

Montclair State University

HCI Project: CLOVE

Zakary Macejka

Intro to Human-Computer-Interaction CSIT335_02FA24

Professor Zhou

12/24/2024

Part One: Project Proposal

Project Title: H.E.D.I.I.

Zakary Macejka

9/29/2024

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The idea of what H.E.D.I.I. stands for is not a generally new one but it does serve to solve a problem that has so far been proven unsolvable. H.E.D.I.I. simply stands for “Health, Educator, (potential)diagnostician and Input, Interface.” The label of being a diagnostician may be potentially misleading but overall this project’s goal is to provide educated and relevant input based on the health needs of it’s users. After browsing the ACM Digital Library I had come across an individual named Amanda Randles who had won the ACM Prize in Computing 2023 for “Ground-breaking contributions to computational health through innovative algorithms, tools, and high performance computing methods for diagnosing and treating a variety of human diseases.” Her most recent work surrounds the idea of using machine learning and real time generated simulations of blood flow to plan for potential heart and artery issues as well as cancer cell transportation. These papers published by her go into depth about her research however I only took her ideas as inspiration along with what Baymax’s goal was in the movie “Big Hero 6.”

Provided that, H.E.D.I.I. is an extremely ambitious idea that will strongly rely on machine learning and AI. Taking the input from a user, H.E.D.I.I. will be able to either provide a sufficient amount of data, research and examples based on very similar cases or the user will be asked to provide a more in depth description of their symptoms to narrow down the potential

causes. Furthermore, my hope would be to have most healthcare providers use H.E.D.I.I. and its abilities to assist with generating simulations, providing input and being able to monitor the patients' status for as long as needed. This is for the more serious health complications, in the cases that may not be as important H.E.D.I.I will be able to support with giving at home solutions but will always encourage for an in person medical diagnosis.

As a result, if H.E.D.I.I. is properly integrated with a hospitals' systems and care provider information, the user will be able to seamlessly be able to contact their doctor to either schedule a virtual or in person appointment. Moreover this project is meant to solve the devastating issue of so many people not having access to any significant form of medical attention all the while limiting paranoia and false diagnosis that services like Web md typically provide. There is no real reason why as a society we can not reach a point where each individual is properly taken care of and treated but I do believe this will only be possible with a copious amount of machine and AI help.

Part two: Project Requirements Analysis

Project Part II

Zakary Macejka

10/13/2024

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A1:

Interview 1:

Description: Woman, 50s, IT occupation, 20+ years of experience.

Statement (ME): Do you struggle with organizing any of your files on your desktop/laptop?

Statement (USER): Yes, throughout my experience in school and work struggling with locating older files or new files I just downloaded can become difficult or overwhelming at times.

Statement (ME): Do you think you'd be interested in an application that can be downloaded and integrated with your browser and other programs that would track and scan your downloads to accurately names them and add to a desired folder?

Statement (USER): Yes I do think that would make things more simplistic and efficient at times.

Statement (ME): If this application could be used to very easily transfer data and files from your mobile device to your computer and vice versa would that makes things more simplistic. Ex: Take wanting to quickly send a JPEG file or PDF from your phone to your computer which for many is not the most efficient task. Would an app that would make it simple to not only organize and store data but also transfer files computer→computer, phone→computer, phone→phone, computer→phone make everyday tasks more simple at work and in your personal life.

Statement (USER): I believe that's something that I would be interested in as long as it is functional and very secure. Also what kind of features would engage the user and make them more inclined to remember the product?

Interview 2

Description: Woman, early 40s, IT and management occupation, 20+ years of experience

Statement (ME): Do you struggle with organizing any of your files on your desktop/laptop?

Statement (USER): Yes, it is like one of those things that seems like it should be more simple but unfortunately isn't.

Statement (ME): Do you think you'd be interested in an application that can be downloaded and integrated with your browser and other programs that would track and scan your downloads to accurately name them and add to a desired folder?

Statement (USER): It's not something that is detrimental to my work or personal life but I do feel something like this could make things more efficient in both aspects.

