

Middle School Guide for Academic Success

Design Document

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# Executive Summary

## Project Overview

The book “The Middle School Student's Guide to Academic Success: 12 Conversations for College and Career Readiness” introduces 12 tasks, which guide middle school students about how to start preparing for college at that age. However, for the students in the middle school, it is not an easy task to complete all the activities in the book independently. Thus, we designed an app to accompany this book, which can help and encourage the students and their mentors to complete the tasks and conversations presented in the book. In addition, the app will help parents or other mentors get involved, in tracking students' progress, reminding them to follow the plan, and encouraging them.

## Purpose and Scope of this Specification

In this document, the interface design and usability will be discussed. The initial ideas were based on the interviews with client and users, as well as the literature we referenced. The ideas of this document will be presented to our client and users, along with our prototype, then developer and QA tester for further improvement. The final document will be provided to our client as a starting point for further development of the app and more of its potential features.

# Product Description

## Context(s) Used In

The application will be used by the parent to check on student progress, and interact with student, by providing feedback, and reviewing upcoming tasks. While this can happen at any time or place, it will likely take place in natural downtime in the schedule, possibly a 5-30 minute session in the morning or evening. Considering it may cause students being stressful, the downtime schedule will only be shown at parent's view.

The student will use the application to complete supplemental activities related to the 12 conversations in the book. While this can happen at any time or place, it will likely depend on whether the app and book were introduced by the parent or as part of a school program. The typical time of use for the student depends on the conversation they are on and their natural ability and previous planning regarding college preparation.

The app should be completely accessible as long as the student and parent have access to the book.

The parent will likely use the application at home on their personal smartphone, although they could use it at work or anywhere else. The student might use the application at home wherever they normally study if it was introduced by their parents, but they might use it during homeroom or study hall if its use was directly connected to their school. They too, will likely use the application on their personal smartphone unless their school forces them to use another device as part of the program.

Per our client's initial proposal, the application will be used on a smartphone as a companion to the book. According to a study by Common Sense Media, 73% of students grade 6-8 have access to a smartphone. To reach as many families as possible, the application should be available on both Android phones and iPhones.

## User Characteristics

This application is for middle school students, which covers students age 11-14 and grade 6-9. They are probably not thinking about college, although they may think about their future more broadly. As such, they will probably not be intrinsically motivated to use the application. Their parents will likely have to encourage and guide them through the process.

While the degree of technological savvy varies from person to person, the students this app is targeting have at least a basic degree of proficiency with smartphone usage. They should also have at least an elementary level of English proficiency. They do not skew toward any one learning style, so the application should use a variety of media to present its content.

Parents will act as mentors for this application, guiding their children through the steps of college preparation and ensuring accountability throughout. They have bought the book to educate their children and possibly to refresh their own memory of college preparation. To accommodate the widest variety of parents, we are designing the app around use by one parent who has forgotten most of the details of college preparation. This critical type of user will allow us to cover other variations as well.

The parents in the application's target audience are college-educated middle-class parents. They have at least basic knowledge of smartphone use, as they own a smartphone themselves, and they have enough knowledge of English to complete a college degree.

## Personas

The book and companion application are designed to be completed by parents and students together. As parents and students play different roles in this process, their needs for the application are different as well. This section presents personas for two sets of parents and children to reflect the differences in those interactions.

# Lisa Jackson



*"I'd like to show him how important academic success is at this age."*

Family: Married with one son  
Location: West Lafayette, Indiana

## Long-Term Goals

- For her son to get a well-paying job he enjoys.
- Find colleges she can afford, ideally through financial aid.

## Immediate Goals

- Motivate her son to set and work toward personal goals.
- Make sure she's not missing any steps in the college preparation process.
- Feel confident about her college preparation schedule.

## Frustrations

- There isn't enough space in the book to schedule things or fully answer the questions.
- Worried she'll forget about things like college selection that will happen later.
- There isn't enough material in the book for parents.

## Bio

Lisa Jackson is a college-educated middle-class working mom with one son, Bruce, who is in 8th grade. She purchased the book "The Middle School Students' Guide to Academic Success" because she wanted to help her son start thinking about college and his future. She wants him to start taking more accountability for his grades and his future.

