

Mask for the Elders: Elderask

Team 8: rxElder

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1. Introduction

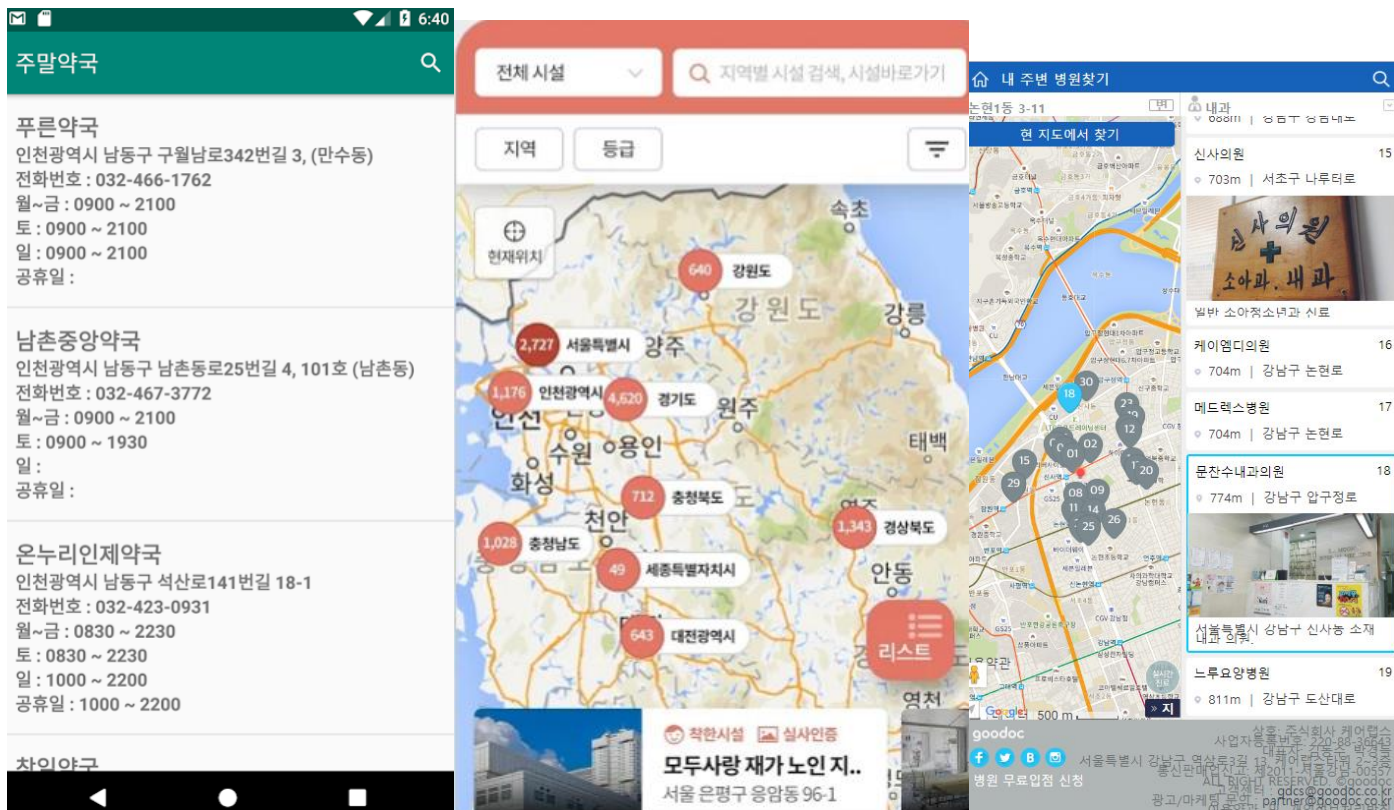
Currently, the world is in a state of panic due to COVID-19. Since December 2019, the coronavirus has spread worldwide. Originating in China, it spread to close Asian countries (Korea, Japan, Thailand, etc.). Furthermore, it has also reached far-off countries such as the USA, Italy, and France. Washing hands frequently and wearing a mask for outside excursions has shown to be effective in preventing infection, which makes masks an essential commodity in these trying times.

The problem is that the masks in pharmacies are quickly sold out. Mainstream media claims that it takes just 30 minutes for every mask in a dispensary to be sold. There are people who queue up early for the masks, because otherwise, it is impossible to buy any. Moreover, the crowds are potentially exposed to the virus during the long waiting time- elders over the age of 65 are a particular concern due to their weaker immune systems. Our mask reservation application aims to make buying masks less of a health hazard to the elderly.

