GNG 2101 Deliverable B:

Needs, Problem Statement, Metrics, Benchmarking and Target Specifications

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Abstract

      This report showcases the details obtained from the initial client meeting. A background on the client as well as the application specifications are provided. The statements from the client were translated into needs and prioritized based on their importance to the project. From there, benchmarks were created to compare with existing projects. Subsequently, target specifications for this project were used to determine the exact needs of the application. Finally, the team reflected on how the meeting with the client affected the team's process and results.

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List of Acronyms

Acronym	Definition
iOS	iPhone Operating System

1   Introduction

1.1   Problem

The client is a widowed individual with cataracts. In the event of a major accident, she does not have a readily available person in the home who is able to assist. This application's goal is to supersede the need for a family or friend to constantly check in on the client at random.

1.1.1   User requirements

The application does not just have benefits for the specific client, the growing elderly population in Canada and around the world who are unable to afford homecare will benefit from such an application as well.

1.1.1.1   Key aspects/differences from other applications

While there are currently applications on the market with similar functionality, the group will aim to make an application that has a minimalistic design, does not bombard clients with notifications, and ensures that the individual using the application is always in control rather than vice versa. With these key principles, group 15 will differentiate the functionality of the application from all others.

2 Translated and Prioritized Client Needs Based on Client Statements/Observations

Table 2.1: Client Statements and Client Needs

#	Client Statements	Client Needs	Imp
1	"I would like [the application] to go on either [iPad or iPhone] … i have an iPhone 6s"	Application is compatible with iOS	5
2	"[with the application I'm okay], the only way they get in touch with contact people is [the app] will email them … but [people] don't check their emails all that often … text or phone would be [ideal] … email is just not quick enough"	Application is able to send messages using different methods, such as text or phone calls	5
3	"I am not that technologically adept"	Application is easy to use/user-friendly	4
4	"The iPad would check with me … make sure i was okay and demand a particular kind of response, like a worded response or something that could be typed"	Application has the ability to send the user messages asking if they are ok with the option for the user to respond if they are	5
5	"If [the app] didn't get the [confirmation that the user is ok], then it would get in touch with one of my contact people"	Application can send messages to user's contacts in cases of emergencies	5
6	"I don't think im ever going to need to use this but it's a nice thing to have back up"	Application works consistently	4
7	"I [want to be able to] set the times for hiking for instance … if i wanted to be back at the car in 2 hours and if i didn't show up … the [app] would check with me"	Application has a customizable timer feature that allows users to indicate their estimated time of completion for a certain activity. The application will ask for an update status if the user has not checked in by the estimated time of completion.	4
8	"I would like somehow that as soon as i got online that would turn off the app and reset it for the next time I had it set for … one of the big things that i'm looking for is something that will turn off and reset by itself … and i can go in and … make sure [the app is working]"	Application turns off automatically and has an automatic reset feature that the user can check when needed	5
9	"I am forgetful … If [not possible] to do an automatic turn off and reset … it would be necessary [to have notifications sent to me], but just one"	Application can send automatic reminders to remind the user to check the application	5
10	"Some [applications] will get in touch with contact people without checking with you [which is not a] good	Application asks for confirmation from user before getting in touch with user's contacts	5

	idea … if i don't turn [the app off] … then i want the app to try and contact me … that is really important"		
11	"After [the application] tried to get in touch with me and … [hasn't] been able to … only [then] do i want my contact people [contacted]"	Application alerts user's emergency contacts if the user does not respond to a notification asking about their well-being	5
12	"I don't want a whole lot of reminders showing up … reminding me because i would find that extraordinarily irritating"	Application does not send multiple reminders in a short period	3
13	"Im due for cataract surgery … things that are similar in color don't stand out against each other"	Application has colours that have good contrast	2
14	"[with the application SnugSafe], it has a zillion features on it … it will get in touch with social services … hospitals, call 9-1-1 … it's more than i need"	Application has a minimalistic design	4
15	"Apple watches … can tell when [a user] is falling and [ask] 'are you okay' … a verbal checking would be fine"	Application can react to verbal responses	2
16	"[a feature where you could press a button just to send to you emergency contacts to say you fell] would be great"	Application has feature that allows user to manually indicate an emergency	5
17	"[The application sending the user's location to emergency contacts is] a good idea … would be a nice option [to send the location not just during emergencies, but also as updates]"	Application is able to send a user's location to their contacts	3
18	"[one of] the most important [is that] i can set [the app] to check everyday in the morning"	Application allows users to set their preferred check in times	5
19	"a pause and reset in [an activity]… is a good idea if you have time … [but] when i'm visiting [family] they're there with me all the time, i don't need to have [the app on] while i'm there and i don't think that's a big issue… [being able to turn off the app when i'm with family] is not a really big [issue] "	Application has the the ability to be paused	3
20	"the app should be able to be turned off"	Application check-ins and emergency contacts texts can be turned off	3
21	"[a message sent to contacts that I am turning off the app] is a good idea, and a way to turn that off if i don't want them notified"	Application gives users the choice to send their contacts a message when they will temporarily stop using the application	3