Lisa read the book with her son and completed some of the activities. The step by step nature of the book was very appealing to her. However, she wanted a little more information about some of the topics, as the book is written for a middle school audience. She also wishes there were reminders for completing the tasks in the book, as not all of them were applicable for her son when they first read it. Lisa and her son have also written things in the book and completed the activities, but there is limited space to answer the questions or to revise them over time.

Primary Persona - Parent

# Bruce Jackson



*"I've not exactly been thinking about college, but I certainly think about my future, how I want it to be, and where I want to live"*

Age: 12  
Work: Middle School Student  
Location: West Lafayette, Indiana

## Long-Term Goals

- Think about his future.

## Immediate Goals

- Make a schedule and set some goals.
- Bring his grades up.
- Stay inspired using the stories in the book.

## Frustrations

- Hard to find friends who use the book.
- Likes to use technology over books.

## Bio

Bruce is a child in the 8th grade from a middle class family where both of his parents have gone to college. He has thought some about his future but hasn't thought about college or what he wants to do specifically. Bruce's parents bought the book "The Middle School Students' Guide to Academic Success". He has been reading the book with his parents and they have completed some of the activities together.

He enjoys the stories in the book and sees the value in some of the tools, such as learning time management and goal setting. He hasn't found any friends who are also reading the book, so his conversation is limited to just with his parents. He enjoys using technology and would enjoy the information in a more interactive format, such as an app or website.

Primary Persona - Student

# Walter Cook



*"This book is a conversation starter and helps to give young students a vision of future possibilities"*

Family: Married with two children  
Location: Utah

## Long-Term Goals

- For his children to find a career they are passionate about.
- For his children to attend and excel in prestigious schools.
- Give his children every opportunity for success.

## Immediate Goals

- Talk with his son about exploring his interests.
- Set plans and expectations for college preparation with his son.

## Frustrations

- The book could have more resources for parents working alongside their children.
- Doesn't always know how to motivate his kids.

## Bio

Walter Cook lives in Provo with his wife, Sara, and their two children: Elijah (13) and Rose (8). He has a MBA and is a regional manager for an energy trading company. He was taught as a kid to make the most of your opportunities, and he tries to teach that lesson to his children.

Walter found out about "The Middle School Students' Guide to Academic Success" from a friend. While he read the book cover-to-cover, he primarily used the chapters as conversation-starters between him and his son. He agreed with the core message of accountability and wants to help his son start taking charge of his future. He believes that both of his children could do incredible things and have fulfilling lives as long as they apply themselves and consistently work towards their goals.

Secondary Persona - Parent



# Elijah Cook



*"I want to be able to apply to many different colleges. I'm learning what I need to do to be ready for college. I want my resume to have impressive things on it like volunteering, extra-curriculars, and interning."*

Age: 13  
Work: Middle School Student  
Location: Utah

## Long-Term Goals

- Go to a good college.
- Be independent.
- Live in lots of different places.

## Short-Term Goals

- Make a schedule.
- Get involved in extracurricular activities.
- Keep his parents happy

## Frustrations

- Hard to keep track of his schedule
- Needs reminders to set goals and remain accountable

## Bio

Elijah is an 8th grade student who lives in Utah. He comes from an upper middle class family where academics have been prioritized. His parents both went to college and he knows that he also wants to go to college someday. He is a good student and knows the importance of getting good grades. His parents have bought the book "The Middle School Students' Guide to Academic Success" and he has been reading it with them.

He liked learning from other kids' success stories in the book instead of just being lectured over and over by his parents. He hadn't realized how important extracurricular activities were, and he wants to incorporate more of them into his schedule. However, he does struggle with setting goals and remembering to follow through with them. Currently his father reminds him of his activities but both Elijah and his father want him to be able to keep track of his obligations and schedule on his own.