The primary users are elders who have difficulty queueing for masks. This is a significant problem given the importance of owning masks during the current pandemic. Our application, Elderask, aims to inform users of the current status of the remaining masks in nearby pharmacies, and also provides the address and contact numbers of each store for easy reservation of masks.

2. Background

There are no solutions from the past we can draw on, as this is a very new issue. However, there are recent applications that are similar to our team's application. One application called "Ddocdoc" produces a "mask map" that shows pharmacies and the numbers of masks in those stores. Another function it provides is a hospital reservation system. Unfortunately, it does not support mask reservations. Another application is "Gooddoc". This application is functionally the same as Ddocdoc. The only difference is that Gooddoc does not support online hospital reservation. Our application will have similar basic features. However, since we focus on coronavirus, we will have a simple map that shows the number of available masks in nearby pharmacies. In addition, our application will provide the street address as well as the official contact numbers. This is an important difference between those apps and ours- Because we want to help the elderly reserve masks, the most important bits of information for us to provide are the contact numbers.





Top, from left to right: Weekend Pharmacy, Caredoc, and Ddocdoc
Left: Gooddoc

There are also applications that provide good base models for Elderask. “Caredoc” is an application that helps find the best nursing home for elders. This application produces addresses of nursing homes and the contact information. Another such application is “Weekend Pharmacy.” This application is the most similar to our idea, because it produces the addresses and contact numbers of drug stores. However, it does not have map that shows the position of nearby drug stores, which we are planning to include in our app.

3. Target Users

Our project mainly focuses on elders who have a hard time purchasing masks, especially those who are over the age of 65. Their added vulnerability to diseases makes wearing masks a necessity for their survival. However, since everyone seeks to buy masks, most of the time masks get sold through too quickly for everyone to get some, which poses a serious health risk for elders who wait in line to possibly not even receive a mask. This has lead us to prioritize elders rather than younger adults.

4. Formative User Research

Method 1: Interview

Participants:

We mostly interviewed the grandparents of rxElder team members. The reason we chose them to be our interviewees is that we expected all of them to have recent experience visiting dispensaries to buy masks. As expected, they told us stories of how they waited in line for more than 20 minutes during the cold winter and had to give up buying masks. We reached out to some of them by video call to show them the different formats of each mask application and sent them example images via text for those who could not receive video calls. However, some of them were unfamiliar with how to understand the applications in the images we sent them. During the formative user research phase, we managed to conclude that our users are way more unfamiliar with smartphones and applications than we previously thought, which lead us to change some of the features we had planned.

Procedure:

Due to the coronavirus, we were not able to reach out to a senior citizens center in Incheon as previously planned. We instead talked to 4 different grandparents and asked them to share their thoughts and experiences. Throughout the interviews, we learned that the interviewees were mostly using the cellphones only for calling and texting family members. They had a hard time using other basic features, such as saving unknown phone numbers to the contact list. Due to these two reasons, we decided to make the primary focus of our app a widget that can be placed on the home screen to provide a one-touch calling function, while keeping the details (such as lists of pharmacies) in the app itself for more tech-savvy users.

Results:

Revelations made during the interviews:

- No matter how detailed the questions are, if the interviewees are not familiar enough with the topic to fully understand and respond then the questions become useless.

- Keeping the focus of the interview on the topic at hand is important, especially for cases like ours (and the tendency of the elderly to ramble).

- We identified that the primary concern of the users was their own safety while waiting in line- and not just fear of infection. We later found out that there have been cases of fights breaking out in the queues.

- If a potential user is unwilling to use the app, whether out of lack of familiarity or some other personal issue, they will not be able to receive any sort of benefit. This is concerning given our expectation of our interviewees representing significant portions of the elderly population.

Interesting parts from the interview:

- We were surprised that there was one interviewee who was almost completely unfamiliar with the operation of modern smartphones. Doubly so given she was (relatively) young at 68 years old.

- We received a very diverse set of answers, even though we were only able to interview four potential users.

- People talk way too much! Two of interviewees talked for approx. 25 ~ 30 minutes during the phone call. This is what lead us to realize the sheer importance of keeping firm control of the discussion during an interview.

Method 2: Browsing the web for keywords (COVID-19, Masks, elderly, etc.) & continuously reading articles and news reports related to the novel coronavirus and mask distribution:

Participants:

Due to us being limited to over-the-phone interviews and web browsing, we have decided to count the citizens quoted in news articles as participants.

