

Improving Efficiency of Centre for Students with Disabilities

Report for A02, UI/UX Design and Evaluation

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Table of Contents

1. General Description of The Project
2. Interview Questions and Answers
3. Observation
4. Analysis of Interview and Observation
 - o Functional Requirements
 - o Data Requirements
 - o Environments Requirements
 - o User Requirements
 - o Usability Requirements
5. Design Thinking
 - o Persona
 - o Empathy Path
 - o As-Is Scenario Map
 - o Ideation
 - o Sketches

General Description of the Project

A typical task of the employees of Centre for Students with Disabilities (CSD) is to provide support - i.e. ensuring adequate facilities are present within the classrooms and particularly the exam rooms - to students with disabilities who are currently within their database of students with special needs.

This is unfortunately hindered by their inability to ***efficiently track the courses such students are currently enrolled*** in since students sometimes drop or add courses during the semester and may not remember to inform the CSD office regarding that. This causes the CSD employees to check up on the course registration of each student one by one using the banner platform, which is a very time consuming and laborious task for them.

The main ***purpose*** of the project is to improve efficiency of daily activities of CSD employees so that they ***can focus on more important problems*** that clients of CSD face. It will allow the ***employees cater the needs of students***, as they will be aware of the necessity of the students well in advance. For instance, if staff are well aware of the test scheduled for the student, they are equipped with all the resources needed to assist the student.

Interview questions and answers

[Introduction and warm-up is omitted here]

How frequently do you check the student banner for student schedule?

It can be daily. If we were wondering if they were coming in for a test or exam that they've put a request form in for. As they can put a request form in early on in the semester. If they don't show up for a test or exam, we would check the banner to see if they're still in the class or if they've dropped it.

Ideally what we wanted to have is, if a student did drop a class and they were in our database, it will check with the banner and the banner will send us a flag to let us know that that student has dropped but we weren't able to get that. So now we have to manually go in every time to see if a student is still in one of the courses

Interview questions and answers

What prompts a checking?

If a student doesn't show for a test or exam that they have a request form in for, then we will check to see if they're still in the class, or maybe they were just ill and didn't contact us.

If we need to know the student's courses to contact the professors to let them know the student is going to be using the services of the center for note taking, test and exam accommodation etc. We would need to go in the banner to verify what courses they're in

Interview questions and answers

What services do you provide to the students?

Test and exam accommodation are big ones. So rather than the students write in the classroom, they would come here and write in a quiet environment with extra time, may use technology. Depending on what the disability is and depending on kind of the course content as well.

Note taking is another big one that a lot of our students have been using. They would have a voluntary note taker in the classrooms to help take notes for them and they would just get a copy of those.

Interview questions and answers

What is the current procedure of maintaining information?

We have an excel spreadsheet. And we have our [Application X] database is the one that we were paying for and is supposed to sync with banner to pull over the information so what that program was supposed to do for us was to sync with banner every night and we would get any course change information, any address, phone number change information getting from banner to bring over.

Interview questions and answers

So apart from the student schedules, you also would like student information to be reflected in the banner?

Email, phone number for sure. In case we ever need to get a hold of a student themselves, or their parents if their contact is on there as well in case of any emergency or anything.

On an average, how many times do you check the banner?

Daily.

Interview questions and answers

Once a day?

Not necessarily, it depends on the day and the number of students we would like to check on. Definitely in the beginning of the semester, we're on it often because – especially [CSD employee] who couldn't join us – he's the one that contacts all the professors. So he would go in to each individual students banner account and make sure they in this class and make sure that everything is correct or he would send out the contact to the professor.

With [Application X], we get a new application form we put their name and A# into that and then from that, that's what we were hoping would be able to sync the information. But now, we just use it as scheduling and kind of hold our own information there. It's more of a scheduling program with appointment history for us right now unfortunately but it is a place to house all of the information that we can put in.

Interview questions and answers

Can you walk us through the processes involved starting from a new student?

To become a client of the center, a student has to fill out an application form here and we would require documentation of disability. That could be anything from doctors letter any form of documentation from a medical practitioner that is going to say that this student has a permanent disability.

From there, we set up our meeting with [CSD employee], our advisor, and they would talk accommodation and look at what the needs of that student actually are. So at that point, after that meeting, he would then go in the banner, maybe before too to kind of get an idea of the course load before he meets with them and then from there he would contact the professors, to let them know the accommodations will be.

And then it comes down to checking if the students don't always tell us if they've dropped a course or if they've added another course and that is how we would check that. Banner is our only way.

Interview questions and answers

What did you expect the output to be?

Our [Application X] program is its own database program which was supposed to sync with banner and bring that information forward for us on a nightly basis.

What program?

Its an external program from a company in [Canadian province] that we have paid a lot of money for and it didn't ever work with banner the way we wanted it to.

Why do you think the program doesn't work?

IT couldn't get banner to sync with our program and they didn't have the time to spend to get it to work. What we were looking for is one place to go for a snapshot of information.

Interview questions and answers

What are the core things that you would like to see integrated?

Course information, email address and phone number. That's pretty much all that we need.

