

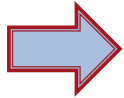
# Restroom navigation in real time

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# Background

Not only Japanese, a huge amount of foreigner visitors come to Kobe every year.

When people in an unfamiliar environment, it usually take more time to arrive at the place we want to go , especially tourists



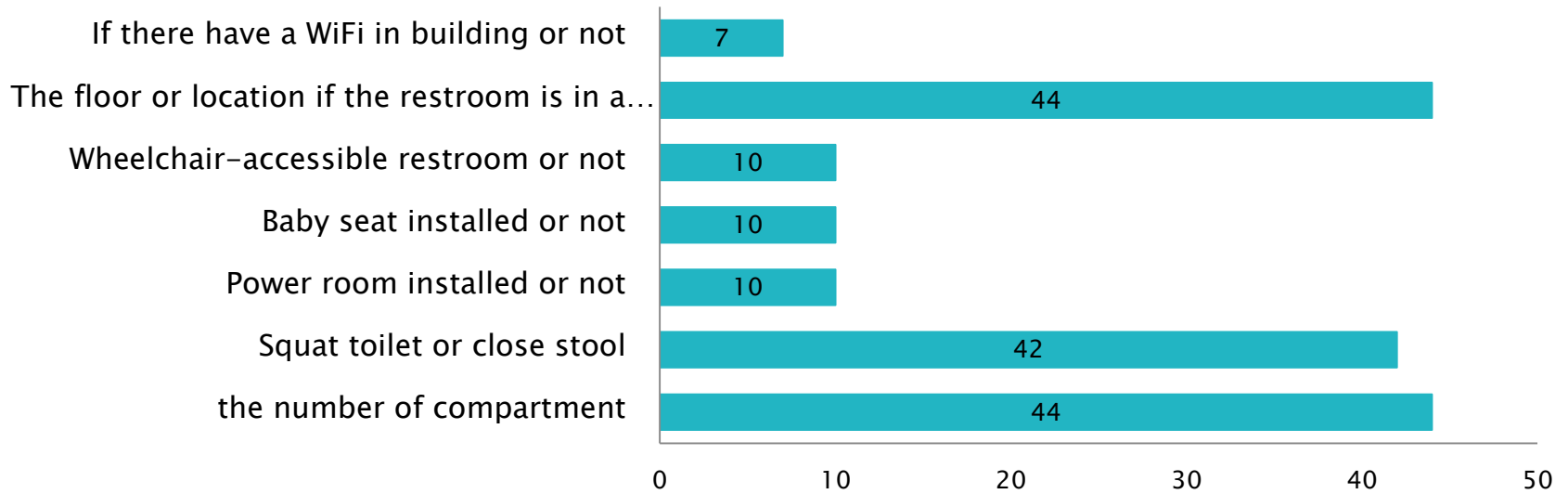
We should create a convenience and comfortable street

- This proposal will focus on one of the basic requirement —restroom with it's information

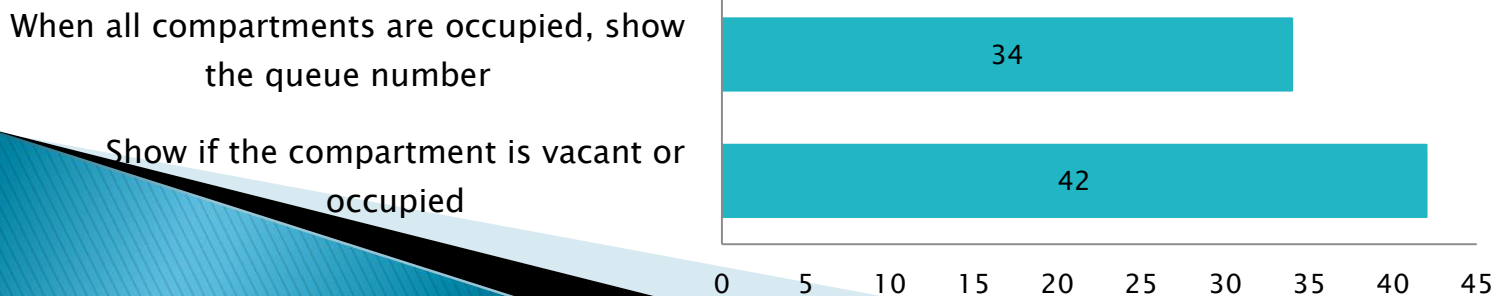
# Previous research

➤ A questionnaire shows a result where over 80% restroom users admit that it is important to know the details of restroom such as compartment number, location and if it is vacant or occupied. (test population: 50)

➤ **If an APP can show details of restroom spot son map ,what kinds of information will you want?**



➤ **If this APP can show information in a real time, what kinds of information will you want?**



# Restroom navigation in real time

This proposal aims at building a navigation system which can provide information of restroom on map in a real time

