Lab 1 – Care Corner Product Description

Kyle Grissom

Old Dominion University

CS411

Professor J. Brunelle

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1.   Introduction

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

 Many women do not feel comfortable walking alone at night: this is a fear members of the opposite sex do not frequently share. Women may arm themselves with defensive weapons from mace, tasers, or even car keys between their knuckles to feel prepared for a possible threat (Runyen 2007). Some women find themselves in uncomfortable situations on dates from which they need a way out with little to no confrontation. These three examples are worries women are more often burdened with than men.

In an attack or a potential attack, a woman can find herself limited in her options for help; she can fight, she can run, she can scream for help. There is nothing stopping her from doing these actions yet when it comes to wanting to alert trusted friends and or family she is now met with resistance due to current software limitations making it difficult to alert a preselected group of contact near-instantly. Police or other emergency services are an option but more women are becoming hesitant to reach out to them for various reasons(Schreyer 2018). 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 just experienced; sexual assualt, sexual abuse, sexual harrassment, and rape can be difficult enough to distinguish and can only be more difficult after being in a traumatic state(Amnesty International 2019). Women may also be hesitant to report the crime of which they have been a victim of due to 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 try and ease the burden of these issues addressed. Care Corner fills this void by offering a platform that has features for getting users 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. Product Description

Care Corner is a platform that works to make women less uncomfortable by providing

them with beneficial tools to lighten their load. In more detail, 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. These are the ways in which the app could aid the

user: a potential predator could be deterred by the 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. Care Corner

is a mobile application which will need internet connection, camera permissions, microphone

permissions, and access to contacts.

2. 1   Key Product Features and Capabilities

The Armed Journey Mode shares information about a trip with trusted friends and family

including: user scripted messages to inform recipient of trip information, the user's location, and

the user's destination. The user is able to decide if they share all of that information or only

specific information. The user is able to quickly share this alert of information because time is of

the greatest essence in these situations. Inside of this feature the user is able to activate the Panic

Button to quickly begin recording audio and video. This feature achieves the product goal of

giving the user a tool to quickly alert a pre-selected group of certain information, this

information varies depending on user selection.

The Fake Phone Call allows the user to activate a fake call to their phone so that they can

excuse themselves from a situation when needed or seem to be on the phone with a friend. These

fake calls can be programmed to occur at specific times, appear to come from a specific person, and to be able to say a key phrase to the fake call to activate the Panic Button. This feature achieves the product goal of providing the user with a tool to easily excuse themselves from a situation minimizing chance of unwanted confrontations or deter potential attackers by appearing to be on the phone with a friend.

The Panic Button is for in the case of an emergency to quickly message preselected contacts, share GPS location with preselected contacts, and prepare a call to 911 or campus police. The Panic Button also begins recording video and audio, GPS location, and takes a timestamp of the button's activation. This feature achieves the product goal of providing the user with a tool to quickly send alerts, record audio and video, location, and time, or in other words alerting help and gathering possible evidence to help the user.

The Mombot allows the user to verbalize their plans and receive helpful mom-like feedback or advice as well as reminding the user of the option to schedule a Fake Call or start an Armed Journey. An example of the way the Mombot works is the user states to the Mombot that they will be going to a bar tonight, the Mombot then advises the user to be sure to watch their drink being poured and not to leave their drink unattended. This feature achieves the product goal of providing the user with a tool to remind the user of things to look out for to help the user stay safe.

The Journal feature offers a secure journal or diary to use as they would like and which could possibly aid in recovery if something were to happen. This feature is just like having a real diary but on their phone, even better than a real one because there is no need to worry about ink or paper and this is password protected. This feature achieves the product goal of providing the user with a tool to aid in recovery, though it also serves other benefits outside of that goal.

The resources and education section allows the user to quickly and easily access resources from a national level or a local level through the use of geofencing. Reading material is from government or official documents to trusted blogs or national hotlines. Geofenced resources are shelters, nonprofits, counselors, and campus police. Websites offered are from government websites as well as trusted non-profit organizations. The user is offered educational material to inform them of what the reporting process is like as the more comfortable they are with the process, the more likely they may be to report.

2.2   Major Components (Hardware/Software)

Care Corner has the following hardware requirements: a file server, a web server, a cloud based database server, as well as an Android or iOS phone with connection. The slightly unique aspect is the need to backup important and sensitive information that could potentially be used as evidence of a crime. Care Corner's server infrastructure is done on Amazon Web Services. The web server and file server are maintained on AWS-S3 web service and the database is maintained on AWS-RDS with MySQL.

Care Corner has the following software requirements: Web Programming on HTML, CSS, JS, and PHP; Operating Systems on Windows, Linux, Android, and iOS; Github for collaborative development and software version control; Build Manager of Grade; Workflow of Gitlab. All are standard for cross development and team work. HTML and such enables the upkeep of the website. Operating systems enable both development and maintenance of site and mobile application. Build Manager and Gitlab aid development and maintenance.