So that is the pain—point you're experiencing?

Yes. Because it is time-consuming to do it that way. We would like to get away from manual searches. Just for efficiency. It would be a lot easier.

Is it possible to miss a student?

Yeah, because unless we have a flag of why we're checking. If we had an initial sync every night, so any changes that could have happened daily, we would know. We would have an email sent to us saying so and so dropped this class or so and so added a course

Interview questions and answers

So, students have to submit an application and then you would check?

Right. The main reason for us to go back into the banner after that initial meeting would be for test and exam accommodations. As test spaces are limited here and we try to juggle where we are going to put students especially when it is time for finals. If the student isn't in that course anymore, we would know we don't need that room for them anymore.

How many years since the [Application X] was developed?

About 10 years ago. A lot of institutions are using it because they have the support on campus to make it work. We ran into that issue because we didn't have the IT support.

Interview questions and answers

But you were happy to work with that application, from the design perspective?

Oh yeah. Because we had spent so much time implementing it and it cost a lot of money and so we wanted to use it but we could not get it to work the way it was supposed to. It would be nice to have a database with student information in and then sync with banner somehow to bring over all the information that we need.

Interview questions and answers

Can students use this software applications somehow? Can it maybe notify them about some events or?

Ideally, the big picture back in the day was test and exam accommodations were going to be put in as well because it's such a big part of what we do so students will be able to login through SMUPORT and be able to put a test request form in and it would automatically go in to the application and our exam coordinator would get that alert. Rather than have paper forms or email form, it would all be within this database. Professors would be able to send tests through it, we would be able to upload tests to it, back to the professors and everyone would have their own portal piece to it. So, it was going to be a lot bigger but we didn't even get to that part.

But our system for test and exams, I'm sure it's not perfect. But it's working right now and the big concern would be getting the students information.

Interview questions and answers

Can you give us any examples of student's interaction with the system?

The only way the students can have access to it would be test and exam bit to it. That's the only way the student can have any direct interaction with it

Are there any reporting facilities available?

No. not for us. I think it would be hard when we have intake all year long. If it was just once a year, we could gather a list, send it to the registrar's office and know this is it. But when we have constant intakes, our list is always changing. We have a new applicant every day.

Thank you

Observations

Can you walk us through what you would do on the banner?

[CSD employee] demonstrated the processes

First, she logs into self-service banner, and then she signs in with her information. And then enters faculty services and then she selects student information, searches for students by name or A#. And then, she can see the student's information.

Analysis of Interview: Functional Requirements

The solution should be able to:

- Provide CSD employees with daily alerts on student activities (e.g., course drop, not showed up etc.)
- Maintain a database with all current students who are registered with CSD
- Provide a user interface that allows to browse a list of all current students who are registered with Centre and show at least the following information:
 - Student's phone number, address, e-mail address
 - List of courses
 - Schedule of classes
 - Schedule of exams
 - Special requirements
 - Emergency contact info
- The solution should interact with SMU banner system to get information about students from it
- The solution should be able to send notifications to students with different disabilities in different ways (voice or text with focus on disability)
- Students should be able to book tests/exams using this solution

Analysis of Interview: Data Requirements

- Type of data: persistent database storage with daily backups
- Amount of data: up to 2 gigabytes/year
- Accuracy requirements: no special requirements as working with floating-point numbers is not necessary
- The data storage should be fault-tolerant (e.g., redundant database or 3rd party data storage provider)
- Data should be secured so that no 3rd parties have unauthorized access to it

Analysis of interview: Environmental Requirements

- Physical
 - No special requirements. However, solution should be accessible in terms of interaction with students if there are such interactions
- Social: collaboration/corporation
 - Data is shared among multiple users. Race conditions/deadlock should be avoided while manipulating data
- Organizational
 - Should have an intuitive interface with no additional training required. Application support should be feasible by MCDA students
- Technical
 - Should work on any desktop machine with modern browsers
 - Internet connection should be provided
 - Should have access to SMU Banner system

