# Lab 1 - Care Corner Product Description

**Team Copper**

*Olayinka Adegun, Casey Carpenter, Kyle Grissom, Thorrell Turner, Ernest Webb, Tremain Young*

**Old Dominion University**

**CS410**

**Professor Ajay Gupta**

**7 December 2020**

**Version 1 - Draft**

# Table of Contents

# 1. Introduction

Far too often women feel unsafe and uncomfortable when they are in situations where they are alone and they often live with a constant fear of being attacked. To make matters worse, when women are attacked they often are unsure how to go about getting help and how to begin getting better. There is more that can be done to help improve the current situation women find themselves in.

Women often do not feel comfortable walking alone at night, this is a fear members of the opposite sex do not often share. They arm themselves with defensive weapons from mace, tasers, or even car keys between their knuckles to feel prepared for a possible threat. Occasionally on dates they sometimes cannot be upfront with a man in fear of upsetting him and him possibly reacting in a criminal way.

In an attack or a potential attack a woman can be restricted in her options for help, she can fight, she can run, she can scream for help, no restriction on these yet when it comes to her wanting to alert trusted friends and or family she is met with resistance. Police/emergency services are an option but more and more people are becoming more and more hesitant to reach out to them. It must become easier to send an alert to trusted friends and family, and quickly begin recording video and sound.

After an attack too many women are unsure what to call what they have gone through. Women can also be hesitant to report the crime they have been a victim because of four things; confusion,  lack of evidence, being afraid of judgement, and not knowing who or how to share their experience. Making evidence collection easier and well as education would make an improvement over all four of those.

There is currently no application available to women to work towards all of these issues just addressed. Care Corner fills this void by offering a platform that has features for getting out of uncomfortable situations, easily and quickly alerting trusted friends and family members, quickly recording audio and video, as well as offering educational resources on how to get help, where to get help, and what the reporting process is like.

# 2. Care Corner Product Description

Care Corner is a platform that works to make women less uncomfortable, as no mobile application can stop a criminal in his tracks. It aims to do this by offering resources, educational material, a journal, a mombot, a panic button, and a fake phone call feature. The app works to reduce likelihood of sexual assault, reduce severity of situations, and make recovery resources more accessible. A potential predator could be deterred by our fake phone call feature reducing likelihood, alerted friends and family could quickly respond to the situation leading towards a hopefully less severe situation, and educational material and resources make help one click away rather than time wasted trying to find resources on your own which may or may not be helpful.

## 2.1 Key Product Features and Capabilities

Care Corner offers a lot of solutions to aid in the safety of its users. The first of which is the Armed Journey Mode. In this mode the user's location and destination can be sent to select contacts in order to ensure friends and family are aware of the user's

location. The user will have complete control over which contacts receive what information.

Care Corner also features a Fake Phone Call feature. This can be pre-programmed to occur at a specified time, or can be activated to use in real time. This feature is to be utilized by the user in excusing themselves from uncomfortable situations. It also puts the phone in a more alert state, in case an emergency happens.

While the phone is in Armed Journey mode, or in a fake phone call, the Panic Button feature can be activated. The Panic Button feature is to be used if the caller feels as though they are in any imminent danger. The user can preset what the activation of the Panic Button does. Activating the Panic Button can result in messaging pre-selected contacts, sending GPS location to pre-selected contacts, recording audio video or GPS location, noting the time and GPS location of the activation of the button, and offering Emergency Services contact information such as 911 or campus police.

Care Corner also looks to educate its users, so that they can make more informed decisions, and have direction in case an assault takes place. We offer a Mombot feature, which the user can verbally state that plans for the evening, and receive informative feedback in return. Mombit will also issue a battery warning, so the user may be reminded to charge their phone before starting their journey. Mombot also connects users to a plethora of resources, both local and national, that can assist with everything from shelter, to reporting and education.

In the case of an assault, Care Corner will assist with the reporting process. First, when the panic button is activated, the GPS location and time will be noted. This will be instrumental and Reporting exactly where and when and assault took place. Care

corner will also prompt the user to note relevant information quickly, before the important details become lost in a user's memory.

### 2.2 Major Components (Hardware/Software)

Care Corner will be supported for Android and iOS operating systems. The external APIs that will be used in this product will be Jsoup, Google Maps API, and Twilio. Jsoup will be used in web scraping various resources from google and other sites. The Google Maps API will be used to find the nearest place and direct the user to that location (using their preset location data). Twilio will be used to create a chat bot to direct users via text or voice to find the help they need.

The web and file servers will be hosted on a Linux machine and we will also utilize JavaScript and PHP in conjunction with our website and database respectively. Furthermore, the web server is mainly just there to host our website whereas the file server will store data that our app will use that has been data scraped.

The database will be created using MySQL and be hosted on AWS. The database will be used to store the video/audio recordings, resource information, contact information, optional school information, user information (profiles, settings, location data, etc.).

