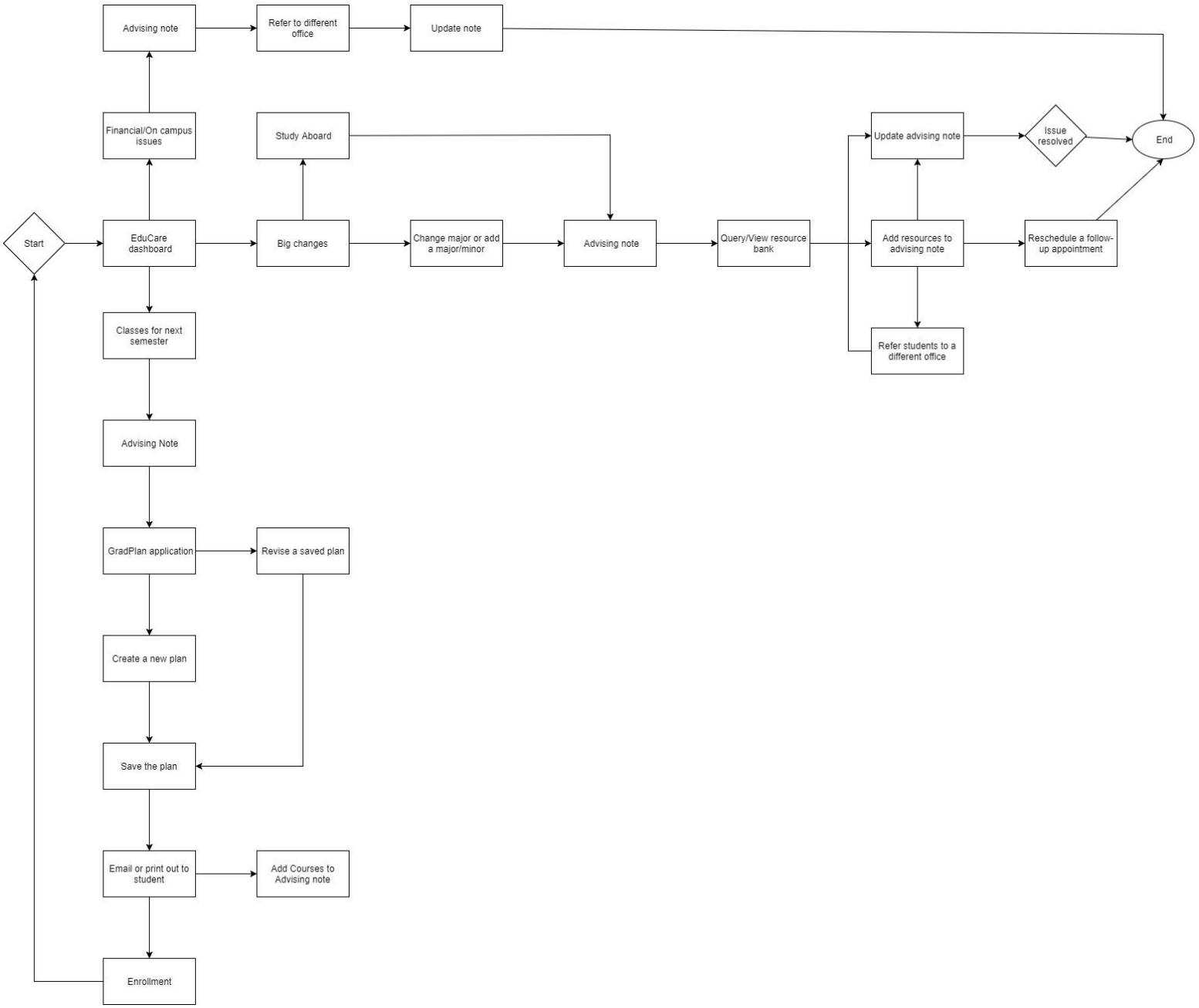
Backend

The backend will house the data for students, advisors, notes, courses. The data will be stored in a mySQL database that will either be hosted on EECS servers. The data will be used by the front end through an Node API that we will create. When working with along with the front end, the front end will pass queries to the backend where they will be processed and will return back an object in the desired format of the front end. The backend will be designed based on the needs of the front end. For example, the table for student profile will be only hold values that the front end of the project needs. The speed and resources will be optimized based on the need of the front end. For example, if the front end requires query-while-typing, the back end will be created so that it can return the desired result in the time requirements.

