CASE STUDY:

Capstone/Thesis Project at Jefferson University (2017)

Mobile Mental Health App for Coping with Anxiety

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Overview
Anxiety
The first known traces of anxiety goes back to our human origination. The universality of anxiety as part of the human condition, is quite possibly the reason physicians in primeval times omitted it from their list of mental illnesses (Stein, M.D., Ph.D et al). "Research into mental disorders has shown that up to 1 in 4 adults will have an anxiety disorder in their lifetime, and that up to 1 in 10 people will have an anxiety disorder each year" (Pfizer). This data describes anxiety disorders as not only among the most common psychiatric disorders, but also among the most disabling (Stein, M.D., Ph.D et al). The total individuality of anxiety disorders makes them very hard to treat to begin with in addition to the stigma attached to this disorder, which decreases the urge to seek help (Stein, M.D., Ph.D et al).

Mental Disorder Stigma
Throughout global history people who have mental health problems have been treated differently, excluded and even brutalized. Misguided views by "normal people" about people with mental health problems have classified them as "more violent or unpredictable or somehow just different" none of which beliefs have any basis in factual information (e.g. Swanson, Holzer, Ganju & Jono, 1990). Seeking treatment then becomes a task–admitting that one has a problem induces the fear of what other peers will think and those afflicted believe it will adversely impact their job or personal relationships (AICBT, Ltd.).

Millennial Generation
In 2017, Americans, who are a part of the global workforce, are among the most overworked and overstressed humans. The core issues of stress and anxiety directly relates to the way our American culture operates from the education level to the workforce (Cummins). A study conducted in 2013 by the National College Health Assessment found about one-third of U.S. college students had difficulty functioning due to depression and almost half said they felt overwhelming anxiety (Novtney). This study does not stand alone, it falls among many other anxiety studies conducted about the Millennial generation (Novtney).

The U.S. is ranked among the nations that have the highest levels of depression and anxiety. Anxiety affects people at all levels of business, professionals, politicians, college students, people with mental disorders, and low income communities. Most recently an online survey conducted by Harris Interactive for the American Psychological Association, found that between ages "18-33–the Millennial generation–are stressed out more than other generations and it's not letting up: 39% say that their stress level has increased within the past year; 52% say that stress has kept them awake at night in the past month" (Jayson). Women within the Millennial generation are also more likely to purchase or download an app to manage their stress, or anxiety than utilizing any other method (Elias).

Psychiatric Physicians
The number of psychiatric physicians has dwindled over the past 19 years (Sederer). While the total number of physicians increased by 45%, the total number of practicing psychiatrists has only increased by 12% (Sederer). Furthermore, during these year the nation's population has increased by 37% (Sederer). These numbers point towards a decrease in the amount of capable physicians who can correctly administer and care for the increasing population of people with mental disorders.

Opioid Crisis
The increase in the number of Millennials with anxiety or depression, more often treated through

medication, has led to the opioid epidemic in America (Brauer, M. Scott et al). "Opioid painkillers and benzodiazepines are two of the most frequently abused prescription drugs in the world, although they are frequently prescribed together" (*American Addiction Centers*). Many people who suffer from anxiety take these highly addictive benzodiazepines to calm their anxiety and allow them to function (2016: Looking for a Natural Anxiety Remedy that works?). The problem with treating anxiety sufferers with these drugs is that they build up a tolerance for the drug over a six month period–thus over time can be habit-forming, forcing users to continue to take them to keep their anxious terrors at bay.

Problem
Seven out of ten adults in the United States say that they have experiences with stress or anxiety daily which has interfered with their lives ("Stress and Anxiety Interfere With Sleep"). Although there are many health applications that focus on coping with anxiety none offer an immediate grounding device when a person suffers from an anxiety attack.

Target Audience & Stakeholders
The target audience is American women, young adults ages 18 to 25 that are classified as middle class citizens. They enjoy engaging in healthy, active lifestyles outside of the office and have an interest in buying the newest technologies that come to market. The wearable is for these young middle class students and professionals who utilize visual and tactile therapeutic measures to ground themselves.

Objective
To give people an immediate relief from an anxiety attack.

Strategy
Establish a grounding moment when the user is experiencing an anxiety attack. Identify the cause of one's anxiety attack. Indicate when the user should seek professional treatment. Promote health and well-being. The application and wearable are not to get confused as a substitute for professional treatment, but an indicator system that gauges when one should seek help or treatment.

Elevator Pitch/Key Message
I am designing a mobile app and wearable device for those affected by anxiety. The app plus wearable system aims to ground the user during their anxiety attack, track their daily mental health and notify them if they need to seek treatment from a physician nearby.