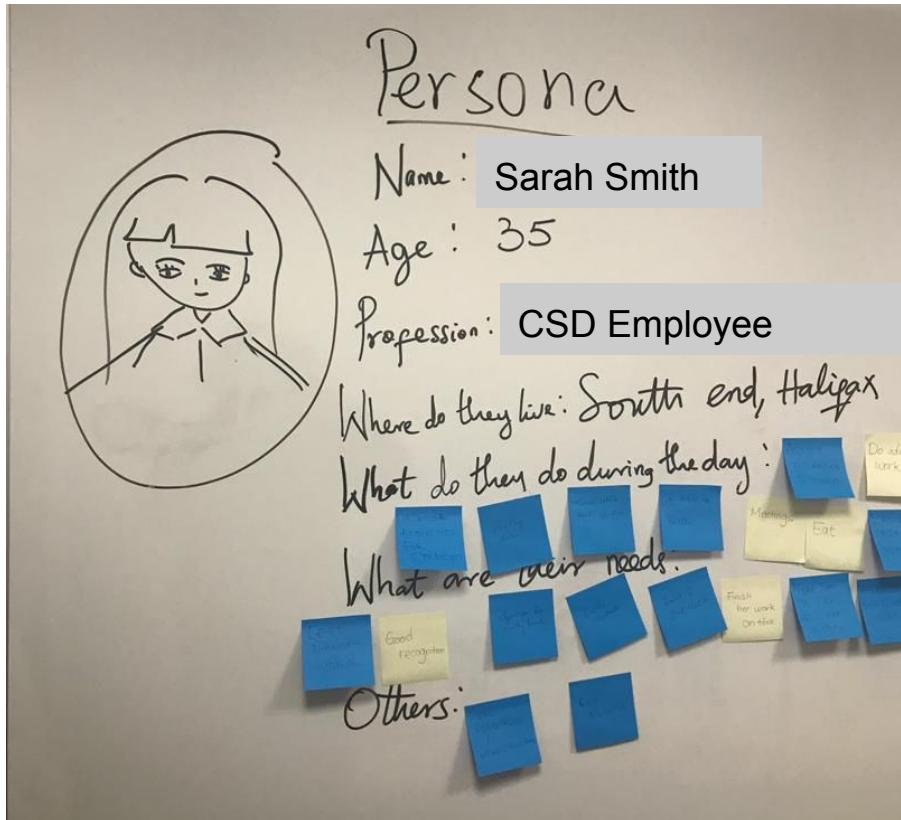
Analysis of interview: User Requirements

- Intended user group: CSD employees
- Type of user: casual
- Age groups: mature specialists (20+ years old)
- Abilities:
 - Basic computer skills
 - Knowledge of CSD working environment and daily tasks
 - No previous experience is required
- Special needs:
 - Clients are students with disabilities
 - Might be used by future employees with disabilities

Analysis of interview: Usability Requirements

- Reliability and responsiveness
- Field maintenance and serviceability
- Efficiency
- Intuitive design and learnability

Design thinking: Persona



Sarah Smith

Age: 35 years old

Profession: Centre for Students with Disabilities Coordinator

Where does she Live: South End, Halifax

Design thinking: Persona (cont-d)

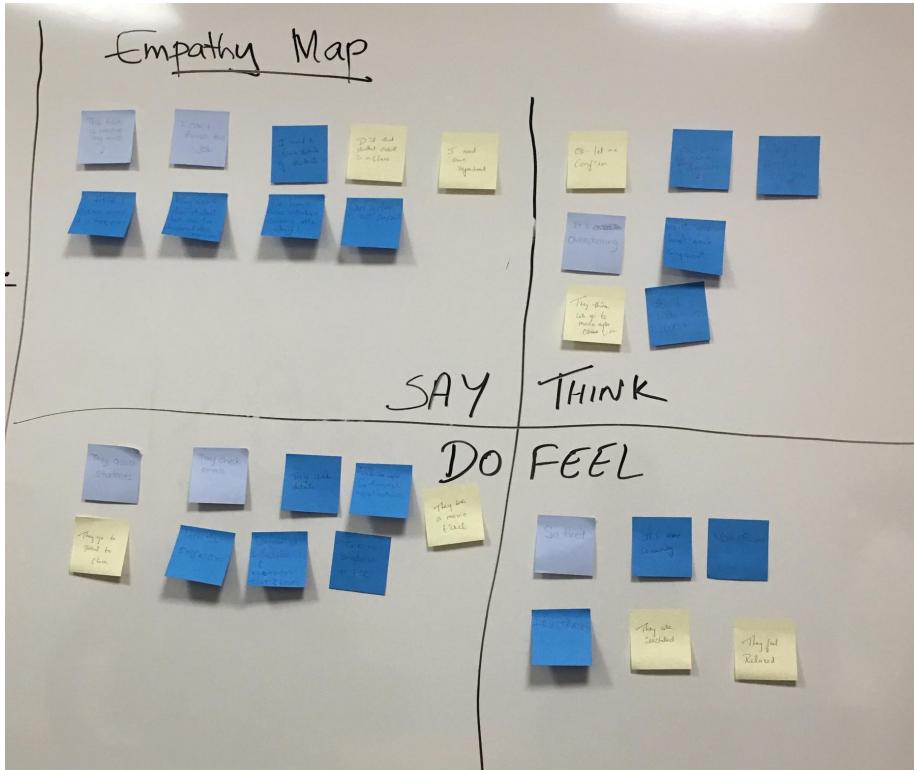
What does she do: Sarah and other Staff members of CSD offer wide variety of Services to the group of specially challenged students. Some of the services are listed below:

- i. Track Student Courses
- ii. Facilitating test and exam accommodations, and invigilators
- iii. Facilitating access to campus & community services
- iv. English Interpreting
- v. Volunteer Program
- vi. Academic Support

What are her needs: Sarah and her team access the information of their Students via SMU Banner Portal, but this seems to be inefficient and mundane to every time login to SMU banner and pull information of one student at a time.

Others: Sarah loves Coffee. She enjoys to spend quality time with her family. She loves reading books.