Secondary Persona - Student

## Scenarios

### Scenario 1

1. Lisa Jackson is sleeping peacefully, and then the alarm goes off. She walks down the hall and tells her two boys to get ready for school. Then she's getting dressed for work, checking on the boys again and finding them back asleep, making breakfast, packing lunches, making sure the boys have everything in their backpacks, giving them breakfast, and sending them out to the bus. Whew. She finally sits down for a second with her morning coffee and sees a notification on her phone. Jared, her middle-schooler, has completed his assignment for conversation 4.
2. Lisa pulls up what Jared wrote and skims it. It's obvious that he just rushed through it, but there's still some good stuff there at its core. She'll review and discuss it later today, so she sets a reminder for when she gets off work.
3. Lisa glances at the clock and takes another sip of coffee. She should be going soon, but she wants to know if she and Jared are still on schedule. She looks on the app and sees that their next deadline isn't for another two weeks. More than enough time

to get everything done. She puts down her phone and grins. At least one part of her morning has been easy.

4. After work, Lisa gets her reminder to talk with Jared about his assignment. The app suggests some alternative conversation starters to get at the core of the assignment. The conversation goes well. Lisa felt like she had the tools she needed and Jared responded a lot better to one of the alternative framings. She was happy to hear him talking about his future.

## **Scenario 2**

1. Bruce Kimmel sat down at the desk in his bedroom and pulled out his phone. His mom was downstairs making dinner. Bruce had a notification about working on conversation 1 today. He figured he would probably go to college someday. His parents did. It was just a thing you do when you grow up.
2. Bruce watched the video for the first conversation. It was on goal-setting, and was more interesting than he had expected. He wanted to be a scientist, like on Myth-busters.
3. He wrote about his dream, and the app helped him through setting some really basic goals. It helped him add some reminders and calendar events to his phone to help him remember to work toward his goals.
4. Once he was done, the app said that he got a badge for completing that conversation. At first he laughed and thought it was kind of lame, but then he had to admit that he did kind of like it. If his parents were making him go through this app, at least it wouldn't be completely boring.

## **Scenario 3**

1. Walter was sitting with Elijah at their dining room table. Walter's phone was propped up in front of them, and they were watching a video about conversation 2.
2. Once the video finished, Walter started asking Elijah about the things he did throughout the day and then about how he kept track of them. Elijah showed his dad his class schedule.
3. Walter went back to the video example to illustrate how to make and keep a schedule. He found some resources in the app for Elijah to work on scheduling.
4. The two of them started filling in the schedule, and then Walter let his son finish on his own. He was glad that Elijah seemed to be taking more responsibility for his own life.

## **Assumptions**

- Students and/or parents have smartphones
- Parents aren't imposing a career choice ultimatum on their children



