

GNG2101

Introduction to Product Development
and Management for Engineers
and Computer Scientists

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**Project Deliverable B: Needs, Problem Statement, Metrics,
Benchmarking and Target Specifications**

Group B-14: Personal Safety

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Abstract

The purpose of this report is to analyze the client's statement in order to get a better understanding of needs and requirements to develop the personal safety app. The client's needs are identified by comparing existing apps to outline the key problems that the client is facing and find possible solutions.

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Introduction

As per the requirement of the GNG2101 course, our team was tasked to design a project for a client. This project is an app focused on Personal Safety which alerts the user's emergency contacts if need be. The average user is someone who qualifies as a vulnerable person, lives alone and/or often goes on excursions by themselves. The project description gave the team an idea of why this application is relevant, but meeting the client gave a special importance to this matter. The team had the opportunity to meet with the client for the first time on September 20th, 2021. This report delves deeper into the issues mentioned by our client during the meeting.

The client and their friends have faced several challenges where the proposed app could have helped them overcome the situations. For instance, many people injure themselves during outdoor activities or when living alone. They are unable to contact their family and friends in time to get the help they require. The app we are developing ensures that the emergency contacts will be alerted if the user is unreachable for a set amount of time.

Our goal is to create an app with a simple user interface so that users can communicate their location and status to emergency contacts and feel at ease when alone. Through the client meeting and benchmarking done in this report, we have identified key features that we plan to incorporate when building the app.

Client Statements and Needs

Table 1: List of client statements which have been translated to needs and requirements for the app. The importance column ranks the needs according to the client's priorities.

	Client Statements	Client Needs	Importance 1(low) - 5(high)
1	I don't like having to manually turn off the app when I'm not hiking.	Timers are customizable.	5
2	I don't like downloading apps if I don't know where the apps are from I don't like giving my information/email out	App is secure.	3
3	I would like the app to check in with me before alerting my emergency contacts	App checks in with the user before alerting their emergency contacts.	5
4	I don't like having just to press a button to check in with the app. Some of my friends suffer from seizures and can press a button without intending to do so.	App asks for a more interactive response from the user like a typed message, a voice response, or has more than one button to press.	5
5	I don't like constant reminders	App has customizable reminders	4

6	The design is not very significant to me.	App has a simple design.	1
7	I have an iOS device	App works on iOS.	3
8	My emergency contacts do not regularly check their emails.	App sends alerts via text/call.	5
9	I've tried some other apps... One was only available in the States	App works in Canada.	5
10	I am not technologically inclined	App is user-friendly.	5
11	I don't like downloading apps because I have limited space on my device	App is light-weight.	3

Problem Statement

Design and implement a user-friendly mobile application that allows individual people to confirm their safety to their emergency contacts.



Metrics


Table 2: List of metrics that were identified corresponding to the client's needs listed in Table 1.

METRIC DESCRIPTION	UNIT	Need Number (from Table 1)
Download Size	MB	10
Price	CAD\$	10
Notifications	List	4
Time between Check-Ins	Hours	1
Compatible Regions	Countries	9
Database Size	MB	10, 11
Cost for Creating App	CAD\$	10
Speed of App	ms	10
RAM Requirement	MB	10
Customer Satisfaction Rating	Number (scale 1-10)	10
Production Life Span	Years	10
External Communication	Communication methods	8
Compatible Operating Systems	OS	7

Benchmarking

Table 3: Comparing features and functions of similar products

Product Name	Ratings	Features	Final Spec	Comments
Snug Safety  Snug Safety Figure 1: Snug Safety Logo	Google Play Review: 4.3	<ul style="list-style-type: none"> - Snug checks in with users every day, at a time of their choosing - If they respond the timer is reset for 24 hours - If the user does not respond, then: <ul style="list-style-type: none"> - on a free plan, a text will be sent to their emergency contacts telling them the user has missed a check-in. - on a paid plan a Snug dispatcher calls the user. If they do not answer, they will leave a voicemail with a callback number and call their contacts. If the user has still not checked in and none of their contact are able to check on them, it will request a wellness check to the device's last location - Sends reminders (5) about the check ins - Big green check-in button 	Download size: 6.59MB Price: Free plan or \$9.99/month or \$99/year Compatible OS in Canada: Android Communication methods: text, phone	<ul style="list-style-type: none"> - To check in, the user must press a large green button. Our client would like it so that it isn't easy to accidentally press the button. -The app shares an inspirational message after checking in. Our client does not like this feature. - Not available on iOS in Canada - Our client does not want so many notification reminders
EyeOn App  EyeOn App Figure 2: EyeOn App Logo	Apple store Review: 4.0 Google Play	<ul style="list-style-type: none"> - This app provides a way to make sure that if you do not respond to a "check-in", others will be notified. - The emergency contacts are notified by email and text message/SMS. 	Download size: 68.7MB Price: \$13.99 - one time purchase	<ul style="list-style-type: none"> - The emergency contacts receive information regarding your location and battery level. - The user is not