Design thinking: Empathy Path



Insights :

Pain Points /What Frustrates them:

- The repetitive and inefficient means of tracking students course details

Gain Points /What keeps them Motivated:

- Concern for students keeps them motivated
- She Feels Rewarded every time a student's need is addressed

Empathy Path(cont-d)

Sarah Says ...

- I need to track the details of Student.
- I hope I don't miss the details of student
- We have new students every alternate day.
- Checking out students details is so time consuming
- Did that student enrol in class?
- I need some refreshments.

Sarah Thinks

- I think the details can be checked from SMU banner
- Wish we had more good tracking software
- We need some efficient means of extracting details
- I need to attend the meeting after this.

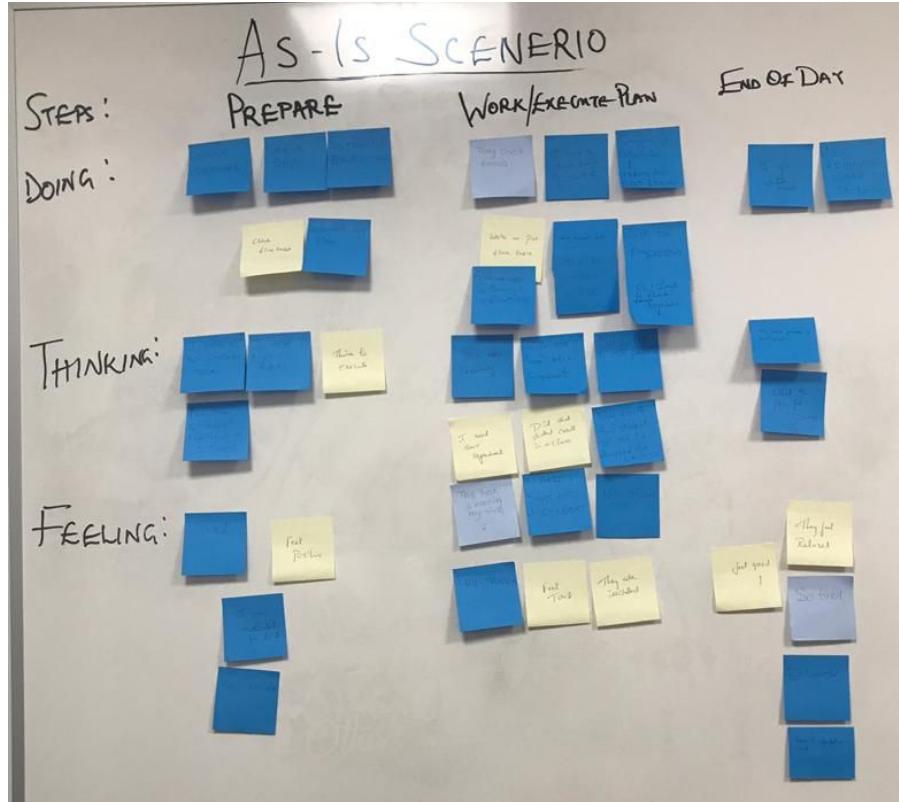
Sarah Does ...

- She checks mails
- Attends meetings.
- Schedules exam/test room and extra accommodations for students
- Assists them with resources needed
- Tracks details from SMU portal
- Talks to professors on students' progress

Sarah Feels

- Tired
- Inefficient
- Irritated because the process is mundane.
- Concerned on Students progress.
- Rewarded

