Thrive:
Building a Solution for Stress Caused by Life

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ABSTRACT

In today's society, there are a lot of causes of stress in people's lives. Through the heavy workload of a fulltime job to the busy college student trying to meet deadlines. Stress is a part of each of our lives and everyone finds different ways to deal with such stresses. Our overall motivation is to provide an accessible way to alleviate unnecessary stress, help users to maintain a more organized lifestyle, and most importantly enable the user to become the best version of themselves. Through our knowledge in Computer Science and Human Computer Interaction, we were able to create an application that will help users in their everyday lives. Our goal is to help those organize their life, be productive, and reduce stress.

CCS CONCEPTS

• Human Computer Interaction

• XCode (Swift Language)

KEYWORDS

Human Computer Interaction, Self-Esteem, Stress, Self-Efficacy, Optimism, Physiological, Depression, Somatic Symptoms, Anxiety, Functionality, Design, Low-Fidelity Prototype, Horizontal Prototype, Wireframe, Marvel, Vertical Prototype, User Testing, Qualitative, Quantitative, XCode, Swift Language

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1.1 Introduction

We began our research by finding out a common health problem that was found in everyone's daily lives. From our research, we found issues with the average person having weight management issues, sleep issues, lack of financial knowledge, and time management issues. We found that we would be able to focus on stress as it is an underlining factor among people's lives that affect every aspect within their lives, like the ones stated above.

When researching stress and the affects it has on our lives, we discovered that the people who deal with the most amount of stress are college students and young adults. College students are at the point of their lives where they are figuring out who they want to be while still trying to make money to do what they love. Young adults are considered to be newly graduates who are looking for their first job and trying to find stability in their lives living on their own and being responsible. Both types of people are figuring out how to juggle their responsibilities and manage their time efficiently to get the most out of their limited time.

2.1 Research

A research article we found had conducted research on college students ranging from the ages of 18-24 years old to determine factors that can cause stress. The study showed that young people from 18 to 24 years old suffer from an insufficient level of physiological health. Students who experience negative emotions or low self-esteem were found to be the strongest predictors of stress.

The research was done in questionnaires that were divided into two sections. The first questionnaire asked for demographic data from gender, age, field of study, to current year in college. The second questionnaire was used to

determine the levels of self-esteem, perceived self-efficacy, optimism, student well-being/satisfaction with life, perceived stress, and physiological distress. The Physiological distress section was divided into two sub-parts that questioned for stress, social dysfunction, somatic symptoms, and depression.

2.2 Research Results

The majority of students included in this study had high levels of perceived stress, physiological distress, and low levels of self-esteem, optimism, and self-efficacy.

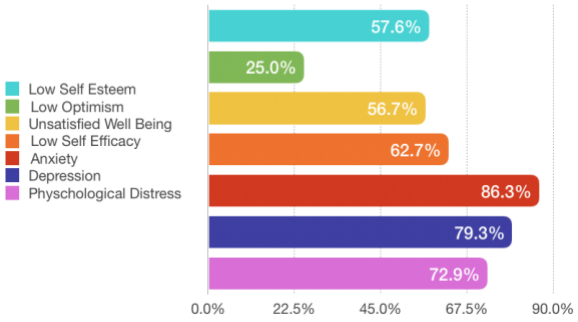

Figure 1: Research results which show the percentage of what the participants have and suffer. Through the research conducted, the above can all be attributed to causing stress in College Students.

3.1 Application

For our application, we wanted to create a self well being application that would have four main themes:

1. Nutrition: A section within the application that allowed the user to insert their eating habits and the meals they eat on a daily basis. This would in turn help the user choose better, healthier alternatives.
2. Exercise: A section to help users keep track of their distance and be able to add exercises that they have done. Keeping track of their workouts and showing the number of calories they have burned.
3. Finance: A section allowing users to keep track of their financial standings. While also providing the tools to teach people such as young adults and college students how to save and how to manage their money in a responsible way.
4. Calendar: A section that allows users to manage their time and add important dates and events within their daily lives.