Project Detail
I will walk you through the steps a user will need to take to effectively achieve the objectives. Assuming the user believes they have anxiety or has been diagnosed–upon downloading the app the user will be taken through a course of customization prompts that will set up the way the application will function. For example, the application will ask the user to have access to their schedule on Google Calendar, then it will ask the user to make sure that they have either a Fitbit or an Apple watch to accurately collect data about the user's heart rate throughout the day, additionally the application will ask the user what their immediate and convenient coping mechanism is and will provide options on their cell phone in a discreet manner, when they're having an attack. The application will blink with a notification as the user's heart rate increases due to an anxiety attack and will offer custom responses to relax the user–be that breathing exercises, a phrase or word to repeat, or quick advice as the anxiety attack is occurring. At the end of the users day they are encouraged to review the data before going to sleep and write a few phrases to describe what occurred. Using some sort of algorithm the application will compile data based on the user's geo-location, schedule, and heart-rate to determine the root cause of their anxiety

attacks and depending on the frequency and longevity of the anxiety attacks the application will suggest nearby psychiatric physicians for the user to get help or treatment. This application differentiates itself because it does not aim to change the American cultural habits at large. At much smaller level, it aims to inform the user about their anxiety and give them a nudge to look for help when needed–thus diminishing the stigma attached with seeking professional help for a mental disorder. Even if the user's anxiety does not qualify them for the "seek professional help" prompt it will inform them, the young professionals, that there are other ways to achieve functional lives before taking medications. This application is not to get confused as a substitute for professional treatment, but an indicator system that gauges when one should seek help or treatment.

Obstacles
When moving forward with this capstone project, some obstacles I might face include: the inability for people to change their habits within the American culture; the amount of similar competition; the user not having their phone on them at the time of the attack; proving the application's effectiveness.

Competition
- there are over 165,000 health applications on the market (Gregoire)
- more than 80 percent of the applications have never been proven effective (Gregoire)
- they're currently completely unregulated and some may make false claims or have hidden inflated benefits (Gregoire)
- "The Food and Drug Administration has decided that they're not going to regulate these kind of mental health apps,' Dr. Michael Van Amerigen, a psychiatrist who heads the apps committee for the Anxiety and Depression Association of America (Gregoire)."
- SAM, the Self-help for Anxiety Management application, developed by the University of the West of England only allows the user to do the following: review their anxiety profile, list what makes them anxious, try out self-help options, share self-help tips in the social cloud, and build their personal anxiety management toolkit and practice.
- MoodKit application developed by ThrivePort, LLC. give the user the skills of self-monitoring, identifying and changing unhealthy thought patterns and engage in mood-enhancing activities.
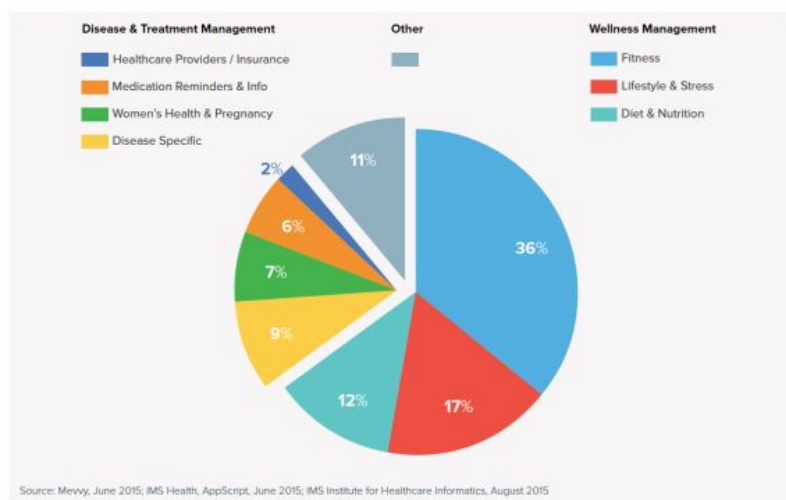
More than 165,000 Mobile Health Apps Now Available. Digital image. *IMedicalApps*. N.p., 18 Sept. 2015. Web. 17 Jan. 2017.

Tone & Style
calming, relaxing, immediately accessible, discreet, inexpensive, personalized, powerful, activating, mindful, minimalist

Deliverables + Schedule

1) Develop a content with a practicing psychologist advisor

2) Design the logo and brand

3) Design application (code, initial customization prompts, logo, brand, layout, push notifications,

    chat-room etc.)