## 3. Identification of Case Study

The main target of our product are women, though Care Corner can be used by anyone. Women are the group which are most likely to face the problems which will go hand in hand that women are more likely to seek a solution to the problems we address

but these situations are not only experienced by women. The group Care Corner will make the largest positive impact on are women. In the future Care Corner could easily be tailored to also make a significant positive impact on teens and preteens as well, really any youth that has a compatible device and can effectively use the application.

# 4. Care Corner Product Prototype Description

The Care Corner prototype will serve as a valid proof of concept, and all features will be implemented and functional, lacking only certain customizations, or working with a limited data set. User profiles will be able to be created and managed. User profile features will be included as well, including adding contacts, and password resets.

The limited scope of the prototype will reduce the amount of risk that we need to mitigate. Items associated with a user's physical safety will not apply. The user's data integrity will no longer be a risk either. Any items dealing with lack of internet or GPS will also be eliminated in the prototype. It is still worth mentioning, however, that the prototype will still be built and tested to handle these scenarios.

## 4.1 Prototype Architecture (Hardware/Software)

The prototype will be built on Android OS and will require a a physical or virtual android device to run. It will primarily be built on both Windows and Linux operating systems using Android Studio. The primary language Care Corner will be built with will be Java. The team will share version control via GitLab and organize the process using Jira.

The Care Corner prototype will utilize AWS services for it's server need. The web servers will be provided through AWS-S3 cloud servers. The data server will be built in an AWS-RDS server using MySQL. The file server will be on an AWS-FSx server.

The Care Corner prototype will rely on a few external APIs. Google maps will be used for querying resources near the User's current location. Twilio will be used in order to send MMS messages to the user's contacts when starting a journey, or activating the panic button.

## 4.2 Prototype Features and Capabilities

The Care Corner prototype will have almost the full array of features when compared to the RWP. The Safe Walk mode, Panic Button, the Journal, and Fake Phone Call features will be fully functional with the exception of minor customizable details. Some excluded aspects include customizable MMS messages, and which contacts receive panic/journey info.

The features associated with education will be fully implemented, however the dataset will be limited. We will not scrub the web for resources. Resources will be passed to the user, unfiltered, directly from either Google Maps API, or a small set of test resources. Mombot will be simplified as well. She will parse through inputs for key words and return a limited set of canned responses. Speech recognition will be done via talk to text, and handling the data once it is in text form.

## 4.3 Prototype Development Challenges

The first challenge when developing the prototype will be organization. The team will utilize Agile and Scrum fundamentals with Jira as the central hub for organization. However, even with this knowledge, it will still be an obstacle to learn how to function properly as a team.

The next obstacle will be associated with the teams lack of experience with the technologies needed to develop the application. The team is experienced with Java, but none of them have developed using Android Studio before. No one on the team is familiar with Google Maps API or Twilio's feature set. The team must also learn how to build a properly functioning database. Lastly, the team must learn to properly integrate all of these features into a working prototype.

The last obstacle comes in the way of proper etiquette. We must learn how to properly write our code in a way that we can check behind each other when needed. The team must properly test the prototype. The team must properly integrate catches to ensure our product is not crashing due to overseen errors.

# 5. Glossary

**Agile**: Set of frameworks and practices where solutions evolve through collaboration between self-organizing cross-functional teams

**Amazon Web Services (AWS)**: Cloud computing platform provided by Amazon

**Android**: Mobile operating system primarily developed by Google

**API:** Application Programming Interface

**Client-server**: Computer system where a central server provides data to a number of networked workstations

**Cloud Based Database Server**: Virtual infrastructure that performs application and information-processing storage

**Data Retention**: Storage of an organization's data for compliance or business reasons

**Database**: Structured data held in a computer

**File Server**: Controls access to separately stored files

**Geofencing**: Using GPS to create a virtual geographic boundary

**GitHub**: Web-based collaboration platform for software developers

**GPS:** Global positioning system

**Gradle**: Build automation tool for multi-language software development

**GUI**: Graphical user interface

**HTML**: Standard markup language for documents designed to be displayed in a web browser

**iOS**: Mobile operating system developed by Apple

**JavaScript**: Object-oriented computer programming language commonly used to create interactive effects within web browsers

**Jsoup**: Open source Java library used mainly for extracting data from HTML

**Kotlin**: Object-oriented programming language initially designed for Android and Java Virtual Machine (JVM)

**Linux**: Unix-like, open source operating system for computers, servers, mainframes, etc.

**MySQL**: A freely available open source relational database management system that uses structured query language (SQL)

**PHP**: General-purpose scripting language suited to web development

**RSS Feed**: Set of instructions on the computer server of a Web site. The feed tells the reader when new material has been published on the Web site

**Scrum**: A process framework used to manage product development and other knowledge work

**Stakeholder(direct)**: Those involved in the company's day-to-day activities

**Stakeholder(indirect):** Those more interested in the result of the production

**Twilio**: A developer platform for communications

**UI / UX**: User Interface / User Experience

**Web Scraping**: Extracting/scraping data from websites

**Web Server**: A computer that runs websites

**Windows**: Series of operating systems developed by Microsoft

# 6. References

"About 211." 211.Org, www.211.org/pages/about. (1)