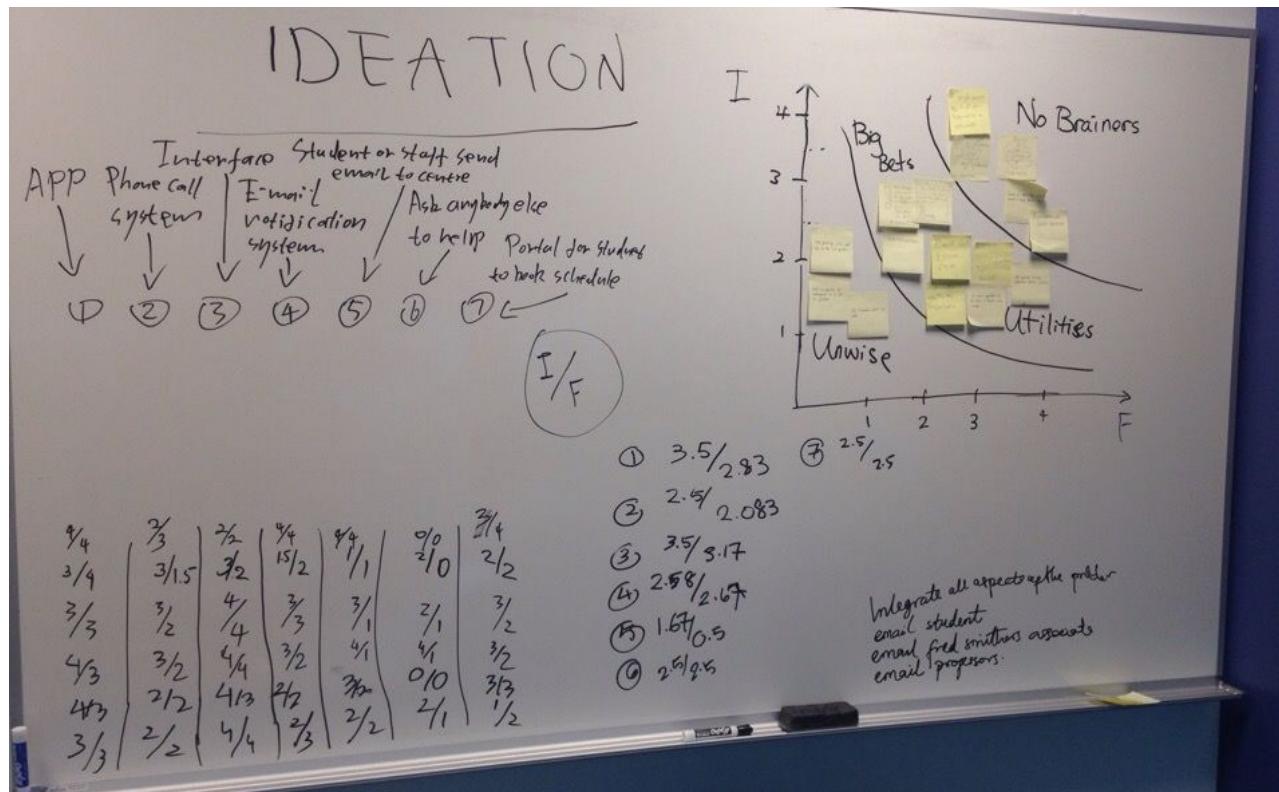
Design thinking: As-Is Scenario Map



Design thinking: As-Is Scenario Map(cont-d)

Steps	Prepare	Work/Execution Plan	End of Day
Do	Checks the Schedule for the day Reads Email Checks Weather Plan the activities	Work as per timetable Organizes and schedules rooms for test/exam Assist students in direction to find class Talks to professor on student's progress and course. Counsels students at CSD	Add remaining work to a to-do list Plans the evening time with family
Think	I hope there are not many students to assist today. I hope it doesn't rain today Are the students really doing ok?	The process is time consuming I wish had more support Our system is not perfect Did I check the details of the new students enrolled	Work process is inefficient Plans for Dinner
Feel	Positive Highly Motivated Tired	Good Irritated Frustrated Tired Motivated	Good Relaxed Tired

Design thinking: Ideation



Design thinking: Ideation (cont-d)

Ideation process gave us the following “clusters” of ideas:

1. Stand-alone application that can be used by CSD employees and can send notifications to both employees and students
2. Automated phone calling system: automatic interactive system that will call students and notify them about exams/classes so that they can press some button to confirm that they are going to attend
3. Self service banner add-on - just few new tabs in University self-service banner
4. Email notification system
5. Some additional physical person who can help with interaction between students and CSD employee or who can do routine work
6. Delegate problem to 3rd party company or ITSS
7. Create a separate portal for students where they can make/cancel requests for exam accommodations or ask for help with taking notes and other interactions

Design thinking: Ideation (cont-d)

After voting and placing our ideas on Importance-Feasibility graph we got the following results:

No-brainers:

- Stand-alone application (idea 1)
- Self service banner add-on (idea 3)

Big Bets:

- Automated phone calling system (idea 2)

