

Formative Research Report

TEAM BES-Team: RES-Seat

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Introduction

Do you know how necessary lunchtime is to recharge during a busy day for office workers? Workers have to use the time effectively since the time is limited to about 30 minutes or an hour. That applies to all nearby office workers, and all restaurants get crowded by workers between 12~1 pm. So how much time would be a waste of time if you waited in line in front of the restaurant for that short lunchtime without knowing how long you had to wait? Also, it is a loss to office workers to waste time wandering around all restaurants to find restaurants with leftover seats. This daily problem is very stressful for office workers. Therefore, we are trying to help them use that lunchtime as efficiently as possible.

The biggest problem with office workers' lunchtime is that they do not know how many seats are empty in all restaurants, so they spend a lot of time looking for restaurants. We thought it would be convenient to know how many seats were left. We will show all the rest of the seats in all the restaurants on the map in real-time. In addition, it is easier to see at a glance by showing people the degree of congestion in red if there are no seats and green if there are many seats. Even if there is a waiting room, we will show you the waiting time and how many people are going to the restaurants. Once you know the remaining seats and waiting times in real-time, office workers can walk around all restaurants and save their energy and time. They can go to the restaurant where there are seats left right away. Another way to save time is to book a menu in advance before entering a restaurant. Unlike the system of booking a restaurant seat, when you book a menu in advance on the way to the restaurant and enter the restaurant, the menu is cooked immediately. Moreover, we will even add a restaurant recommendation filtering function. Recommendations will consider the desired food type, the number of people, my surrounding range, and waiting time. Also, customized filtering for users will be proposed by setting whether the user will view them in order of distance, the number of rates, recommendations, or waiting time. With these four functions, real-time remaining seat checking, waiting time indication, menu reservation system, and restaurant recommendation filtering, we plan to create the most efficient web for office workers who have never seen it before.

Background

<Problem>

According to the Korean Labor Standards Act, Article 50 says that "Work hours shall not exceed eight hours a day, excluding hours of recess" (Korea Legislation Research Institute). In South Korea, all laborers are authorized to take thirty minutes long recess every four working hours. It means that there is an hour-long legal recess for each day, and we call this 'lunch time'. A worker, an interviewee of Hangang Magazine, from a marketing agency shares one's story that the agency checks employees' in/out

time, including lunch recess. The agency regards one-minute late back from lunch recess as a half-day absence, with the third time as a deduction (Complete Guide to Work Hours and Korean Labor Law, 2020).

The article from Financial News, which was written in 2017, had surveyed Korean office workers' length of lunch break. 70.9 percent of them answered that their lunch time is exactly an hour, and 22.2 percent of them said their lunch time is less than an hour (Lee, 2017). Although this survey was conducted five years ago, it does not show a big difference from now. This article also introduces statistics of actual eating time of the office workers. 42.6 percent of them finish eating within 10-20 minutes. It was followed by 39.7 percent of them finishing eating in 20-30 minutes, and 12 percent of them answered it in 10 minutes. Over 90 percent of Korean office workers finish their lunch within thirty minutes (Lee, 2017). Those articles indicate the reality of Korean office workers' pressed lunch time.

<Existing solution>

One existing example is an application which is called "Tabling" (Malang, 2018.) This application takes users' location information and recommends restaurants nearby, which is a related function we plan to do. It also displays how many people are waiting. Similarly, "Go Eat" (Go Eat Team, 2022) explores users' taste in food at the first and recommends restaurants that close and fit an individual's taste. However, they do not have enough information about restaurants and do not have a tutorial on how to use the application. We are planning to make our website informing which restaurants are available at the time in detail to prevent users' useless clicks and add tutorials at the beginning of the page.

Generally, the home screen of our website will be similar to the "Hogang NoNo" (Hogang NoNo, 2016) <Figure 3>, a real estate application. This application displays available apartments for sale on a map based on the user's chosen location. Also, it shows the number of users who are watching the same apartment at the same time by tooltips. We are going to use this feature for our website. We will show the number of users who are watching the specific restaurant at the same time. However, this application is for real estate, so the filtering feature of our website will be different. For the filtering, we will refer to "Bamin" (WoowaBrothers, 2010) <Figure 2>'s filtering feature. Bamin is a food delivery service, so the categories are classified by menus. After choosing a specific menu, it is then able to filter by the most ordered, highest reviews, closest restaurants, lowest prices, lowest delivery prices, or etc. For our website, the closest restaurants, most available seats, shortest waiting time, or highest reviews will be considered for the filtering feature.