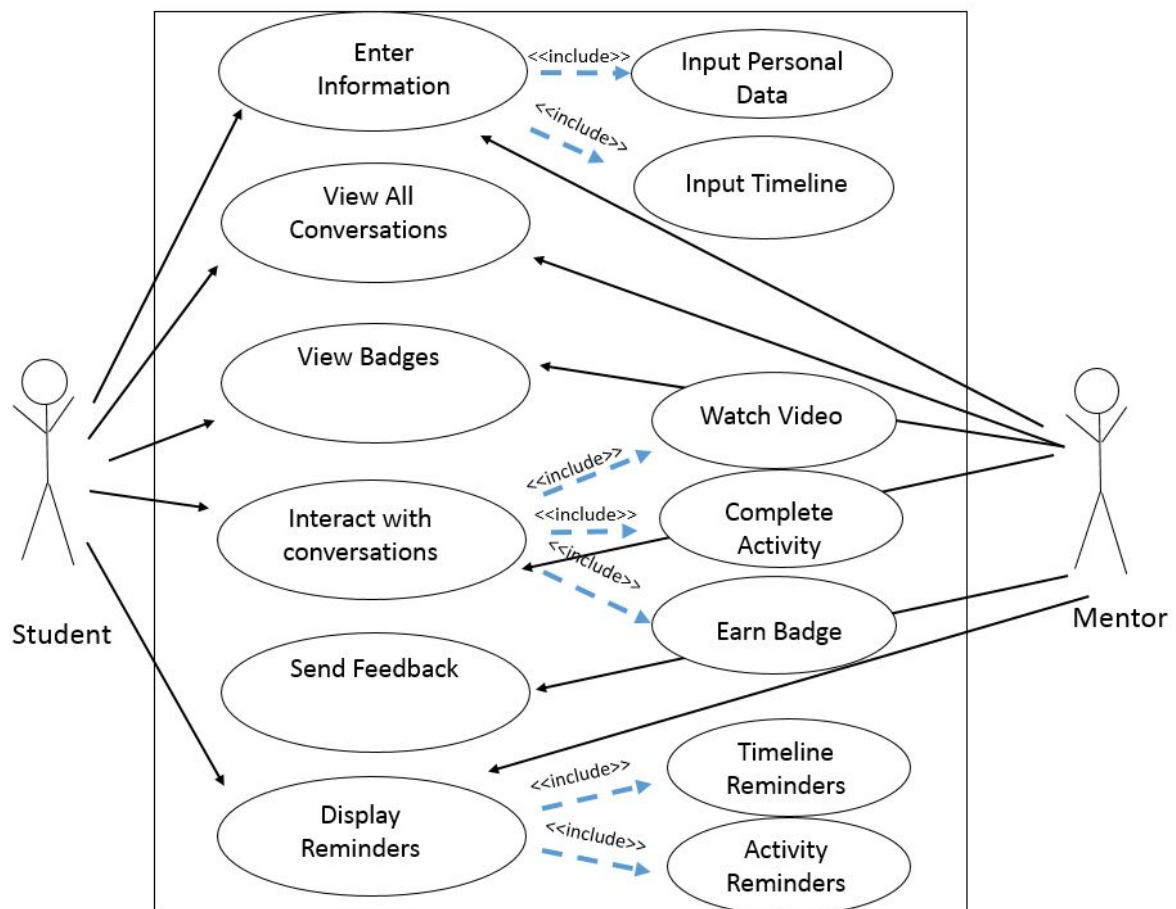
- Parents and children have a relationship that allows the necessary communication for discussing college preparedness

## Dependencies (if applicable)

- The application will not replace the book. The content in the book is necessary for a complete understanding of the activities in the application as a reference.

# Functional Requirements

## Use Case Model



## Detailed Functional Requirements

## 1. Interact with Conversations

This use case occurs once a user has selected a specific conversation. Users can see the various pages and information contained within each conversation and will be able to complete activities associated with each conversation.

1.1 The system shows a screen with the name of the conversation and options to view video, see more info, or complete the activity

### 1.2 Watch Video

1.2.1 The system displays the correct video corresponding to the conversation topic

1.2.2 The user can watch the video, pause, or move forward or backward in the video

1.2.3 When the video is over the system will prompt the student to complete the activity

### 1.3 Complete Activity

1.3.1 The system will display the activity associated with the conversation

1.3.2 There will be text boxes for students to input answers or info based on the activity associated with each conversation

1.3.3 The system will save the progress and make them available for the students and parent to view. The students can exit the activities and come back later to continue their task, if they cannot complete it at once. Once they complete the task, they can click "Submit" to submit their responses, the final submission can be viewed by parents.

### 1.4 Earn Badge

1.4.1 The system will check that each activity in a conversation has been completed

1.4.1.1 If not all activities are completed, the system will display how many tasks remain before the badge can be earned

1.4.1.2 If all activities complete, the system will display a congratulations message and a picture of the badge

1.4.2 The system will keep track of badges students have earned

1.4.3 Badges will be grouped based on difficulty, to provide students feeling of achievement when their levels are increasing.

## 2. Send Feedback

This use case allows the mentor to communicate with the student by sending feedback on completed activities and responses that the student enters, or sending reminders to keep the student on track and help them to learn accountability.