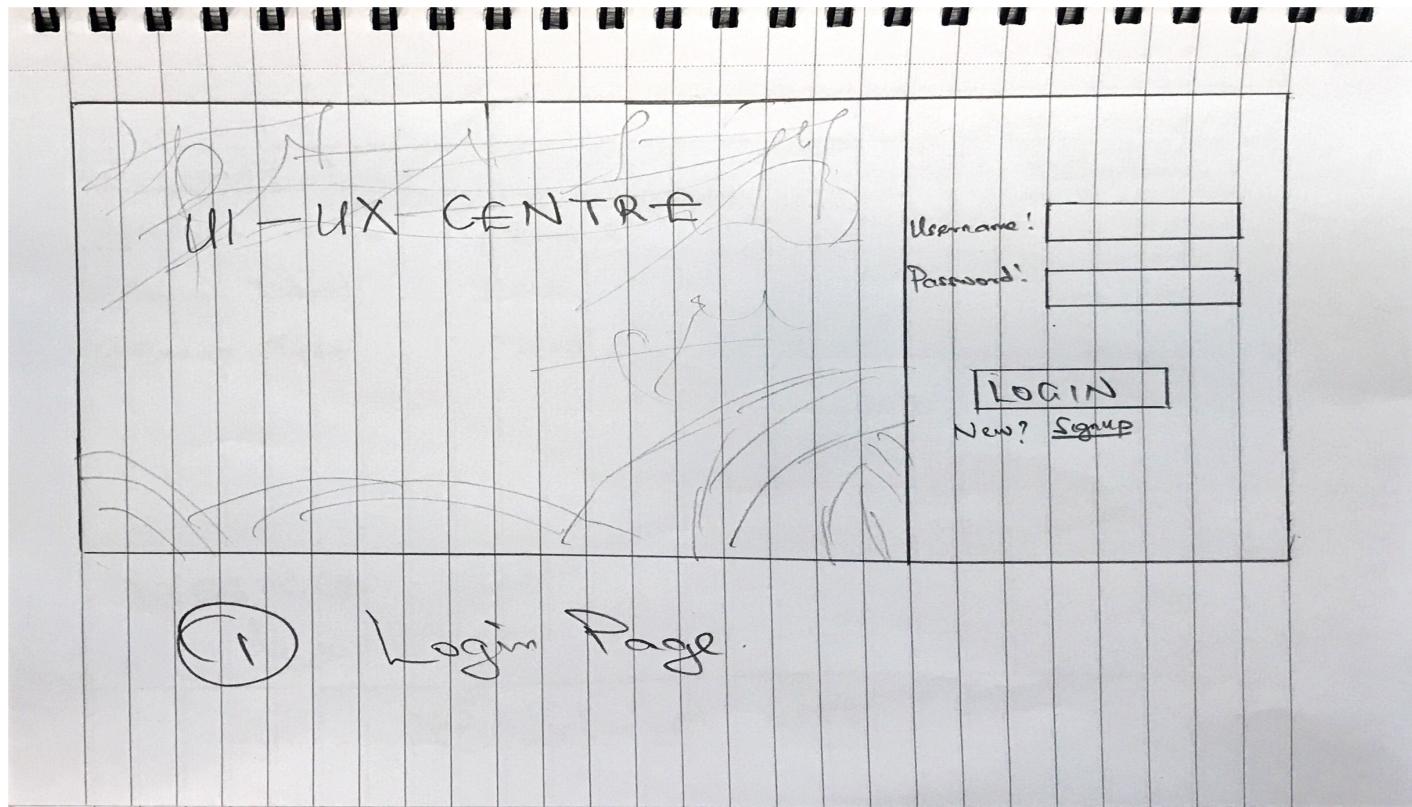
Utilities:

- Email notification system (idea 4)
- Web portal for students (idea 7)

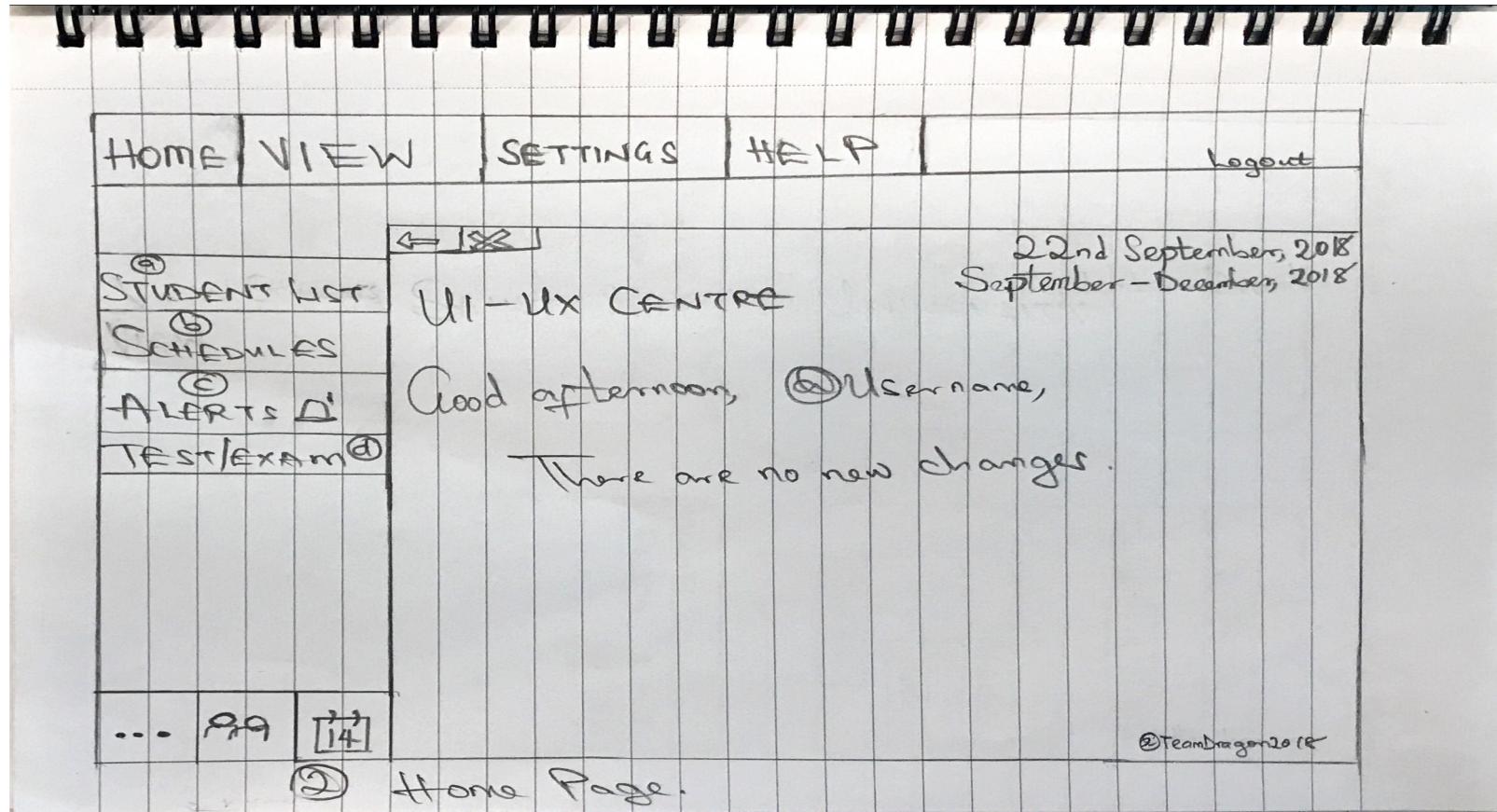
Unwise:

- Some additional physical person (idea 5)
- Delegate problem to 3rd party company or ITSS (idea 6)

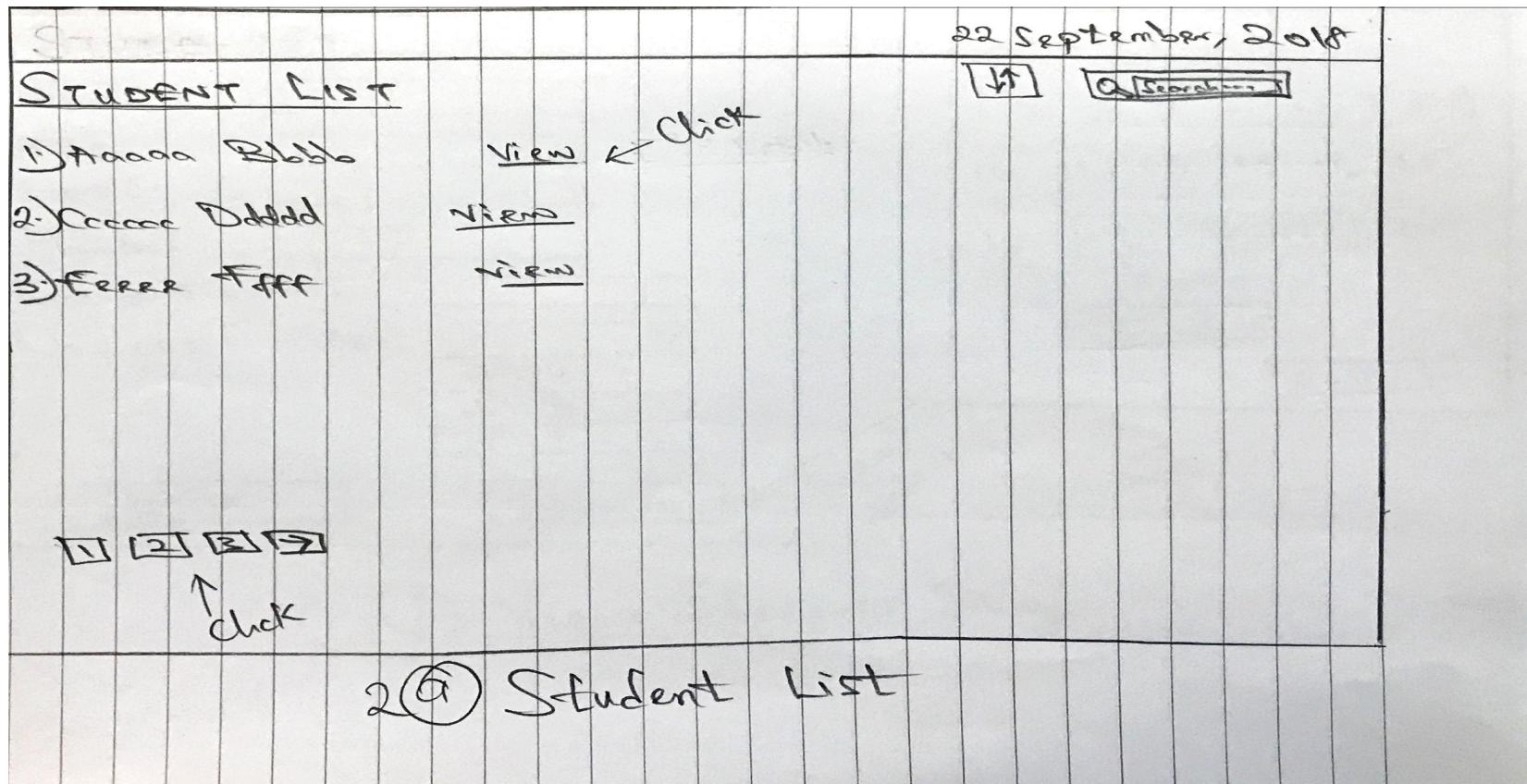
Design thinking: Sketches



Design thinking: Sketches



Design thinking: Sketches



Design Thinking: Sketches

STUDENT INFO

Name:	[Text Input]						
#:	[Text Input]						
Email:	[Text Input]						
Phone No.:	[Text Input]						
Emergency Contact:	[Text Input]						
Courses Enrolled:	<table border="1"><tr><td>F112</td><td>✓</td></tr><tr><td>F113</td><td></td></tr><tr><td>F114</td><td></td></tr></table>	F112	✓	F113		F114	
F112	✓						
F113							
F114							
BACK							
CHECK SCHEDULE							