Statement (ME): If this application could be used to very easily transfer data and files from your mobile device to your computer and vice versa that makes things more simplistic. Ex: Take wanting to quickly send a JPEG file or PDF from your phone to your computer which for many is not the most efficient task. Would an app that would make it simple to not only organize and store data but also transfer files computer→computer, phone→computer, phone→phone, computer→phone make everyday tasks more simple at work and in your personal life.

Statement (USER): Yes that would be really helpful especially with sharing photos from my phone. However this app would need to be very secure in order for me to be interested but also I have the question of if it would be free or something like a subscription based business?

Statement (ME): I am unsure that is something that I haven't thought about yet, thank you.

A2:

Tasks:

Automatically organize into desired files

Automatically rename files

Seamless transfer across devices

Able to easily share files and attach comments

Have built in Direct Message and group chat function

Suggest relevant files

Locate files based on description

Allow user customization

Ability to send files at specific times and dates

Accept all types of files zip, jpeg, gif, pdf, mp4, mp3, etc.

Secure accounts

Offer for free(potential price for some features)

Project Title: FLUX

Zakary Macejka

Interview 1 & 2

Literature synopsis not complete

Part Three: Low-Fidelity Prototype

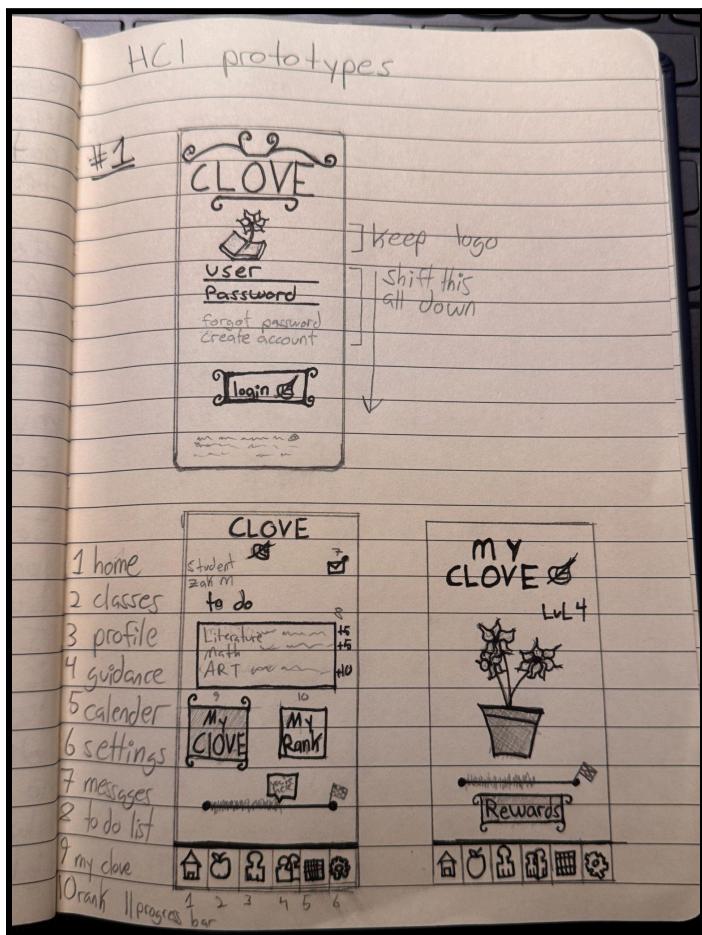
Project Part III

Zakary Macejka

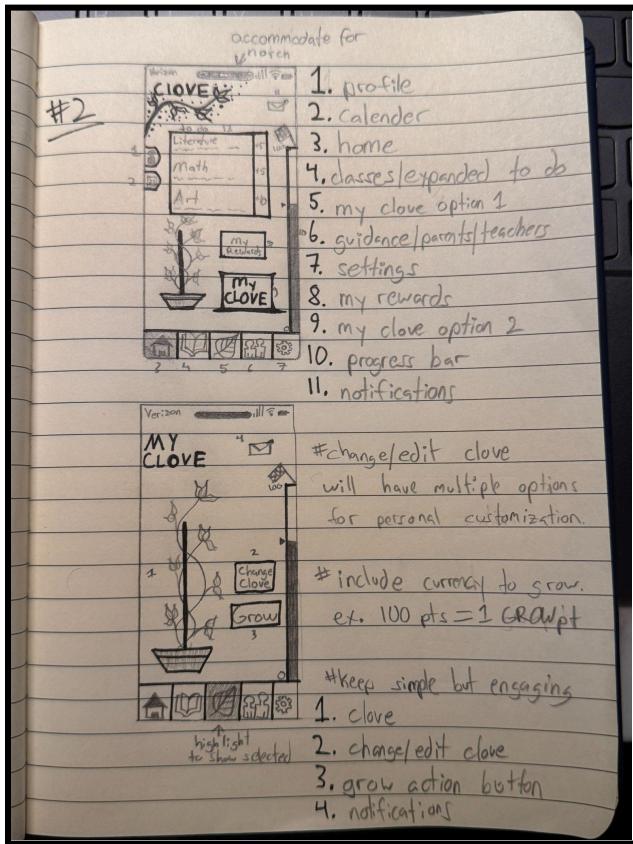
11/3/2024

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1. DESIGN: PROTOTYPE 1



PROTOTYPE 2



2. EVALUATION

After creating the first prototype I decided that there were some features that worked and made sense, however, I disliked the general design of the “Home” page and the “My Clove” page. In the second prototype, I made changes that made sense, reduced clutter, and appeared engaging to the target audience. I decided that the original login/create account screen was good and only required slight changes that will be done later for the final product.

In these prototypes, I did not include all of the pages that will be accessible in the final product but I created the two that I believe are most important. Besides that, I numbered the majority of the objects and wrote what they represented. All of these other pages will be very simple and direct, for example:

Clicking the...

1. **The profile button** will bring you to a page where the user can see all of the personal information that was imputed: name, age, grade level, and institution.
2. **Calendar**: a simple current calendar labeled with all complete and upcoming assignments.
3. **Home**: home page with paths to other pages as well as quick access to important info.

4. **Classes/expanded to do:** a list of all classes enrolled in and ALL assignments that have been uploaded by the instructor.