To the right: SQL Scheme



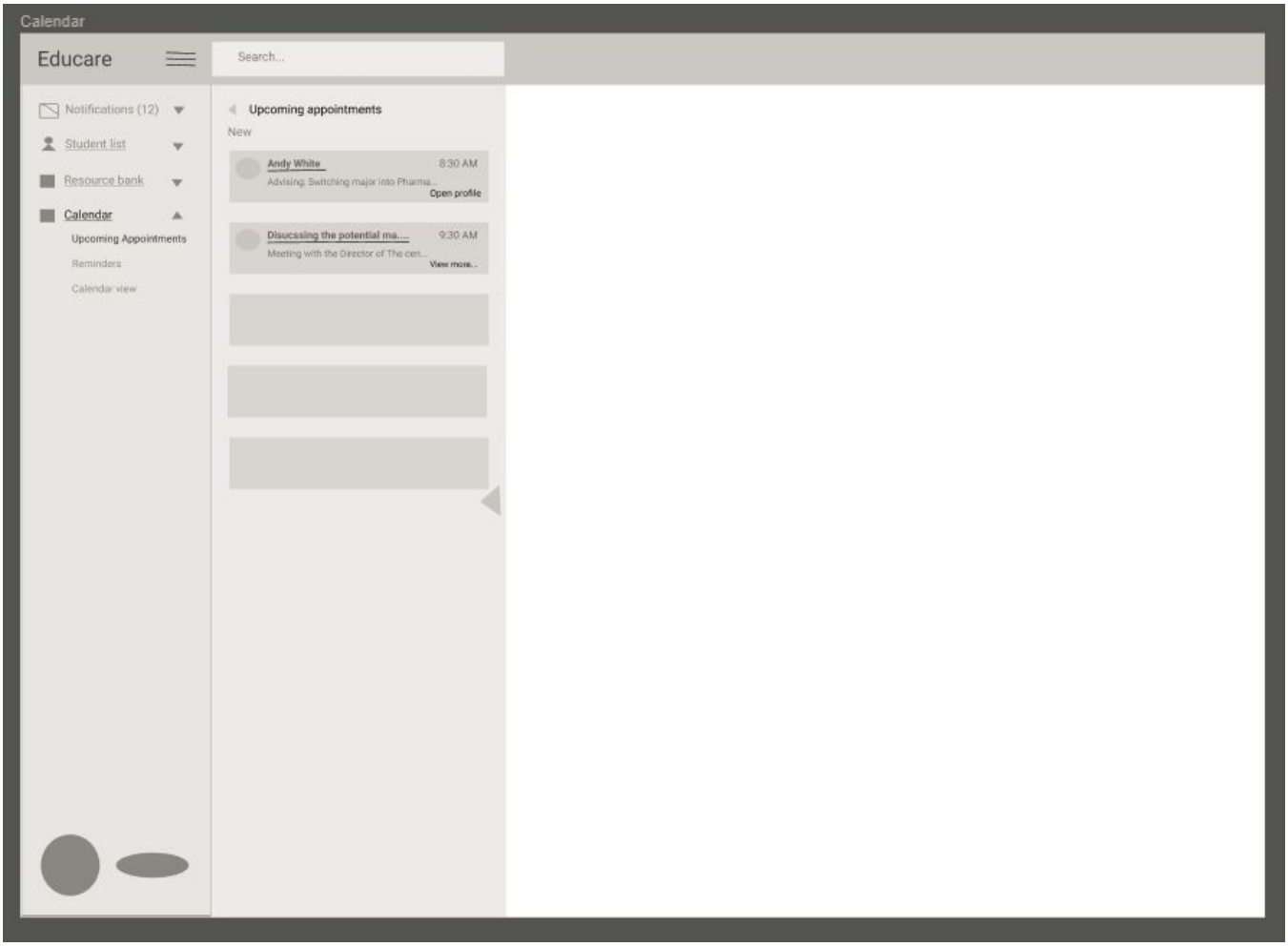
Frontend


Advising note
Refer to different office
Update note
Financial/On campus issues
Study Aboard
Update advising note
Issue resolved
End
Start
EduCare dashboard
Big changes
Change major or add a major/minor
Advising note
Query/View resource bank
Add resources to advising note
Reschedule a follow-up appointment
Classes for next semester