26(i) View Students Page

CALENDAR

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15			
16	17	18	19	20				

Hover
FB260
2PM - 3PM

POP-UP window

EXIT

Design Thinking: Sketches

Alert:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Every 12 hrs	
	Every day	
	every 2 days	
	Every 5 days	
Receive Notifications By:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	SMS	<input checked="" type="checkbox"/>
	Email	
SET ALERTS		

②c

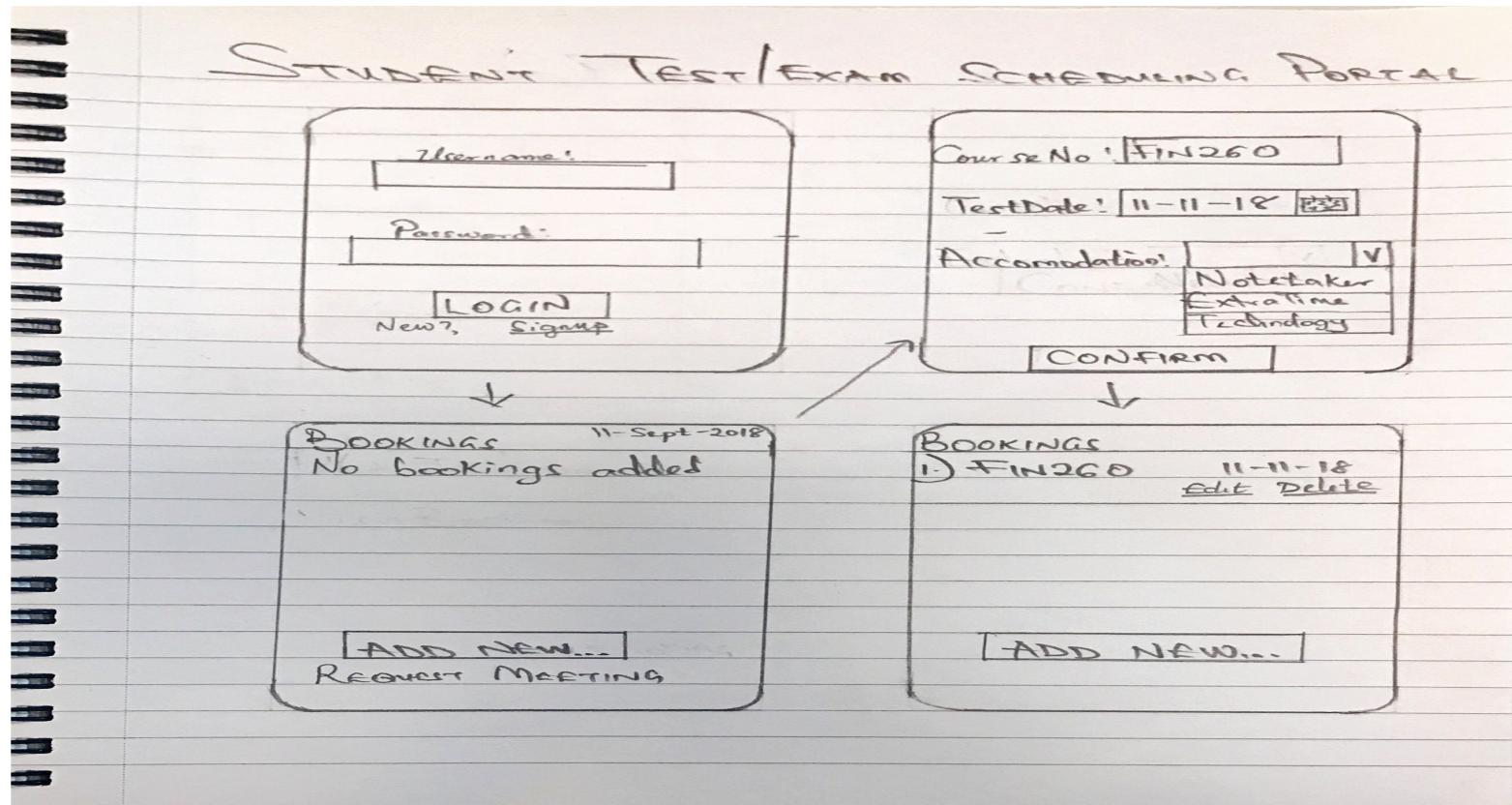
Set Alerts

Design Thinking: Sketches

STUDENTS	DATE	Room	COURSE
Aaaa Bbbb	10-03-19	R106	FIN2601
Cccc Dddd	11-03-19	R107	2141

2d Test & Exam Notification.

Design Thinking: Sketches



Design Thinking: Sketches