3.1.1 Motivation

Our motivation behind our application was to allow users to maintain a more organized lifestyle, reduce unnecessary

Figure 2: Logo of phone application. "Become the Best Version of Yourself."

stress, allow users to better their overall mental and emotional health, and enable the user to become the best version of themselves. Our target audience were college students, young adults, and people seeking organization in their lives. Young adults and college students who have unorganized lives typically results in higher stress levels.

3.1.2 Functionality and Design

Four main core functions:

- Record daily food intake
- Follow exercise habits
- Monitor finances
- A complete calendar with daily notes

Interactive Design:

- Application relies on touch interaction
- Minimize swiping between screens and user input
- Alternative interaction: voice input
- Push notifications

4.1 Thrive

Our application and the process that was taken to come to our final product. Through user testing and questioning we were able to create and provide an application that was fast, effective and accessible for our users.

5.1 Low-Fidelity Prototyping

The low-fidelity prototype was our first leap into our project and understanding the way college students think about our application. The below user testing was done with college students and their feedback allowed us to alter our design for future versions and use. We had 10 college students participating in this round of user testing.

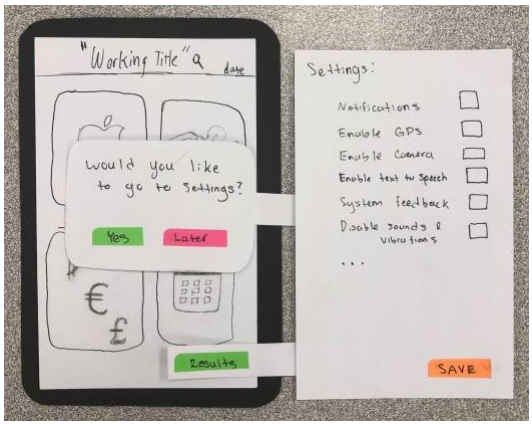

Figure 3: **Question Tested: Should we force mandatory preference setup on startup or allow them to choose a later time?**

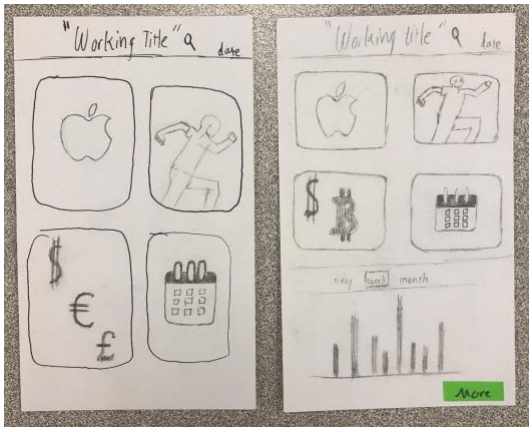

Figure 4: Question Tested: Should results be displayed on home screen or a button that directs you to you results?

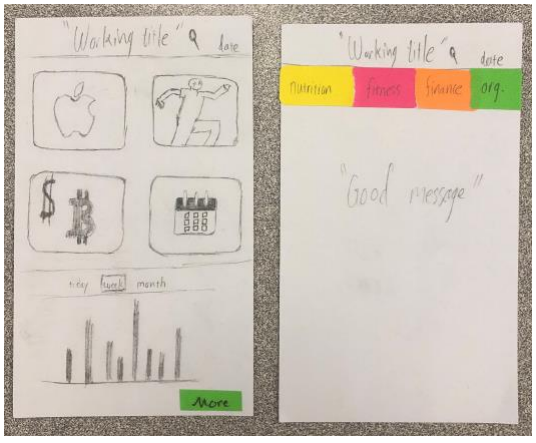

Figure 5: Question Tested: Should navigating through the application be done through tabs or icons?

5.2 Low-Fidelity Prototyping Results

In figure 3, the results came to asking the user to set up preferences in a pop up on startup and providing a default settings option.

In figure 4, the results from users asked for the home screen should show some results. However, with that, users asked to include a button that would direct you to a page where in contains more in-depth results. Allowing one to see the recorded results and information that had been provided to the application.

In figure 5, the results came to the conclusion that icons were the best to use to navigate through the application.