Refer students to a different office
Advising Note
GradPlan application
Revise a saved plan
Create a new plan
Save the plan
Email or print out to student
Add Courses to Advising note
Enrollment

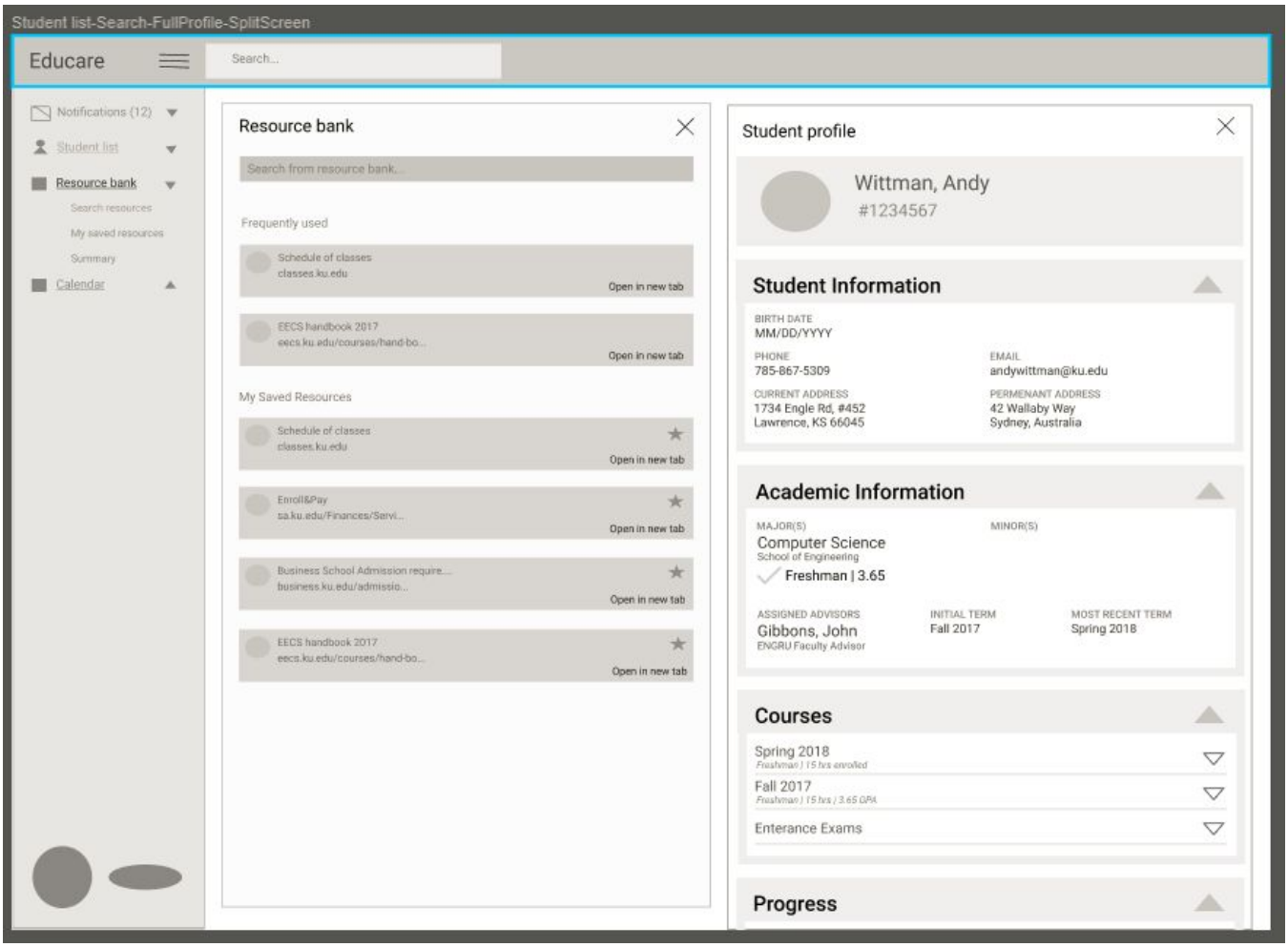
The flowchart above shows the primary interactions that the users will have with the dashboard. These flows were created based on the scenarios of main advising appointments.