2.1 The mentor piece of the system will recognize if the student has submitted an activity

2.1.1 Once the student has submitted an activity, the mentor will receive a notification that the student has updated an activity

2.1.1.1 The mentor will be directed to view the student's response

2.1.1.2 In a text box below the response, the mentor can choose to write feedback

2.1.1.3 For the mentor who write feedback to student, they can then clicks submit

2.1.1.4 If the mentor send feedback to student, the student will then receive a notification that the mentor has given feedback and can view it

2.1.2 If the student has not completed an activity within the timeline deadline the mentor will receive a notification asking to send a reminder

2.1.2.1 The mentor can choose to send a reminder

2.1.2.2 The mentor will be directed to select a prewritten message or write their own message

2.1.2.3 The mentor clicks submit and the student receives a notification

2.2 The system will allow students to see feedback.

### 3. Display Reminders

This use case allows the users, both mentor and student to view reminders about their progress through the book as well as reminders they have set as part of some of the activities in the app. They can view reminders for which conversations to do next, or reminders about time management or other tasks, based on what they have entered in various activities

3.1 Home screen will have a reminder section

3.1.1 User clicks the reminder section

3.1.2 System displays reminders about timeline and about activity

3.2 System Displays reminders about timeline progress through the book

3.2.1 System retrieves info about timeline user entered during app set up

3.2.2 System retrieves info about activities that have been completed.

3.2.2.1 If the user has completed the activities in accordance with timeline, it displays a positive message

3.2.2.2 If the user has not completed the scheduled activities, the app tells them how many days they have, to do so

3.2.2.3 If there is a new activity that needs to be done soon, the app displays what the next activity or conversation should be

# Parent App

~~Parent App~~  
reminders

Now Jan 16, 2016

- ☐ Zanks: Choosing schools
- ☐ Mo: Applied to schools
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_

October

1 2 3 4 5  
6 7 8 9 10 11 12  
13 14 15 16 17 18 19  
20 21 22 23 24 25 26  
27 28 29 30 31

November

1 2 3 4 5 6 7 8  
9 10 11 12 13 14 15  
16 17 18 19 20 21 22  
23 24 25 26 27 28 29  
30

January

1 2 3 4 5 6 7 8 9 10 11 12

February

1 2 3 4 5 6 7 8 9 10 11

TIMELINE	
<input checked="" type="checkbox"/>	DEC 12
<input checked="" type="checkbox"/>	JAN 1-12
<input checked="" type="checkbox"/>	JAN 16
<input type="checkbox"/>	FEB 4
<input type="checkbox"/>	FEB 6-22
<input type="checkbox"/>	FEB 29
<input type="checkbox"/>	MAR 5

(Are they different?)

STEPS	TIMELINE
<input checked="" type="checkbox"/>	Dec 12
<input checked="" type="checkbox"/>	Jan 4
<input checked="" type="checkbox"/>	Jan 25
<input type="checkbox"/>	Feb 4
<input type="checkbox"/>	Feb 17
<input type="checkbox"/>	Feb 27
<input type="checkbox"/>	Mar 5

NEXT STEP

☐ Choose 5 colleges

TIMELINE

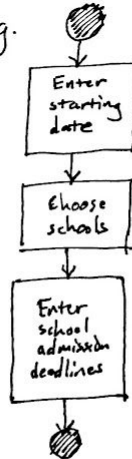
January

1 2 3 4 5 6 7 8 9 10 11 12

Ask questions to get the hard deadlines. Build the schedule around that.

As much as possible at beginning. Add in more dates, e.g. college application deadlines, as part of tasks

e.g.



Back New Event

TASK

Apply to Parks

DATE

Jul 20, 2016

NOTES

\_\_\_\_\_

\_\_\_\_\_

+

→ Add new event

NEXT STEP - JANUARY

☐ 21<sup>st</sup>

TIMELINE

JANUARY

☐ 6<sup>th</sup>

☐ 10<sup>th</sup>

☐ 21<sup>st</sup>

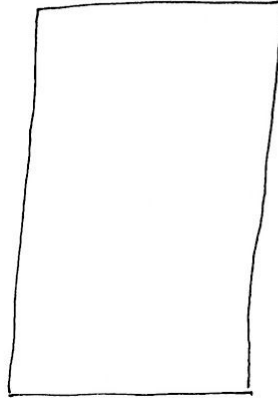
FEBRUARY

☐ 4<sup>th</sup>

☐ 19<sup>th</sup>

MARCH

☐ 2<sup>nd</sup>



~~Functional~~ Functional

Set goals

1/4 ☐ >

Time Mgmt

0/6 ☐ >

Group by year

7<sup>th</sup> Grade

8<sup>th</sup> Grade

9<sup>th</sup> Grade

10<sup>th</sup> Grade

Apply to colleges >

(Grade as grouping (att))