6.1 Horizontal Wireframe: Marvel

Marvel is an online website that allows its users to wireframe, design, and prototype with their tools. Being able to generate a working wireframe of our application to start creating and visualizing it. This allowed us to improve on our low-fidelity prototype and further test a more fleshed out working application.

6.2 Wireframe Prototype

Figure 6: First four screens of our wireframe showing the introduction screen, sign in screen, home screen, and the setting pop up allowing user to set their settings or use default.

Figure 7: Next three screens showing the in-depth settings preferences, home screen after setting up your settings, and button click onto the finance section. (For this prototype version we built out the finance section.)

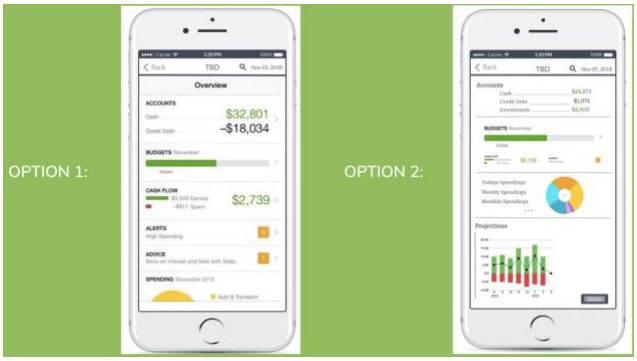

Figure 8: The final two screens are showing two different options within the finance section. Option 1 being a more user-friendly version where important information is stated and has as little as possible. Option 2 is more information orientated and shows more to the user to see and look into. More in-depth and more numbers and stats based.

6.3 Questions Asked After User Testing

In our wireframe prototype testing, we allowed the users to use our application opening login screen, setting up the user settings, the home page, and gave two versions the user would see when they are opening the finance section within our application. These were the questions asked after they went through the application:

1. How did it make you feel going through this iteration of the application in terms or usability? Scale 1-5, 1 being unsatisfied and 5 being satisfied.
2. Was the information presented in a concise, understandable way? Easy to follow and use the application? Scale 1-5, 1 being not understandable and 5 being understandable.
3. Explain how the information being presented from the first version is compared to the second version and which would you prefer?
4. How does the overall flow and progression through the demo feel?

6.4 Horizontal Prototype Results

In our wireframe prototype testing, we allowed the users to use our application opening login screen, setting up the user settings, the home page, and gave two versions the user would see when they are opening the finance section within our application. These were the quantitative and qualitative questions asked after they went through the application:

Table 1. User Testing Results – Quantitative Questions

User	Question 1	Question 2
20-Female	5	5
20-Female	5	4
21-Male	5	4
20-Female	4	5
20-Male	4.5	4
20-Male	5	4
21-Male	5	4
22-Male	5	4

Table 2. User Testing Results – Qualitative Questions

User	Question 3	Question 4
20-Female	First screen was easier to digest and see visually.	It runs smoothly, but would like to see switch of nutrition and exercise icons because they look similar.
20-Female	First screen for its simplicity.	Application runs smoothly and easy on the eyes with its design.
21-Male	First screen is simple and easy to read.	Has good flow.
20-Female	Second screen is preferred because the first screen makes her feel bad about herself with the debt owed being showed.	Has good flow but strongly dislikes the dialog setting box that pops out at the beginning. Would rather be notified through the android notifications to allow each preference setting to come up as needed.
20-Male	Prefers second screen because he likes to see more data.	Calendar icon makes sense but needs more distinction along with the other three sections.
20-Male	Prefers second screen with more data available.	Label the home buttons, but overall flow feels great. It is easy to navigate.
21-Male	Prefers the second screen.	The overall flow is fine and likes the application.
22-Male	Prefers either screen, however, is better off with scrolling to see more data. Does not have a preference.	The overall application has a good flow, but wants us to change the GO on the settings dialog box to say CHANGE. Also change the icons that can bring confusion.

6.5 User Testing Conclusion

User testing shows that our application is user friendly and easy to pick up and user without too much guiding help our tutorial. The information provided, particularly in the finance section can be overwhelming. For those sections, it is advised we have hints or a tutorial to help users better understand and be able to read the information that can be a lot at times. The finance section shows we can find a common ground between the two options that were provided. To help reduce the information being presented, having buttons that can show more or less is a viable option. Overall consensus from our user testers is that our application runs smoothly and the design is enjoyable and easy on the eyes. Issues that were noted were the need to help reduce the confusion on the home screen icons and make them clearer and have them named in order to help further.