Procedure:

We were lucky enough that mask distribution is already being considered a semi-serious issue, which has lead to more news coverage. From said coverage we were able to gather images, apps, and articles that are related to the masks and pharmacies. Our teammates promised to read two articles about COVID-19 and mask distribution regulations from the government, and held a discussion session every week in the Kakao group chat.

Results:

- The government is upholding strict regulations on selling and distributing masks. However, recent articles claim that even in the countryside masks are sold out almost as quickly as in more populated areas.

- There was too much poorly fact-checked news that sometimes even directly contradicted another article from a different writer working for the same company. We did our own cross-examination of articles selected from known major news outlets such as Arirang, Joongang and Choseon.

5. Conclusion

In conclusion, we have found that part of the potential userbase that we interviewed were unlikely to receive any potential benefits from using the application. However, the rest of the userbase is likely to receive a significant increase in the quality of their mask-buying experience.

We have also found that the largest reason for our userbase (the elderly) being unable to use our application is due to a lack of familiarity to technology. When we inquired further, we found many of our interviewees did not really understand the concept of applications or websites. Unfortunately, this is not a problem we can fully resolve other than to make operation of the app as simple as possible, which is why we shifted away from a detail-laden application to an easy-to-use button-style widget.

6. References

- Caredoc, 2020. Ver 2.0.4. *Google App Store*, <https://caredoc.kr/>
- Ddocdoc, B-bros, 2020. Ver 7.16.5. *Google App Store*, <https://www.ddocdoc.com/>
- Gooddoc, 2020. Ver 4.2.8. *Google App Store*, <https://www.goodoc.co.kr/>
- Weekend Pharmacy, 2019. Ver 1.6. *Google App Store*, <https://play.google.com/store/apps/details?id=com.irin.saturdaypharmacy>

7. Appendix

Notes and feedback:

- Instead of doing multiple-choice questions, ask open-ended questions.

This never ended up becoming very relevant because we had to cancel our surveys (due to the COVID-19 situation). During our interviews, however, we made sure our interviewees had enough time to respond as they wanted to our questions.

- Have you considered expanding the list of features offered by your app?

We did, but we thought that our already-planned features might be confusing for our users already (a fear which was proven to be correct during our interviews).

- How does this app differ from existing applications/websites that allows you to easily find dispensaries selling masks?

Our focus is on reservations- that is, a system that can be used by the elderly to call a dispensary in advance and reserve a mask ration. The mapping system is just a sort of bonus feature that helps with the main focus.

Raw data:

[Questions]

1. Have you bought any masks these days? If yes, from where and how did you buy them?
2. When using mobile phones, do you prefer typing phone numbers or using voice recognition when calling somebody?

3. Do you find that buying masks is easy? If not, why?

4. Please share your experience waiting in the line in front of a drugstore, if applicable.

5. Do you prefer a 3D map, a 2D map, or a list format when using a map application? (Note: accompanied by pictures for comparison)

Grandmother A – 76 years old (Interviewed by Jey Kang, Mar. 28th 6:31PM)

1. Yes, I purchased from the pharmacy near my home.
2. I prefer typing phone numbers and using shortcuts.
3. I couldn't get any masks because they were sold out.
4. I have experienced it once, and it was very tiring and hurt my legs because I had to wait for over 20 minutes.
5. I prefer lists.

Grandfather A – 87 years old (Interviewed by Youngho Kim, Mar. 26th 3:34PM)

1. I haven't, but my son ordered bunch of them through online shopping.
2. I prefer typing phone numbers.
3. I haven't purchased any masks.
4. I have no experience.
5. I do not understand what they are for.

Grandfather B – 80 years old (Interviewed by Dongha Song, Mar. 26th 3:24PM)

1. Yes, since the government help us to buy at particular days, it was fine for me to buy masks.
2. I prefer typing. However, if voice recognition can recognize my voice well, I would use it.
3. Yes, I can easily buy masks since there are not many people in my city.
4. Not me, but one of my friends waited in line to buy masks about a month ago, and she told me that she didn't succeed.
5. I prefer list format.

Grandmother B – 68 years old (Interviewed by Youngho Kim, Mar. 26th 4:14PM)

1. Yes, I bought some from the drugstore near my house.
2. I do not understand what voice recognition is. I just press the number buttons to call people.
3. Even though I live in the countryside, the masks are always sold out.
4. Yes, since it is too cold, I sometimes give up buying masks. (Note: she was speaking of her experience from earlier this year.)
5. I don't really care, I just don't like complicated things. (Note: she was unsure what the purpose of this questions was at first.)