Figure 1

Care Corner Majoral Functional Component Diagram
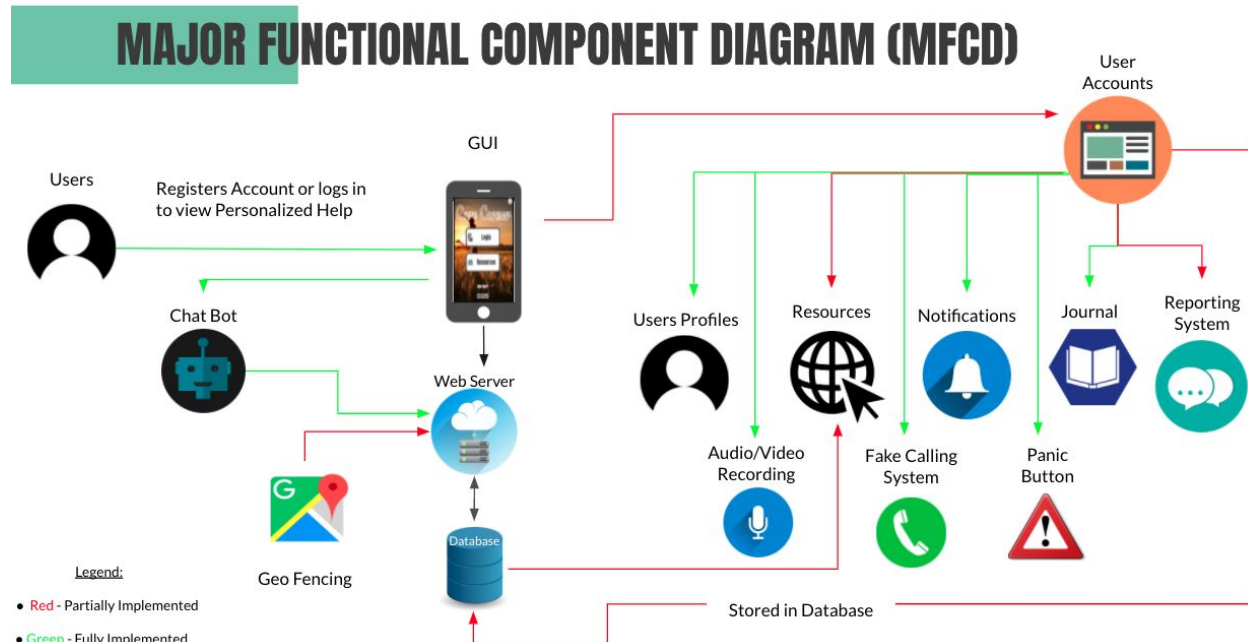
The MFCD shows that the Chatbot, GUI, and GeoFencing work directly with the Web

Server: this works to feed the Chatbot information as well as make the Chatbot perform properly;

also this allows the GeoFencing API to work properly for our needs of finding nearby resources;

and finally the GUI works with this to display all the information on the mobile application. The

Web Server works with the Database to retrieve and send data, ranging from account information

to videos that have been recorded. The Database works with the Web Scraper, Accounts, and

Resources to retrieve current information both data and resources to ensure everything listed

stays up to date. Finally it shows the User Accounts work with the GUI and the database to

ensure proper mobile application functionality as well as personalization and profiles. The User

Accounts can be broken down into many different nodes which have corresponding data being

stored; profiles, recording, resources, notifications, Fake Call, Journal, Panic Button, and

reporting system. There will be a fair amount of software to be developed, difficult algorithms

for the features and our resource gathering/updating to be created, as well as the interface to be

made.

3. Identification of Case Study

The main target of the product would be women though Care Corner can be used by

anyone. The initial user base would be English speaking women in the United States. This is

because women are the main target of the product, the early implementation will not support

other languages, and the mapping API will be United States restricted. In the future Care Corner

could easily be tailored to also make a significant positive impact on teens and preteens as well.

Further in the future Care Corner could also be tailored to be used worldwide and in many

different languages and make significant positive impacts everywhere.

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): A set of functions that allow one program to access data and interact with an external program

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): Provides users with positioning and navigation information.

Gradle: Build automation tool for multi-language software development

GUI (Graphical User Interface): The set of interactive visual components in software to improve the user experience.

HTML (Hypertext Markup Language): 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 (Hypertext Preprocessor): General-purpose scripting language suited to web development

RSS Feed (Really Simple Syndication 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): The graphical layout of an application which includes components such as buttons, navigations bars, etc.

Web Scraping: Extracts and scrapes data from websites

Web Server: A computer that runs websites

Windows: Series of operating systems developed by Microsoft

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