7<sup>th</sup> Grade

8<sup>th</sup> Grade

9<sup>th</sup> Grade

10<sup>th</sup> Grade

Could produce anxiety if people fall behind the "norm".

# PARENT VIEW

Conversations

Schedules Goals

Badges

Finished Goals

Calendar

More

Conversations

Phase 1

Conversation One: Goal... [Sug]

Conversation Two [Sug]

Conversation 3

Phase 2

[Sug]

Accordion view to categorize phases of conversations.

button to suggest the conversation to child.

Finished Goals

Great Job Jimmy!

Submit

Calendar - Jimmy's

Volunteer

playtime Gaming

Suggested College.

P Flagged College for Suggested College

Suggest Purdue?

Yes Cancel

Briar's list of colleges.

Button to endow.

Purdue Details

Avg GPA: 3.00

Acceptance Rate: 66%

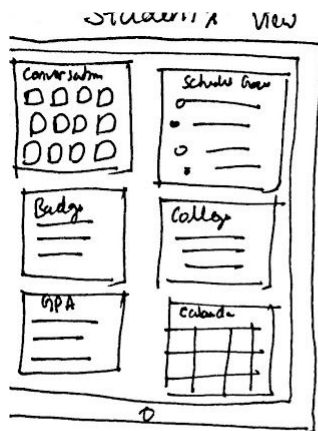
Tuition Fee: \$\$\$

Ranking: ==

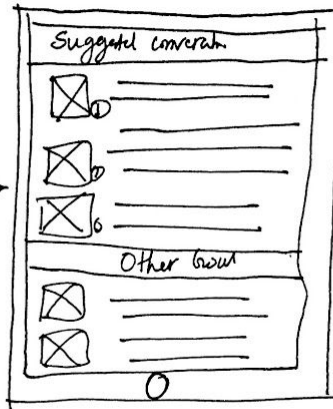
Scholarship: == \$\$\$

Popular Programs: ==

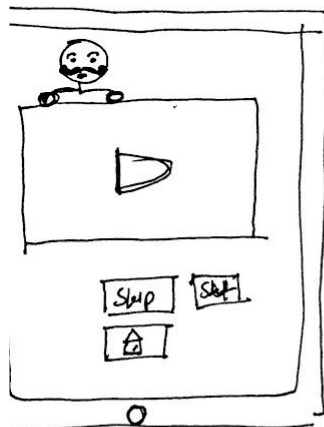




Notification



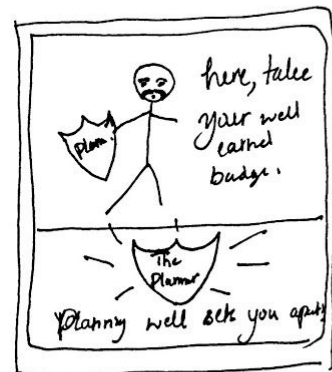
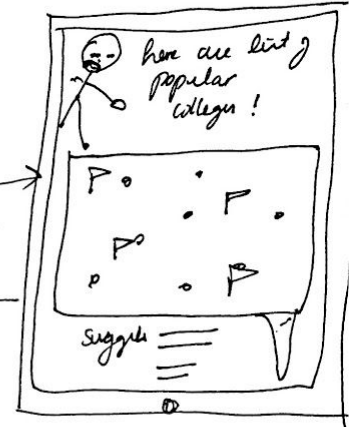
Select this