5. **My Clove option 1:** first option to access my clove from the home page.
6. **Guidance:** simple information of name and contact information for optional guidance counselors, teachers, and parents.
7. **Settings:** used to access basic account information such as privacy, settings, app preferences, dark mode, logout, delete account.
8. **My Rewards:** page of the user's acquired rewards and future reward points supplied by CLOVE or third-party rewards implemented by the user's guidance team.
9. **My Clove option 2:** second option to access my clove while on any page in the app.
10. **Progress bar:** representation of the users' progress towards their next reward which is based off of 0-100 points. Rewards are given once 100 points have been reached.
11. **Notifications:** upcoming due dates, app news, and class announcements.
 1. **Clove:** physical representation of the users' progress with their work and what they've achieved. Can be customized!
 2. **Change/edit clove:** panel of optional clove customization, similar to a character design interface in a video game.
 3. **Grow:** button used to confirm that the user intends to spend a token to grow or evolve their clove.
 4. **Notifications:**
 5. **LVL:** representing the cloves level or how many times it has been evolved 1-5 levels

3. CHOICE AND REFINEMENT

Overall both designs are not too different from each other, yet the second one prioritizes simplicity as well as accessibility to functions that I suspect will be used more/less often.

Userbase changed from Part I & II of the project but had not changed throughout Part III. Previously the target audience had been older individuals heavily working with files but this approach became too ambitious and uninteresting. This approach of the project targets younger individuals most likely in elementary, middle or high school, in addition to that this version seems achievable and interesting to pursue.

Furthermore the interface has not changed but I believe it may slightly change in the future to make it even more simple and easy to use.

4. FINALIZED DESIGN

Inspiration: Coming from my own personal experience as well as others in the public education system I became very aware of the problems many students face with staying motivated and on top of their tasks.

Goal: Reduce stress, increase productivity, increase class/education engagement.

Service: to provide an application that can be paired with other applications such as google classroom or canvas. This app is intended to make completing class work easier, more engaging and rewarding. Students will have all important information about the assignments they are given in a simple manner all in one place.

Rewards: the reward system is based off of a 0-100 point scale, the app comes with many “Clove” options which is an assortment of different plants or animals. After reaching a milestone every 50 points the user will be rewarded with a “GROW token” which can then be spent on any clove, causing it to grow or evolve.