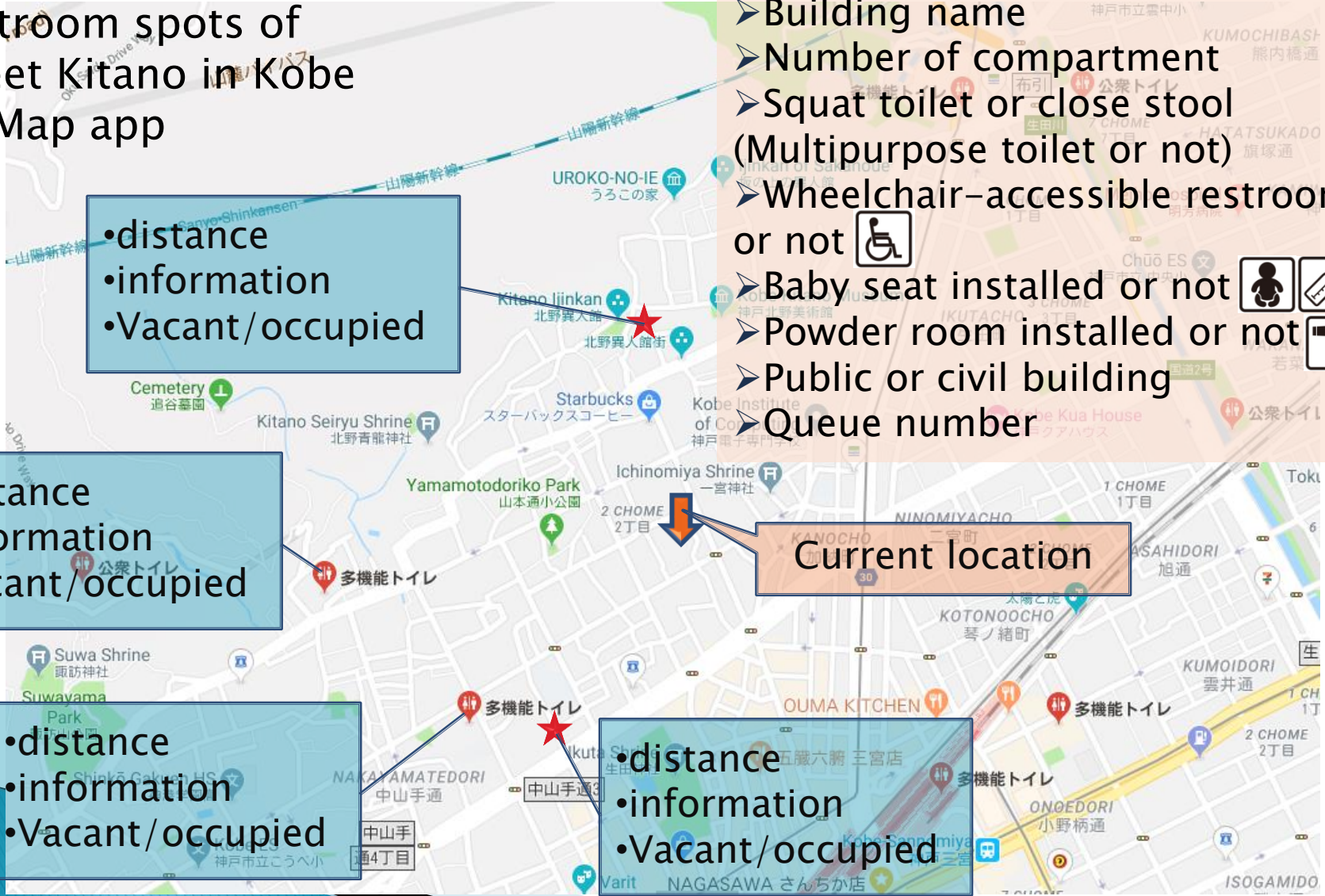
When looking around a city, this navigation can show the information such as:

- Restrooms nearby the current location
- Information of the restroom
- Occupied or not  
n/N (vacant/occupied)

# Conceptual drawing

Example:

Restroom spots of Street Kitano in Kobe on Map app








- distance
- information
- Vacant/occupied

- distance
- information
- Vacant/occupied

- distance
- information
- Vacant/occupied

- distance
- information
- Vacant/occupied

information:

- Building name
- Number of compartment
- Squat toilet or close stool (Multipurpose toilet or not)
- Wheelchair-accessible restroom or not 
- Baby seat installed or not  
- Powder room installed or not  
- Public or civil building
- Queue number

Current location

# In addition

- About more information:

By cooperating with shopping mall or convenience shop, we can also show the information of restroom in those buildings on map.

# Data proposed to use

## Technique proposal

- Location of restrooms nearby
- Information of restrooms

- Information of tourist facilities in Kobe
- Kobe· convenience Restroom for everyone(location of restroom)

- Vacant or occupied
- Queue number

- Visualization of congestion by IoT technology

# Visualization of congestion by IoT technology

- Sensor installed on key for door of every compartment  
pressure sensor installed in toilet sheet

observe whether the compartment is occupied or not  
And send information to sever.



- Infrared ray sensor installed at entrance of restroom

Count the number of people  
visited restroom and  
speculate the congestion



Infrared ray sensor



Update the information on Map app