4) Design wearable device to work in conjunction with the application

5) Design packaging for wearable device

Schedule
(List goals, plans for the week in detail)

Week 1: Jan. 11 + Jan. 13
Syllabus week
Gather research for proposal
Perform exercises with the Innovating for People book

DUE

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Week 2: Jan. 18 + Jan. 20
Gather content for application
Perform exercises with the Innovating for People boo

DUE
Wed. Jan. 18th Present proposal, proposal paper

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Week 3: Jan. 23 + Jan. 25 + Jan. 27
Gather research for proposal
Perform exercises with the Innovating for People boo
P Clean-up Wahoo's branding fonts & re-comp project

DUE
P Portfolio Review Wed. Jan. 25

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Week 4: Jan. 30 + Feb. 1 + Feb. 3
Gather content for application
Develop brand names

Choose colors for applications
P Package design for Tastebuds + Personal brand (business card, cover letter, resumé, pocket folder + website)

DUE
Concept of brand logo, slogan + colors Wed. Feb. 1
Critique day Wed. Feb. 1
Meet with Psychologist advisor Feb. 1

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Week 5: Feb. 6 + Feb. 8 + Feb. 10
Develop the content that will be used in the application
Develop wireframe sketches of the pages/pop-ups in the app
P Package design for Tastebuds + Personal brand (business card, cover letter, resumé, pocket folder + website)

DUE
50 sketches of logos for app Feb. 1
Concept of brand logo Wed. Feb. 1
P Wahoo's re-comped/re-designed Feb. 6
All class critique Mon. Feb. 6

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Week 6: Feb. 13 + Feb. 15 + Feb. 17
Develop the content that will be used in the application
Develop wireframe sketches of the pages/pop-ups in the app

DUE
P Package design for Tastebuds completed + Personal brand (business card, cover letter, resumé, pocket folder + website) Feb. 13
Critique day Wed. 2/15
Progress of rand logo, slogan + colors Mon. Feb. 17

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Week 7: Feb. 20 + Feb. 22 + Feb. 24
Develop the content that will be used in the application
Develop wireframe sketches of the pages/pop-ups in the app
User-testing with the wireframes
Develop user-flow diagram
P Re-upload + fix Rad 90s Fest mobile site + Personal brand (business card, cover letter, resumé, pocket folder + website)

DUE
Progress
P Re-upload + fix Rad 90s Fest mobile site Mon. Feb. 20
Critique day Wed. 2/22

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Week 8, MID-TERM: Feb. 27 + Mar. 1 + Mar. 3
Content for application should be perfect!
Develop wireframe sketches of the pages/pop-ups in the app
User-testing with the wireframes
Develop user-flow diagram

DUE
P Personal brand (business card, cover letter, resumé, pocket folder + website) Feb. 27
User testing Wed. Mar. 1st
Fri. Mar. 3rd MOST COMPLETE PORTFOLIO!!
Saturday, Mar. 4th AIGA PHL Portfolio Review Prep
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Week 9: Mar. 6 + Mar. 8 + Mar. 10
Mock-up/design application
TOY STORY Book covers converted into posters

DUE
MOST COMPLETE PORTFOLIO!!

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Week 10, SPRING BREAK: Mar. 13 + Mar. 15 + Mar. 17
Iterate design of application, wireframe of the pages/pop-ups in the app, user-flow diagram, mock-up
User-testing with mock application
Design a CAPSTONE Process book

DUE
Progress
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Week 11: Mar. 20 + Mar. 22 + Mar. 24
Iterate design of application
User-testing with mock application
Design a CAPSTONE Process book

DUE
Chosen wireframe of the pages/pop-ups in the app, user-flow diagram, mock-up + design application for
All class critique Mon. Mar. 20th
P Personal brand (business card, cover letter, resumé, pocket folder + website) + TOY STORY Book
covers converted into posters Mar. 22
Thursday, Mar. 23rd DESIGN EXPO
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Week 12: Mar. 27 + Mar. 29 + Mar. 31
Iterate design of application
Design a CAPSTONE Process book

User-testing with mock application
P AIGA Graphic artist vs. Graphic designer poster

DUE
Progress
Critique day Wed. Mar. 29th

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Week 13: Apr. 3 + Apr. 5 + Apr. 6
User-testing with mock application
Should be finalizing application
Iterate CAPSTONE process book
P Clean-up The Notebook website

DUE
Progress
P AIGA Graphic artist vs. Graphic designer poster Apr. 3
Critique day Wed. Apr. 5th

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Week 14: Apr. 10 + Apr. 12 + Apr. 14
User-testing with mock application
Should be finalizing application
Iterate CAPSTONE process book

DUE
Progress
Critique day Wed. Apr. 12

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Week 15: Apr. 17 + Apr. 19 + Apr. 21
User-testing with mock application
Finalize application
Finalize CAPSTONE process book

DUE
P The Notebook website Apr.17
CAPSTONE FINAL CRITIQUE day Wed. Apr. 19th

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Week 16: Apr. 24 + Apr. 26 + Apr. 28
EVERYTHING DUE//FINAL PORTFOLIO PREP ALL WEEK

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