Flow: (→)=user clicking button to transition to different page or result

Home → access class list → access individual classes

Home → access my clove → access rewards

Home → access my clove → Grow → clove reacts

Home → access my clove → Edit/change clove → assortment of customization → save

Home → access guidance team → access contact information

Home → access settings → basic privacy and app account info

Home → access settings → log out

Home → access settings → delete account

Home → access settings → darkmode

Home → access calendar → expand assignments for more info

Home → access profile → view and edit personal info → save

Home → access notification → view notifications with time stamp

These routes should be interchangeable such that instead of starting from home a user is on the settings page but wants to grow their clove. The flow will be settings → access my clove → grow → clove reacts.

5. LESSON LEARNED

I feel that the most valuable lessons that I've learned from this project so far is how complex and thorough even simple apps or actions can become, requiring a significant amount of thought and time to complete. I've also learned that I should set much lower expectations for myself in regard to what I can realistically achieve in a generally short amount of time. I now know that my original ideas for the project were too ambitious, overly complex and uninteresting.

Part Four: Project Implementation

Zakary Macejka

M5: Project Implementation (Project Part IV)

Professor Zhou

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CLOVE

Target Audience~~

Students ranging from elementary to high school.

The Purpose~~

To help students limit procrastination and increase productivity while positively reinforcing success.

How~~

The app is intended to simultaneously be used by parents, students, teachers and faculty such as guidance counselors. The app provides a point based system that can be spent to grow and/or customize the in app virtual plant. Teachers decide how many points are rewarded for each complete assignment while students decide on how and when to spend those points. However these points can not be spent until they turn into "Grow Points."

The user is given a single Grow Point each time the blue progress bar is filled reaching fifty points and is then reset.

Page 1~~Home

This page provides a simple overview of assignments that have the closest due dates, progress bar, access to the shop, My Clove, profile and notifications. This page is simply meant to be glanced at for quick information and quick access to other important pages. Currently this page can be interacted with by clicking on the Shop button, My Clove button, or any of the buttons on the bottom toolbar.

Page 2~~My Work

This page includes all assigned work alongside with assignment point value, due date and assignment details. This page is also where users can track completed work by clicking the purple check box and then the “COMPLETE” button. Currently this page can be interacted with by scrolling through the assignments or clicking My Clove and the toolbar.

Page 3~~ My Grades

This page includes a scrollable view of all current grades, the final product would include an option to go into each class and individually view submitted and assigned grades. Once again the toolbar and My Clove button are always accessible on almost every page of the app except on the customization page.

Page 4~~My Guidance

This page provides a scrollable view to the user where they can see everyone who has some access to basic things such as their grades, upcoming work, and submitted work. Furthermore this page provides a small box on the bottom of the screen where anyone on

their guidance team can leave advice or motivational comments. The final version of the app may include a direct messaging feature.

Page 5~~My Settings

This is a very simple page which is just meant to show some basic features that would be included in the final version. Currently the “Log Out” button can be used to go back to the login screen while saving the users data and how many points were spent. The “Delete Account” button is used to restart the demo returning to the very first login screen before any points had been spent.

Page 6~~The Shop

This page provides a scrollable view of different pots and facial expressions that the user can spend Grow Points on to customize their own plant. Currently, in this demo the customizable options can not be purchased but the final version would include this feature as well as other options like hats, ornaments, and backgrounds.

Page 7~~My Clove

This page brings a complete view of the user’s current clove/plant. The user can interact with the customization (green pencil) button, grow(purple energy) button, shop button, and info button.