	Review: 4.0	<ul style="list-style-type: none"> - Allows customized scheduling of the “check-in”. - The app has a pause feature, you can stop the service for the desired amount of time. - The application adjusts for time zones/time changes. If you travel to a different time zone or country, the app will automatically adjust for the time difference. - The users will be prompted with a push notification for their “check-in”. 	<p>Compatible OS in Canada: Android and iOS</p> <p>Communication methods: text, email</p>	<p>notified if an alert was sent out. Our client specifically requested this.</p> <p>- You do not get to preview the message before it is sent to the contacts. Our client specifically requested this.</p>
<p>ElderCheck Now</p>  <p>Figure 3: ElderCheck Now Logo</p>	<p>Apple store Review: 4.0</p>	<ul style="list-style-type: none"> -Eldercheck Now allows the user to check-in with a caregiver or loved one - Check-ins include location, heart rate, and a status update such as “I’m ok” or “call me” -Caregivers initiate a check-in with the user and are then contacted through the app once the user checks-in -Caregivers can send automated repeat check-in requests until the user responds -Check-in request can be scheduled for specific days and times 	<p>Download size: 70 MB</p> <p>Price: free</p> <p>Compatible OS in Canada: None</p> <p>Communication methods: in-app</p>	<ul style="list-style-type: none"> -Not available on Android - Not available in Canada -Users and caregivers must both have the app for proper functionality -The user does not have to confirm a check-in before it is sent which could result in false alarms -Caregivers are not contacted by text as the client would like. -The heartrate of the user is relayed to the caregiver at every check-in

				which may be too intrusive for the client
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Target Specification

Table 4: Target values for the metrics was set through benchmarking similar products in Table 3

Metric	Unit	Target Specification	Marginally Acceptable Values	Ideal values
Download Size	MB	The app size is under 50MB	<100MB	<50MB
Price	CAD\$	The app is free to use	0\$	0\$
Notifications	List	The application will offer several, customizable notifications	N/A	N/A
Time between Check-Ins	Hours	Time between check-ins is decided by the user	N/A	1-24 hours
Compatible Regions	Countries	The app works in Canada	Canada	North America
Database Size	MB	The size of the database should be under 25MB	<40MB	<25MB
Cost for Creating App	CAD\$	The app will cost no more than \$50 to create	<50\$	<50\$
Loading time	Seconds	The app will take less	<4 seconds	<3

		than 3 seconds to load		seconds
RAM Requirement	GB	The app should use 3GB of RAM	<4GB	<3GB
Customer Satisfaction Rating	Number (scale 1-10)	From a scale of 1-10, the customer satisfaction rating will be 8	7	>8
Production Lifespan	Years	The app has a production lifespan of 5 years	>3 years	5 years
External Communication	Communication Methods	The app will be able to send text messages	Text message	Text message and email option
Compatible Operating Systems	OS	The app will function on iOS	iOS	iOS and Android

Reflection

The client meeting had a positive impact on the process and the results. By getting to know the client and putting ourselves in their shoes, we have a clear understanding of what the client (the average user) wants for this application. The meeting made developing the client statements into needs possible. Also, the client informed us of which method of communication she prefers to use which will be helpful during the development process. Overall, the information collected during the client meeting made the process smooth and gave us well-defined results.

Conclusion

The problem definition process helped the team understand the problem. Through this process, we have determined what necessitates we need to address to develop the right product. The team has also had the opportunity to empathize with the client and understand their frame of reference. We've also benchmarked existing solutions to determine their shortcomings and strengths. Lastly, the team has developed metrics and target specifications that go along with the metrics to allow us to keep score and evaluate tradeoffs.

Bibliography

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