7.1 Vertical Prototype: XCode (Swift Language)

Virtual prototype is a method in the process of product development that involves using computer programs to design a virtual simulation of a product, in our case, our application. We decided to use XCode, which is a software for developing IOS applications. XCode uses swift as its main language as it was created by Apple to help them develop applications that can only run on IOS and therefore allow applications to only be able to run on Apple products.

Swift is a modern programming language that is used from systems programming, to mobile and desktop applications. However, with this language, we both had no prior knowledge to how to use this language to code an application. Learning and programming this application was the biggest hurdle we gave ourselves because we had to learn a new language and a new developing tool. We had prior knowledge in writing in java and using androids developing tool, Android Studio, which helped with basic development tool concepts. However, the coding was the most challenging with the little time we had to make this application.

In the end, we were able to figure the language out and create the vertical prototype of our application. We coded a working application that was able to be tested. For our virtual prototype, we build out the calendar which allowed the users to have a fully functional and working calendar.

7.2 Vertical Prototype: User Testing

Throughout the semester, we learned about users and how valuable their feedback is and as we developed this application, we made it priority to use user feedback. We molded our project around user feedback and user testing. Giving options and seeking users to try out both options to see which was the better option really helped us narrow our designs and helped influence ideas and actions we took. Being able to see their responses to the changes and additions were extremely valuable.

At the beginning of our project, we were undecided which section to build out for the final version, but due to time constraints and having to learn a new language and development tool we were able to choose a manageable section and put a lot of time and effort into perfecting that section.

7.1.1 Questions Asked for Final User Testing

1. How is the general feel of the application from startup to the calendar?
2. Is there any feedback you would like to give?

7.1.2 Results

- Change icon text to white color to help bring it out for user to read easier.
- Char is confusing to understand what it is or what it is showing.
- Calendar looks good and runs smoothly. Does what it needs to do.
- Enjoy the overall theme and look of the application.

8.1 Conclusion

Our goal is to provide an application that helps improve people's daily lives. Stresses come from all aspects of one's life, but our goal is to deal with a few to allow users to reduce stress, organize their lives, be responsible, and overall help improve the users mental and emotional health. These were only the first steps in tackling an issue that affects everyone, but with continued revisions and user testing, our application can become something that is used by more than just our target audience.

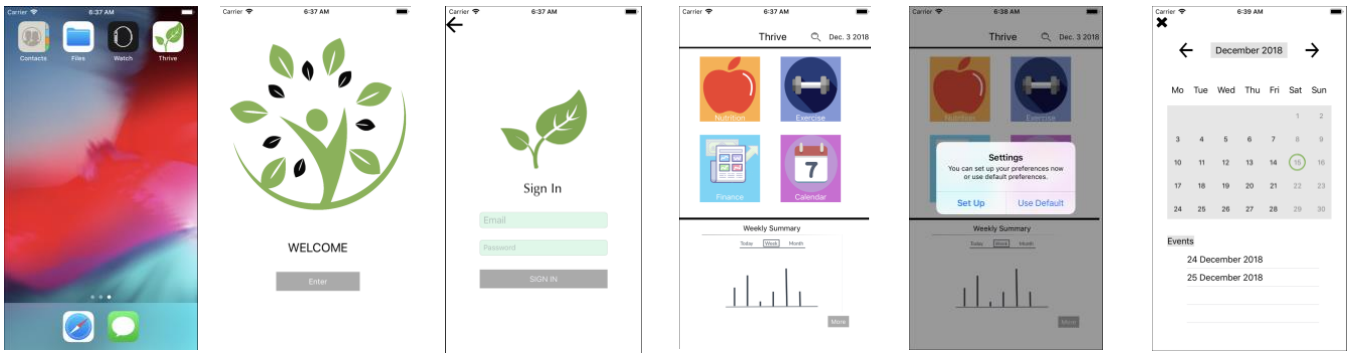

Figure 9: Thrive Application

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