Page 8~~Customization

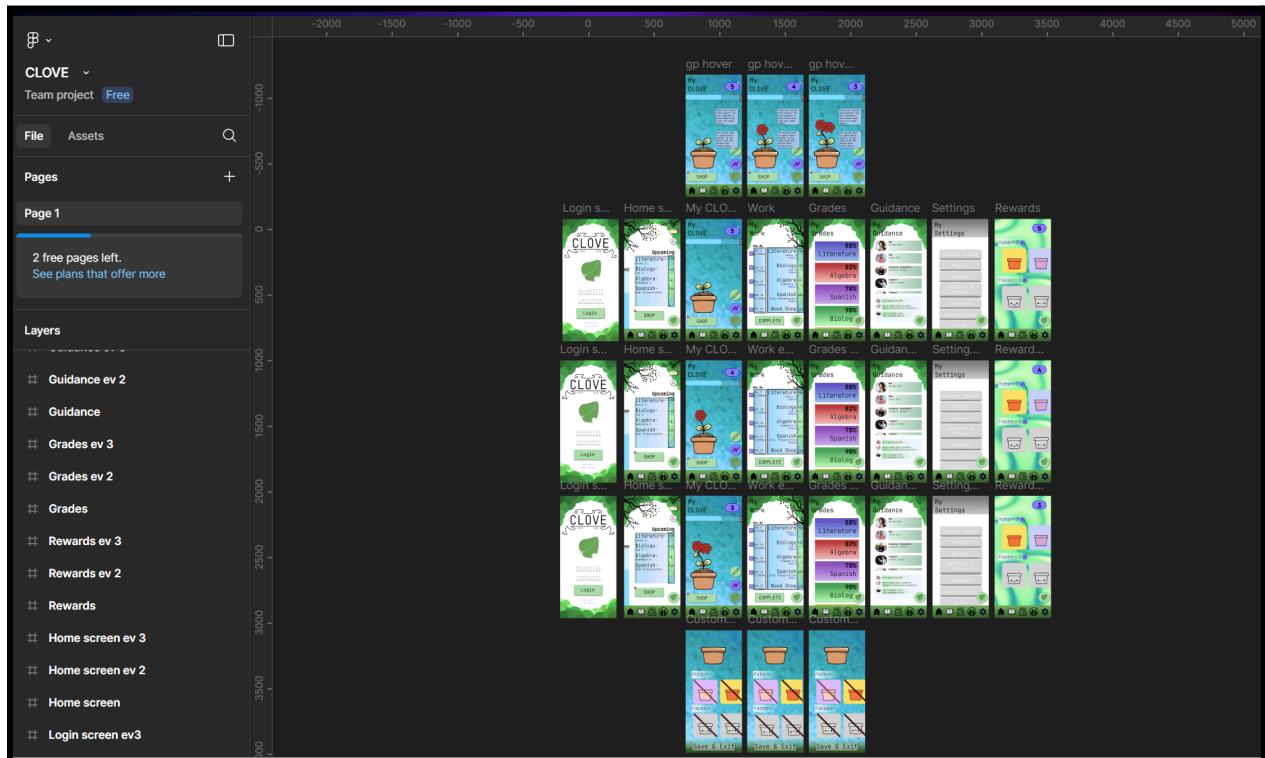
The user is brought to a page where they would be able to scroll through all locked and unlocked options and then click the “Save & Exit” button to return. This page is currently viewable only but a later version would support savable customization.

Page 9 & 10~~My Clove Ev2 & Ev3

By clicking the grow button the user can watch their plant grow and the purple grow point counter in the top right decreases by one per evolution/growth. Currently the clove can be upgraded to Ev3 but a later version would include more. Each time a user grows their plant, that transitions to a new base page which branches off to the others which is how data is temporarily stored.

Page 11~Information

On each evolution version of the My Clove page the user can hover over the “i” above the grow point counter. This temporarily transitions to an identical page where some simple information about what Grow Points are and how they can be spent.