3 Problem Statement

The client is in need of a simple personal safety application compatible with iOS that has fundamental functionalities, such as daily reminders, check-ins, customizable timers, and message alerts capable of being sent to the user's contacts in cases of emergencies.

4 Metrics

Table 4.1: Client Needs Translated into Units

Client Need	Unit
Functional Requirements	
Application is compatible with iOS	N/A
Application is able to send messages using different methods, such as text or phone calls	N/A
Application has the ability to send the user messages asking if they are ok with the option for the user to respond if they are	Characters
Application can send messages to user's contacts in cases of emergencies	N/A
Application has a customizable timer feature that allows users to indicate their estimated time of completion for a certain activity. The application will ask for an update status if the user has not checked in by the estimated time of completion.	minutes, hours
Application turns off automatically and has an automatic reset feature that the user can check when needed	hours
Application can send automatic reminders to remind the user to check the application	N/A
Application asks for confirmation from user before getting in touch with user's contacts	N/A
Application alerts user's contacts if the user does not respond to a notification asking about their well-being	N/A
Application does not send multiple reminders in a short period	reminders/day
Application can react to verbal responses	N/A
Application has feature that allows user to manually indicate an emergency	N/A

Application is able to send a user's location to their contacts	N/A
Application allows users to set their preferred check in times	N/A
Application has the the ability to be paused	minutes, hours, days
Application can be turned off	N/A
Application gives users the choice to send their contacts a message when they will temporarily stop using the application	Characters
Non-Functional Requirements	
Application is easy to use/user-friendly	N/A
Application is reliable	N/A
Application has colours that have good contrast	N/A
Application has rudimentary/minimal features	N/A
Constraints	
Development costs	$
Development time	days
Storage space (app size)	mb

5 Benchmarks

Table 5.1: Benchmarking Client Needs

Client Need/Metric Descriptor	Unit	Life 360	Eye On App	I'm Okay - Personal Safety	Snug Safety
Functional Requirements					
Application is compatible with iOS	N/A	Yes	Yes	Yes	Yes
Application is able to send messages using different methods, such as text or phone calls	N/A	No	Yes	No	Yes
Application has the ability to send the user messages asking if they are ok with the option for the user to respond if they are	Characters	No	Yes	Yes	Yes

Application can send messages to user's contacts in cases of emergencies	N/A	No	Yes	Yes	Yes
Application has a customizable timer feature that allows users to indicate their estimated time of completion for a certain activity. The application will ask for an update status if the user has not checked in by the estimated time of completion.	minutes, hours	Yes	Yes	Yes	Yes
Application turns off automatically and has an automatic reset feature that the user can check when needed	hours	No	Yes	No	No
Application can send automatic reminders to remind the user to check the app	N/A	No	Yes	Yes	Yes
Application asks for confirmation from user before getting in touch with user's contacts	N/A	No	No	No	No
Application alerts user's contacts if the user does not respond to a notification asking about their well-being	N/A	No	Yes	Yes	Yes
Application does not send multiple reminders in a short period	reminders /day	Yes	Yes	Yes	Yes
Application can react to verbal responses	N/A	No	No	No	No
Application has feature that allows user to manually indicate an emergency	N/A	No	No	No	No
Application is able to send a user's location to their contacts	N/A	Yes	Yes	Yes	No
Application allows users to set their preferred check in times	N/A	No	Yes	Yes	Yes
Application has the the ability to be paused	minutes, hours, days	Yes	Yes	Yes	Yes
Application can be turned off	N/A	Yes	Yes	Yes	Yes
Application gives users the choice to send their contacts a message when they will temporarily stop using the application	Character s	No	No	No	No
Non-Functional Requirements					
Application is easy to use/user-friendly	N/A	Yes	Yes	Yes	Yes