Setting On



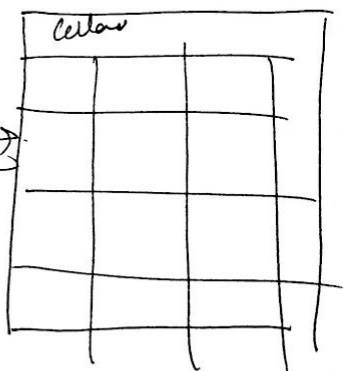
list of cities

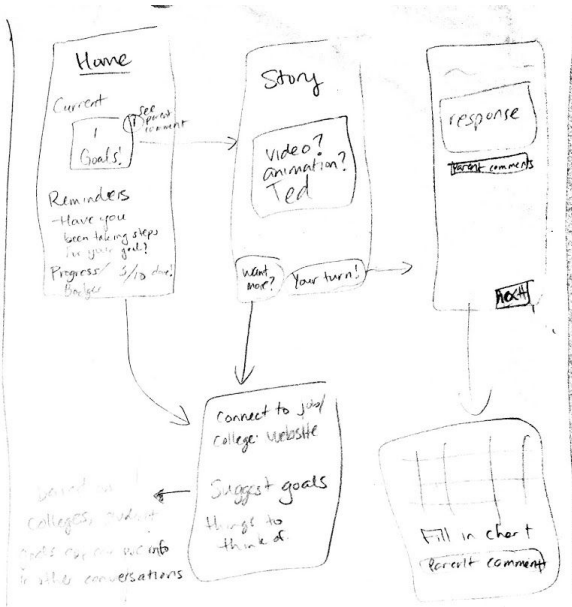
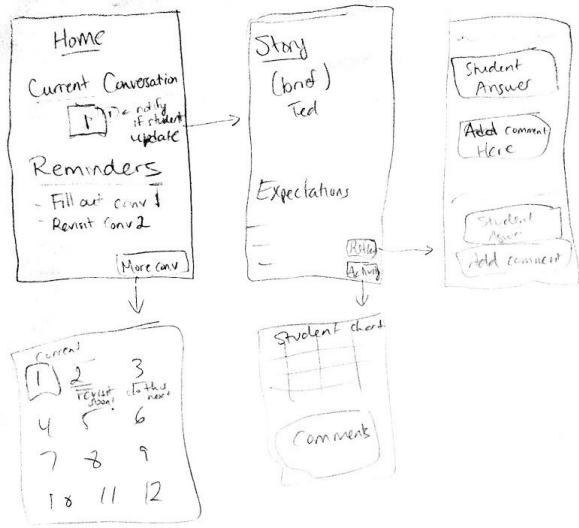


→



↔





log in

Sign up

email, phone #,  
Facebook, etc..

connect with  
mentor's account

student's account

basic info

= age, grade

- GPA and/or percentile in class
- Dream colleges <see details>
- Family annual income: <see details>
- preferred major/job in the future <see details>

university <click for details>



sort by:  
accept rate  
tuition  
GPA  
scholarship offer....

mentor's view

family annual income

10,000 - 20,000  
20,000 - 50,000  
50,000 - 100,000  
100,000 - 200,000  
200,000 - 300,000  
300,000 - 1,000,000

choose your top 10 interested major

Engineering <click for details>

Science ✓

Art ✓

Medical ✓

AAA Univ. <see photos>

accept rate

tuition

size

GPA

college visit date

SAT

deadline

click to follow

college list

AAA Univ.

BBB Univ.

...

See mentor's list

See student's list

See Joe's list

major list

Major A <see recommend colleges>

Major B <see recommend colleges>

...

GPA

current: 3.00/4.00

AAA Univ: 3.20/4.00

BBB Univ: 2.80/4.00

XXX Scholarship 3.00/4.00

Time management

- class schedule.
- school assignment deadline.
- frequency of task.

easy ☐ ☒ ☐ hard



Calendar

recommend daily schedule.

mentor's view

task click & choose

□	Ⓢ	□	□
□	□	□	□
□	□	□	□



Student's view

2

click for instructions



Student's view

instructions

⏏



Student's view

accomplish!