Part Five: Project Report

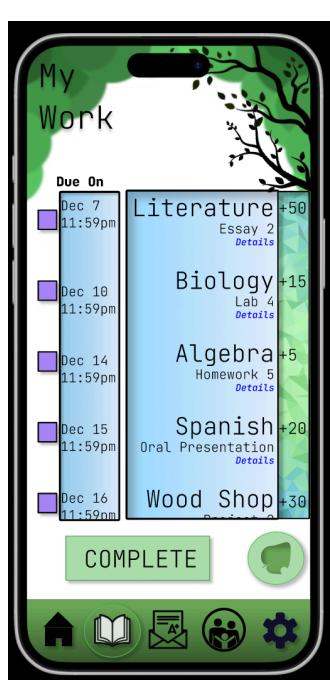
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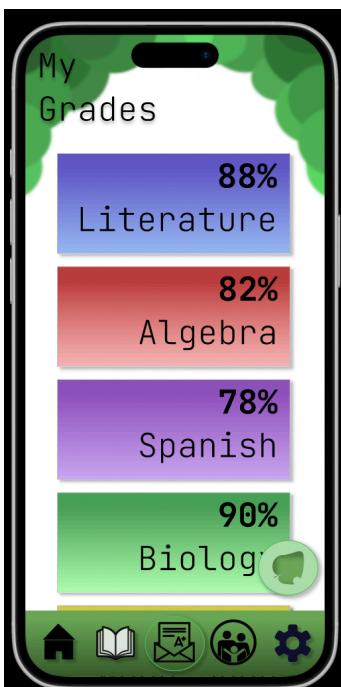
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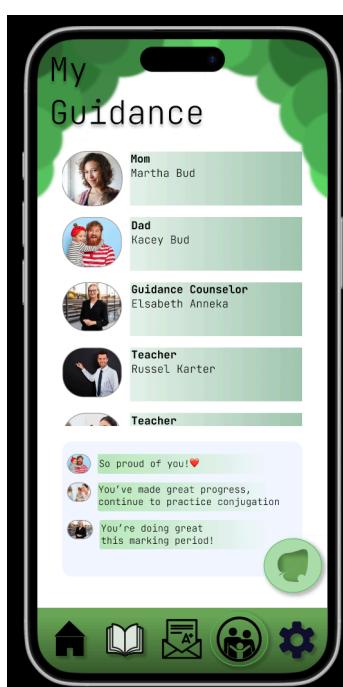
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D.



E.



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H.



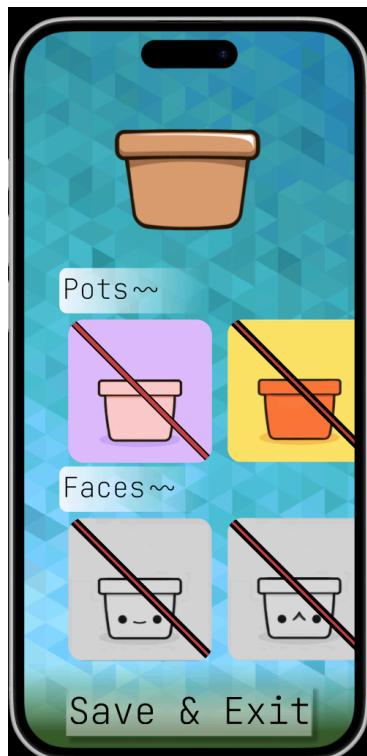
I.



J.



K.



L.



Product Name:

CLOVE

Introduce the problem–

Overall this product is meant to build off of ideas and programs that are currently available. By including the My Clove and the My Guidance function, the intention is to merge an online environment to the real world environment created in classrooms. Furthermore, the product is meant to help motivate students to complete and submit assignments while also positively reinforcing their success by receiving comments and constructive feedback all in one place. I believe this has the capability to help the youth with certain aspects of their mental health and self worth.

Describe who your audience is–

The app is created to have a friendly design targeted towards younger students ranging from elementary school to high school but is not limited to that.

Describe user interview and user requirements analysis–

The most impactful interview I conducted was the one with my younger cousin that is currently a freshman in high school. In this interview, it was brought to my attention what type of function may be very valuable to include. We talked about mental health and specifically how disconnected many teachers are from their students. This is what inspired the My Guidance function which aims to help students feel more comfortable with their role models and motivated to reach out if necessary. In total this has the potential to help children academically, mentally and socially.

Conclusion-

To sum up this project and my experience with making it, I am very pleased with the concepts as well as the visuals I made. The only aspect that I feel I was let down by was that the final prototype was not 100% interactable. Buttons such as the profile, mail, complete, settings buttons are non functional as well as being unable to purchase customizations and apply them. This is not an issue though because I believe I could achieve a final product if more time and effort is put in. In total I am very confident in this product and pleased with how much it taught me in regard to what types of products I'm interested in as well as how high of expectations I should set for myself.