1. Smart Water Monitoring System

- Assumption

[Figure 1]

Idea & Limitation

- Using flow sensor and temperature sensor to calculate water usage
  - couldn't find flow sensor in the demo kit
- Install sensors into the shower head
  - sensors are not waterproof
- Suggest more saving by using pop-up window
  - cannot implement the function

Assumption *Look figure 1*

- The amount of water you spent during the shower is filled in the container
- The container is huge enough to manage user's water usage

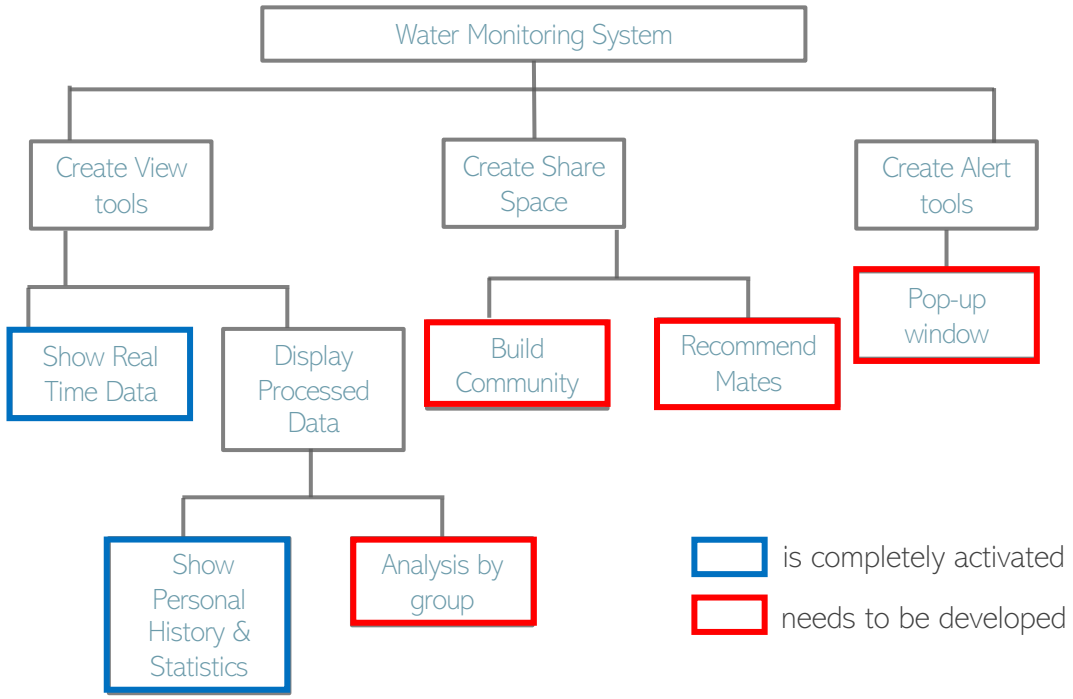
Alteration

- Using ultrasonic sensor & temperature sensor
  - Under the assumptions, the ultrasonic sensor is for measuring water usage
- Sensors are located at the top of the water container
  - That means, the value obtained from sensors are a relative value, not an absolute water temperature or flow rate
- Not collecting user's personal information
  - So that, statistics are more simplified than we expected