👑



mentor's view

□	●	□	□
□	□	□	□
□	□	□	□



mentor's view

announcement

GPA tracker

due Dec, 2016

last completed May, 2016

school select

due May, 2017

last completed May, 2016

school assignment A

due Nov. 1, 2016

⋮

extra curriculum

sort by

- volunteer
- school visit
- intern
- part-time

click for detail



XYZ

time:

location:

basic info:

contact:

⋮

annually performance report

completed task:

improvement:

< adjust college list

< adjust major list

# Non-Functional Requirements

## Usability

- **Ease of learning:** The system must be easy to learn to use for both users experienced with similar systems, and new users. One of the important factors that will be taken into consideration is the ease of use for the first-time users. It is important to avoid the frustrations the user will encounter while accomplishing the task. The design is more focused towards the discoverability aspects to enable to finish a task with limited instructions. This can be achieved by efficient usage of signifiers and affordances within the application. Since the application is being designed for mobile phone, users will have less screen real estate. Minimalist design and good signifiers can make the application more usable. All these aspects will be tested during the usability testing to identify any such learnability issues.

- **Task efficiency:** The system must be efficient for the frequent user. This aspect enables the users to quickly perform task once they've learned to use the application. The application is designed in such a way that users need minimal effort to browse through the application and finish the tasks quickly. For example, a minimal home page will be provided with metro-tile display to consolidate and show upcoming tasks. Several such things were kept in mind while designing the prototype. Because, the application is being designed for phones, it is important to implement FFitt's law (Bi, Li, & Zhai, 2013). FFitts law acts as a extension to Fitt's law in predicting the performance while using touch interfaces. For example, due to phone screen real-estate, the conversations list will have bigger buttons and minimalist design to access the conversations.

- **Ease of remembering:** The system must be easy to remember for the casual user. If a user has spent some time away from the application and then return to it, they should be able to reestablish proficiency. This is again dependent on the learnability aspect, where the learning curve should be less steep to enable the easy understanding. Further certain aspects such as recognition over recall is implemented in the design ("Memory Recognition and Recall in User Interfaces", 2016).

"Recognition is easier than recall because it involves more cues: all those cues spread activation to related information in memory, raise the answer's activation and make the user more likely to pick an appropriate option"

Further enabling good information scents in the application can account for better memorability, since it creates the location awareness for the user within the application and reinforce the sense of destination and consequence of choosing an option ("Deceivingly Strong Information Scent Costs Sales", 2016).

- **Errors:** The user must be able to understand what the system does. Further they should be able to track their errors and correspondingly find a way to resolve their errors. There will be a lookout for slips and mistakes that users make ("Preventing User Errors:

Avoiding Unconscious Slips", 2016). Great care will be taken in the design to provide appropriate instructions to counter the errors with well written error messages. Error will be expressed in plain language (no codes) precisely indicating the problem, and constructively suggesting a solution. Further, "10 Heuristics for User Interface Design: Article by Jakob Nielsen" (2016) endorses the following:

"Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo."

- **Satisfaction:** The user must feel satisfied with their experience with the system. Determining how pleasant the design is more of a subjective aspect. This constitutes the user experience component of the design. There are certain guidelines to help making the application pleasurable to use ("5 Simple UX Principles to Guide your Product Design", 2016). This needs to be tested during the usability testing to ensure that the application is easy and pleasurable to use ("User Satisfaction vs. Performance Metrics", 2016).

## Performance (if applicable)

Currently we did not find any evidence or the need to concentrate on the performance aspect of the application.

## System Requirements

For this project, we are designing an app working on iPhone. After our task is successfully accomplish, we intend to apply to iPad, Andriod, or other platforms. But specifically, for this project alone we are only considering iPhone.

## Glossary

Include a glossary of definitions, acronyms, and abbreviations that might not be familiar to some readers. This could include technical terms that clients/users might not understand, or domain-specific language that would not be familiar for software developers.

## References (If Applicable)

### References

*5 Simple UX Principles to Guide your Product Design.* (2016). *SitePoint*. Retrieved 7 November 2016, from <https://www.sitepoint.com/5-simple-ux-principles-guide-product-design/>



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