"Everland"(Everland Resort, 2010) <Figure 1> is one of the most famous Korean amusement parks application. If a user with this application, he or she can see the waiting times of each ride around him or her at once. One good thing about this application is it shows the waiting time with color categorizations. For example, under 30 minutes waiting is colored by green, over 60 minutes waiting is

colored by purple, and closed attractions are shown in gray. Our website will classify seat availability by colors too. If over 50% of the tables are available, then the restaurant will be shown green. Accordingly, 30% of availability will be shown in orange, only one or two tables left will be shown in red, and the restaurants with no seats available will be shown in gray. It makes easier to see the degree of congestion for restaurants.



<Figure 1 Delivery App <BaeMin>>



<Figure2 Everland App>



<Figure3 Real Estate App <HogangNoNo>>

Target Users

Our main target users are office workers in age 20s and 40s. To be more specific, people who experience looking for a restaurant with a seat during limited lunchtime everyday. Those who want to use their lunchtime more efficiently will be the main targets for this service.

Formative User Research: Interview

We decided to interview eight office workers who have worked recently. The reason for our decision is that they are not only target users we have set up, but also they are who experience inconvenience at lunch time, so we can hear the inconveniences they experienced that we did not think of.

We asked people around us and their acquaintances for interviews. We got permission after a brief explanation on the app we are going to make. Interviews were conducted by using chat or by phone. I asked about the inconveniences and problems they experienced during lunch time. We recorded and screenshot the whole process of the interview. Results went as follows.

For the result, most of our interviewees answered that they feel pressed about the length of lunch hour which is only an hour. In order to save their lunch hour, the interviewees said they go to eat on average within 10minute walking distances. Since they go to restaurants around their workplaces, they already know what they are going to eat. For this reason, it takes under 5 minutes to choose their lunch menu. Things that they consider for choosing restaurants are the taste of food, closer distance, and restaurants without line. They said it would be better if the application/website contains several features. There are top 3 features they said. First, they want to know whether the menu they choose is available at the time and the available number of orders. Second, there are many people who are allergic to certain food materials. Therefore, food ingredients information will be useful. Lastly, recommendations of foods based on their taste and popular menu feature is one of the most preferred features they think. When they have trouble choosing a menu, recommendations feature help them and shorten time of choosing foods.

Formative User Research: Survey

As mentioned earlier, the main target user for this web is office workers in their 20s and 40s. Therefore, we met and asked people around us who are or have experience of the office workers, interns, and SUNY RC Team. In addition, we provided Google form links to social media (Instagram Story) and office workers' KakaoTalk rooms, encapsulating them to conduct surveys. We posted the Google form links on Instagram. In the case of those in their 30s, while interviewing Yool Bi's sister and brother, they said they would post our surveys in a chat room where office workers in their 30s gathered.

The results came out with Excel and graphs provided by Google Form. There are two attached Google forms. The first Google form is a survey, which people actually took. With feedback, we changed

question options, and results were messed up such as duplicated graphs. Therefore, we made the same Google form and entered the results to organize them clearly. In other words, the questionnaire that we surveyed was the first Google form, and the questionnaire that summarized the results was the second Google form.

Those who had an hour of lunchtime were the highest at 65.7%. Among those who participated in the survey, 68 percent went out for lunch more than three times a week, and 56 percent ate lunch more than five times. The majority (93.8 percent) move on foot, and 63.6% of the respondents surveyed said they had been delayed due to waiting. Some of them moved in search of restaurants with no wait because they felt they would be late to return to work due to the prolonged wait. The main criteria for choosing a restaurant were distance (60.6%), menu (51.5%), and no waiting (36.4%). (Duplicate selectable) There was also a new opinion that people wanted real-time reservations and expected waiting times.

What we learned from this survey is that there is a lot of demand for real-time reservations. There were opinions on real-time reservations in 6 out of 14 short-answer questions about whether there was a service you wanted to add to this web. In the question, "what do you consider when choosing a restaurant for lunch?" 51.5% of people chose the menu they wanted to eat on that date. From this result, we felt that decisions and reservations on that day are needed. Thus, we are planning to add a real-time reservation system to our web.

Conclusion

Above research, we noticed that many office workers have suffered from insufficient lunch time. Especially for places where companies are centralized, most restaurants nearby are usually crowded, so they want to find solutions that help to use lunch time more efficiently than before. Through the surveys and interviews, we also realized that many people desired a real-time reservation system. Furthermore, we added an indication of how many people are going to the restaurant after we received feedback from the other team during the class.