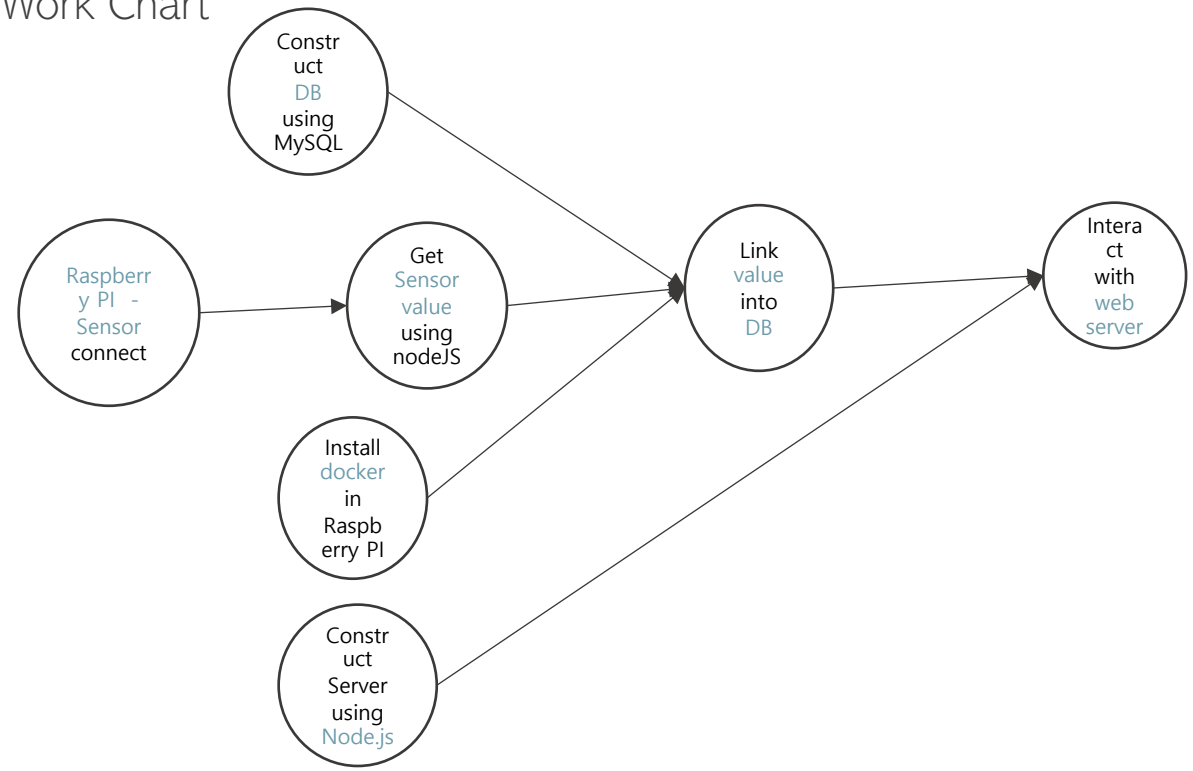
2. Smart Water Monitoring System

- Possible Extension

- WBS (WorkBreakDown Structure)



- Work Chart

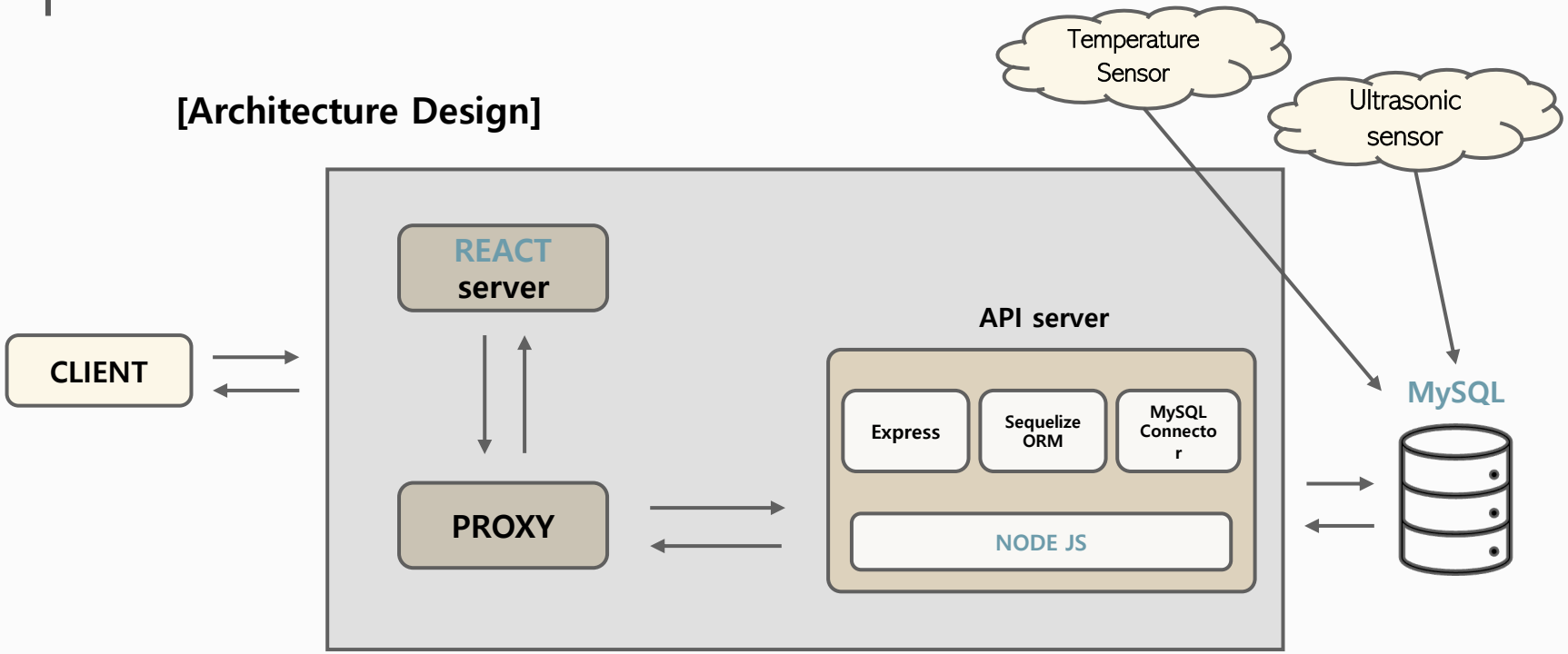


Smart Water Monitoring System(SWMS) suggests the importance of personal responsibility for saving water. Contribute to this value, system provides mirroring function, community, and analysis. The fundamental element of these functions has been implemented, and based on this, advanced SWMS can cover all work in WBS soon.

3. Smart Water Monitoring System

Architecture Design and Demonstration Diagram

[Architecture Design]



[When building on DOCKER]

#SHOWER's application	
MySQL Container	NodeJS Container
Docker: Container Engine	
Raspberry PI	
Infrastructure	

[Denonstration Diagram]

[React server execution]
Execute location shower/frontend
Execute command ***npm start***

→ **[React server execution]**
React-dom build

[Express server execution]
Execute location shower/backend
Execute command ***npm start***

→ **[Express server execution]**
server build

sequelize

[MySQL server execution]
database

Reference : 코로나보드로 배우는 실전 웹서비스 개발, 권영재, 주은진, 골든래빗