According to the three main concepts, the wireframes are created:

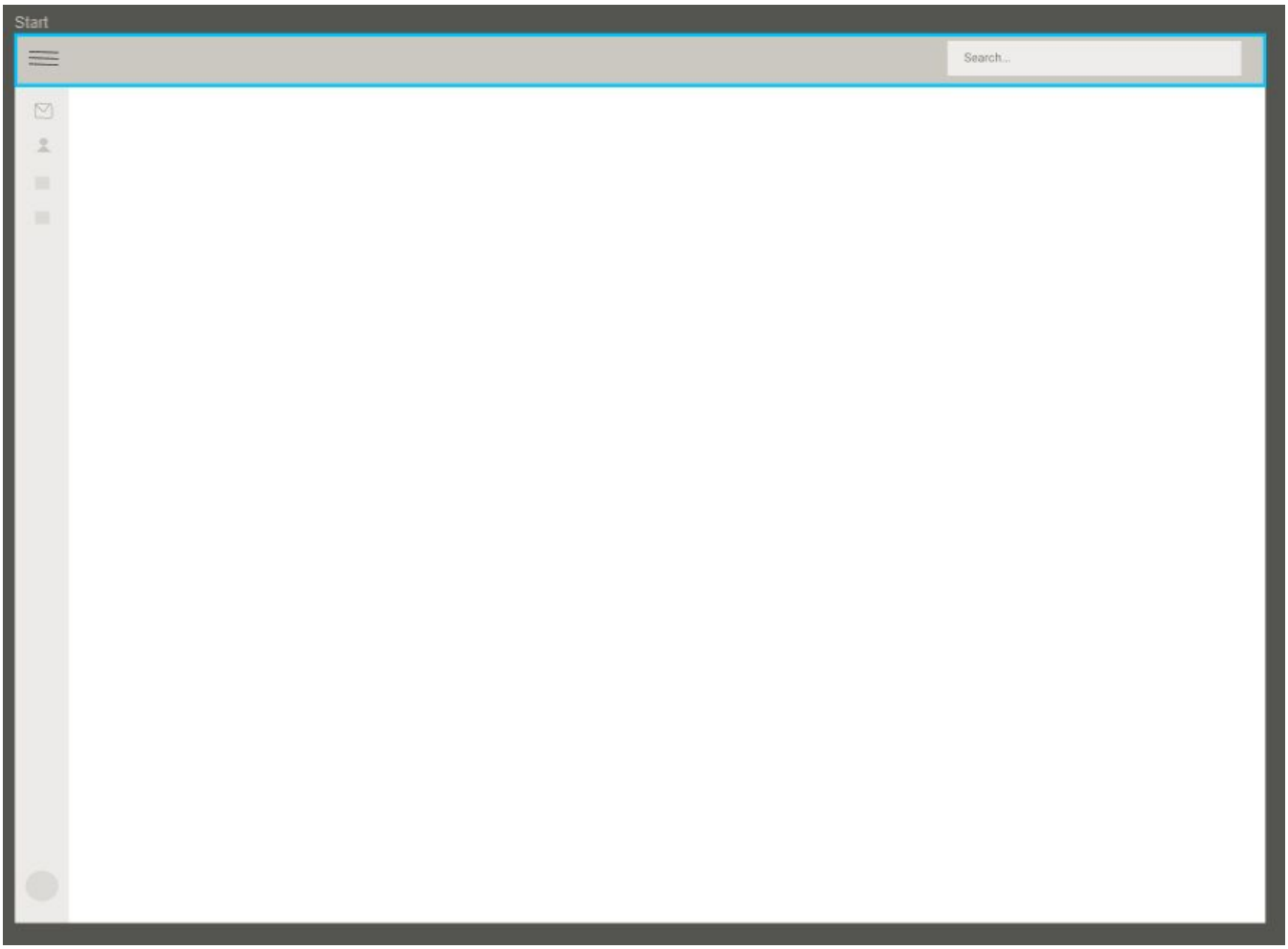
- **Time management**: The toggle sidebar alerts when an upcoming appointment is, having the option to be put away to the side. This feature gives users full space in the main content of the page, while keeping them updated with time and tasks when needed.