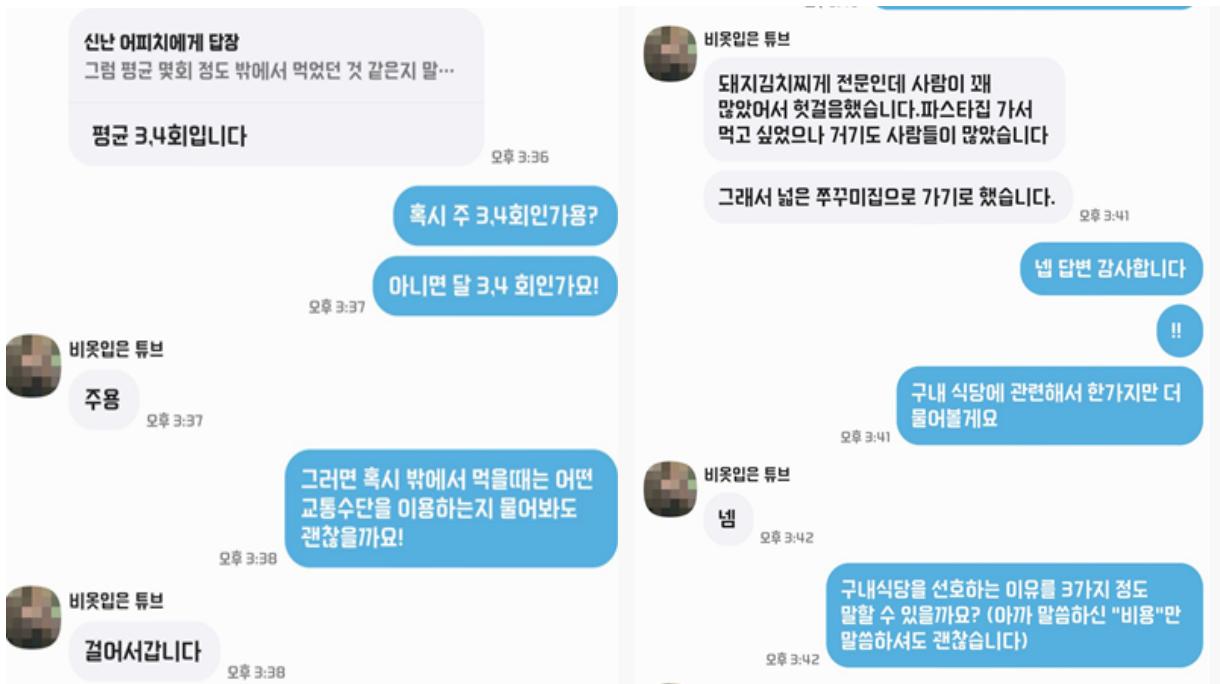
Overall, our web RES-Seat will provide six major functions: real-time remaining seat checking, waiting time indication, showing how many people are heading to the restaurant, menu reservation system, restaurant recommendation filtering, and real-time reservation. These functions will provide more efficient time management to office workers during lunchtime.

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Appendix

- I. [<The initial in-class critique>](#)
- II. [<Interview Questions for Office Workers>](#)
- III. Interviews
 - A. [<Interview Audio Recording1- a 20s office worker>](#)
 - B. [<Kakaotalk Interview Chat2- 20s office workers>](#)
 - C. <Kakaotalk Interview Chat ScreenShots3- a 20s office worker>



- D. <Interview Audio Recording4 - Yool Bi's sister>
 1. <https://drive.google.com/file/d/1w478S3fJl8xCFgFpcemwF29RyfV9hm8x/view?usp=sharing>
- E. <Interview Audio Recording5 - Yool Bi's brother>
 1. https://drive.google.com/file/d/1wGCYHl_9V1qV-tNGoSU7Bk1Xqmk9z85G/view?usp=sharing
- F. <Interview Audio Recoding6- Seoyoung's uncle>
 1. https://drive.google.com/file/d/14PK0pUJgcbRHEMrNBhB_tXrWdAN8bClC/view?usp=sharing
- G. <Interview Audio Recording7 - Seoyoung's aunt>
 1. https://drive.google.com/file/d/14PK0pUJgcbRHEMrNBhB_tXrWdAN8bClC/view?usp=sharing

IV. Google Survey

A. <Google Survey 1 - unorganized>

1. https://docs.google.com/forms/d/1oPyZMBLD9oasB3fVm8RzPvGTLJKJctVya_1ZDEfNURU/edit?usp=sharing

B. <Google Survey 2 - organized>

1. https://docs.google.com/forms/d/1rMBGNnmJKMbl9cje-f8dEIySjifkyM6Vjwba_4vKy1M8/edit?usp=sharing