"List of Hotlines." Please Live, Davo Productions, 15 Jan. 2020, www.pleaselive.org/hotlines/. (2)

Amin. "Step by Step Guide on Scraping Data from a Website and Saving It to a Database." How PC Rules My Life, 13 Dec. 2017, howpcrules.com/step-by-step-guide-on-scraping-data-from-a-website-and-saving-it-to-a-database/. (3)

Miles, Stephanie. "5 On-Demand Apps for Emergency Services." Street Fight, 1 Apr. 2016, streetfightmag.com/2016/04/01/5-on-demand-apps-for-emergency-services/. (4)

Self-Care for Friends and Family. (n.d.). Retrieved September 27, 2020, from https://www.rainn.org/articles/self-care-friends-and-family. (5)

Staff, Psyche Central. "Common Hotline Phone Numbers." Psych Central, 6 Mar. 2019, psychcentral.com/lib/common-hotline-phone-numbers/. (6)

Tips for Talking with Survivors of Sexual Assault. (n.d.). Retrieved September 27, 2020, from https://www.rainn.org/articles/tips-talking-survivors-sexual-assault. (7)

Questions & Answers on Sponsorship(2019). Alcoholics Anonymous World Services, Inc. https://www.aa.org/assets/en_US/p-15_Q&AonSpon.pdf. (8)

Jain, A. (2019, April 09). Database Hacking & Its Prevention. Retrieved October 07, 2020, from https://thecybersecurityplace.com/database-hacking-its-prevention/ (9)

"Suicide Statistics and Facts." SAVE, save.org/about-suicide/suicide-facts/. (10)

“Preventing Suicide |Violence Prevention|Injury Center|CDC.” Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 21 Apr. 2020, www.cdc.gov/violenceprevention/suicide/fastfact.html. (11)

“The Relationship Between Mental Health Care Access and Suicide.” RAND Corporation, www.rand.org/research/gun-policy/analysis/essays/mental-health-access-and-suicide.html.) (12)

“Addiction Statistics - Facts on Drug and Alcohol Use.” Addiction Center, 18 Sept. 2020, www.addictioncenter.com/addiction/addiction-statistics/. (13)

Duration of Suicidal Crises.” Means Matter, 7 Mar. 2017, www.hsph.harvard.edu/means-matter/means-matter/duration/. (14)

Renninson, Callie. “Rape and Sexual Assault: Reporting to Police and Medical Attention.” Bureau of Justice Statistics (15)

“Why Don't They Tell?” Nctsn.org. (16)

What Is Sexual Abuse?” Hope Alliance, www.hopealliancetx.org/sexual-assault-statistics/. (17)

50 Obstacles to Leaving.” The Hotline, www.thehotline.org/resources/50-obstacles-to-leaving/. (18)

“Find Support.” Aspergillosis Patients and Carers, 29 May 2020, aspergillosis.org/find-support/. (19)

“Support Groups.” MHA Screening - Mental Health America, screening.mhanational.org/content/support-groups. (20)

Basler AG. “Sales and Support: Basler.” Basler AG, 7 Oct. 2020, www.baslerweb.com/en/sales-support/. (21)

“The US System Didn't Protect These Women - so Now They're Taking a Stand for Others.” *Amnesty International*, www.amnesty.org/en/latest/news/2019/10/gun-violence-report/.(22)

Davey, Melissa. “Domestic Violence: Five Women Tell Their Stories of Leaving - the Most Dangerous Time.” *The Guardian*, Guardian News and Media, www.theguardian.com/society/ng-interactive/2015/jun/02/domestic-violence-five-women-tell-their-stories-of-leaving-the-most-dangerous-time.(23)

“How Long Does It Take for an Addiction to Develop?” *Drug Rehab*, www.drugrehab.com/addiction/how-long-does-it-take-to-develop/.(24)

“SQL Injection Prevention.” OWASP, Open Web Application Security Project, cheatsheetseries.owasp.org/cheatsheets/SQL_Injection_Prevention_Cheat_Sheet.htmL (25)

Movil, Noticiero. “News.” Noticiero Movil, 22 Oct. 2016, noticieromovil.com/what-women-worry-about-when-theyre-out-at-night/(26).

“Parenting, Baby Names, Celebrities, and Royal News.” CafeMomcom, cafemom.com/lifestyle/215107-things-women-do-to-protect-themselves/255361-katz_then_compares_the_reaction_and_responses_from_the_men_in_the_room_to_the_women_and_unsurprisingly_they_are_drastically_different (27)

Dewan, Shaila. “Why Women Can Take Years to Come Forward With Sexual Assault Allegations.” The New York Times, The New York Times, 18 Sept. 2018, www.nytimes.com/2018/09/18/us/kavanaugh-christine-blasey-ford.html.(28)

“SCRUM Methodology.” Zaynab's Blog, Zaynabzahra, 7 Oct. 2017, zaynabzahrablog.wordpress.com/2017/10/07/scrum-methodology/. (29)