Application is reliable	N/A	Yes	Yes	Yes	Yes
Application has colours that have good contrast	N/A	Yes	Yes	Yes	Yes
Application has rudimentary/minimal features	N/A	No	Yes	Yes	Yes
Constraints					
Development costs	$	N/A	N/A	N/A	N/A
Development time	days	N/A	N/A	N/A	N/A
Storage space (app size)	mb	145.9	27.5	N/A	22.9

6 Target Specifications

Metric Descriptor	Unit	Marginal values	Ideal values	Value
Storage space (app size)	mb	> 65	< 150	< 140

As the client requires an application compatible with iOS, the only significant target specification with a numerical value would be the storage space. The application should be less than 140 mb which gives enough space to add the features the team is planning on implementing, as well as limiting the space needed for the client to download the app. Additionally, the information obtained from the benchmarked applications demonstrates an idea as to what features the team could realistically include in the application. Due to the client's difficulties with using technology, the client needs this application to be user-friendly and straightforward. This application will be compatible with her iPad or iPhone. Moreover, many of the benchmarked applications do not include an automatic reset feature which is why the team plans on prioritizing this need. It is extremely important that the safety application be automated, in other words, once the client has checked in and has been reported safe, she would not have to set it for the next day or see multiple other reminders. Each day, the client would be sent a safety reminder at approximately 10 am, or at any time of her choosing, to ensure she is safe. One of the most important needs is that the safety reminders would only come after the client has not checked in. These reminders must come by means of text or phone call, not email. As shown in the benchmarked data, some applications only offer email alerts; however, people are more likely to check for text messages or phone calls than their emails. Subsequently, if the client does not respond, a text would be sent to her phone asking about her well-being. If the client does not respond to that text, then it is key that her emergency contacts are notified, who could then decide what to do from there. Many other applications directly contact emergency services when

they believe the user is in trouble; this is an undesirable trait to the client as false emergencies can be triggered frequently. In addition, the application must be consistent and be able to have a timer function that can be used when the user is doing an activity. That way, this application can be used for unaccompanied activities, like if the user were to go on a hike. If she does not complete the hike after an allotted time and does not respond, texts will be sent to her emergency contacts. Furthermore, this application must be able to have a turn off function. This would be used if the client is with family or does not want the application to be used for a certain amount of time. This function would give the option to the client to message her contacts stating that she had turned off the application. Overall, this product will be a user-friendly safety, which is customizable to the client's needs.

7 Reflection

The client meeting brought the team great insight into the purpose of the project which aided in figuring out the problem that needed to be solved. The interview highlighted aspects such as who the target audience is for this application and narrowed the scope of what the project is. The interview revealed the exact needs of the client in order to make the application useful for her. The client not only provided the team with details of the features she would like in an ideal personal safety application, but she also provided background information of her desire to propose this project, as well as personal details about herself. These details influenced the team's direction with the development of the project. Simple statements from the client revealing personal characteristics, such as a client statement describing herself as not being technologically adept, the team was able to make the decision to make the application more minimalistic and to not focus too heavily on additional futile features. The process of this project became a process of the team members putting themselves in the shoes of a senior and seeing what they would like within this application. It was crucial for team members to remember that the application is not being designed in accordance with their own personal preferences, but with those of the client's. The results became more simple with the least amount of features within the application while still completing all needs of the client.

8   Conclusions and Recommendations for Future Work

In conclusion, the client provided the team with much information regarding her vision for the creation of a personal safety application. The client expressed her need for an application that can send alerts to the user's contacts in cases of emergencies. The team used the client's statements about aspects such as her requirements, her likes, and her dislikes, as well as notes about her personality, and translated them into client needs. The needs were then prioritized and used to form a problem statement to help guide the team in solving the right problem. Furthermore, a list of metrics were created from the needs, and subsequently a list of target specifications. Using the information gathered from this deliverable, the team will begin to divide the project into subtasks and commence the concept generation process. Overall, the final application can be useful not only for the client, but for many other elderly individuals.

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