- **Task management**: Split screen feature gives the users full control and easy access to multiple tabs at the same time.

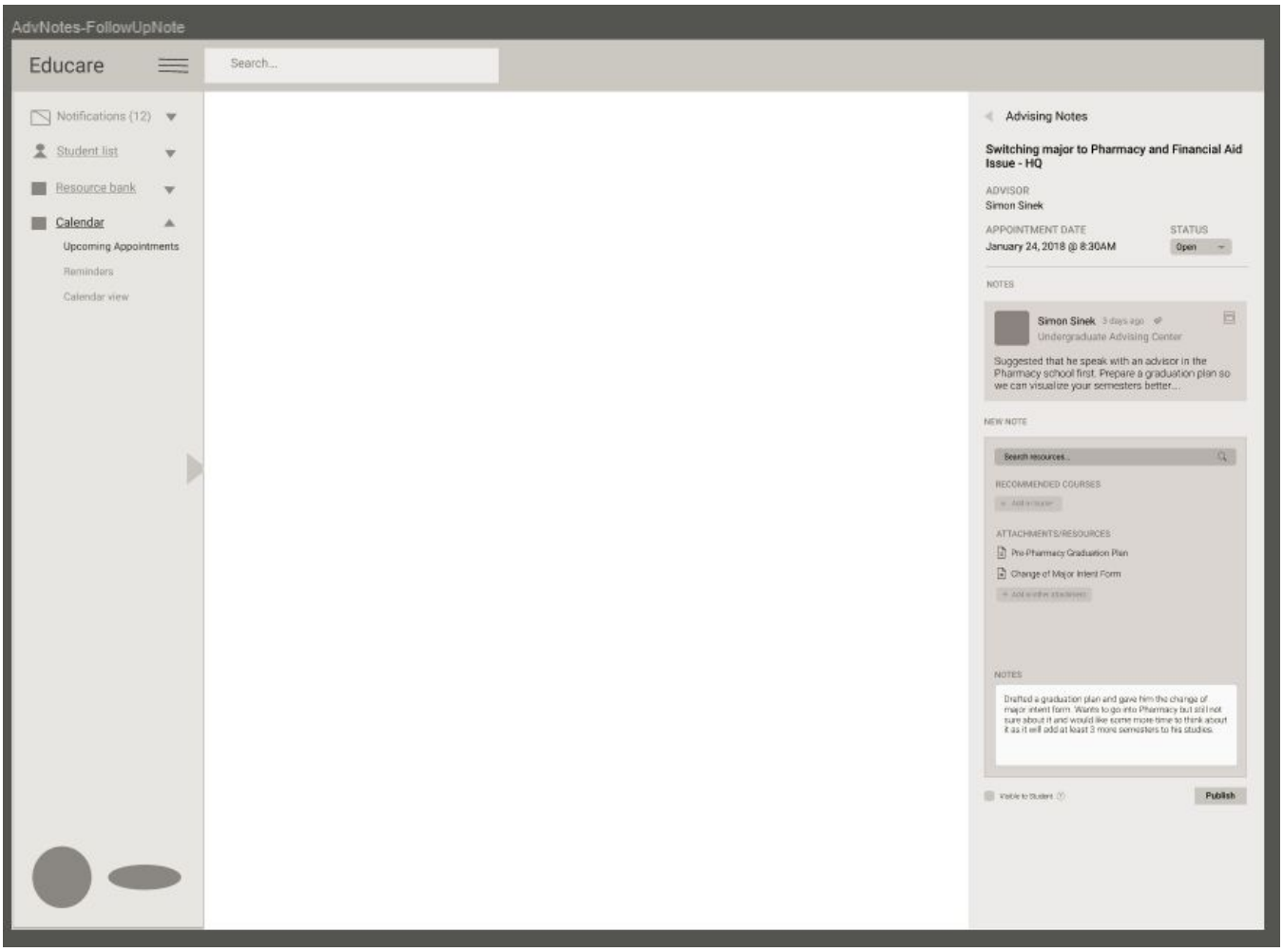


- The side navigation bar can also be minimized like below, giving the users more space and control over the layout of the page while working.



- Collaborative documentation: Advising note is pre-generated based on the categories that students select when making a new appointment. This helps the advisors to prepare in advance for the appointment, also makes it easy for them to type during the appointment. The advisors can also easily add new categories and attach resources in the note. After publishing a note, the advisor can also share the content with the student via email. This saves advisors time during the appointment and ensures a smooth workflow.

-



Wireframe on Figma: https://www.figma.com/file/VJfW2c1dECZIGWokAMZ71zRO/EduCare-v2

Ethical and Intellectual Property Issues

Ethical Issues

The main concern with potential ethical issues is student privacy. The academic advisors may not be authorized to view certain information. For example, they may not be authorized to see the student's outstanding balance or other financial information. Also, having a central dashboard which displays all the information about a student, including academic performances, extracurricular activities, personal information and personal interactions with other people, may cause a security concern. The staff members who have access to this web application must be authorized, trained and aware of security threats to avoid information leaking. The backend designers must also be responsible for keeping sensitive information for the student confidential, and free of security vulnerabilities.

Intellectual Property Issues

In this project we will use technology and libraries that is not developed by us. Some of these libraries include NodeJS, React Native, and MySQL. We will be hosting our database on the University of Kansas's EECS website. Since we didn't write the code ourselves we must take into consideration how we will give proper credit to the creators. When using code or API's we must properly give credit by stating its source and how it was used in our program. We must also state any authorized modifications that were made to the original code. On the note of modifications, we must read through any licenses and understand any limitations to the use of the code or API. This will ensure that we don't face any legal problems down the road.

Change Log

Project Description

We have completely eliminated a portion of our proposed project. It was determined that creating the web application for advisors and mobile application for students was too much work to complete by the end of the year. We will instead be focusing on the web application only.

Project Milestones

Phase 3 implementation was moved from a fall semester milestone to a spring semester one to align with our current progress. Final project pitch desk was added to documentation milestones.

Project Budget

We were able to find a KU provided or free service to implement our entire project, so the budget was reduced to $0.

Work Plan

Everyone has the same roles within the group, specific responsibilities are better defined now, though.

Final Project Design

Because of many changes in the product features and new user group, the final design is adapted to new findings and needs of users. Instead of providing a data analytics and recommendation systems for advisors, we provide tools for better workflow before, during and after advising appointment; information to connect advisors and students.