

Assignment 2

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1. Bottom up ideation

- **Pet spy camera**
- Motion-controlled game
- Lock or unlock the devices: identification/face recognition
- **PC/ mobile device notification system**: monitor the identity of device user, if not/not only the owner of the devices, disable the notification prompt(iMessage etc.)
- Face expression tracking while texting
- Automatic charging parking lot
- **Gesture-controlled music player**: pause the music, turn up/down the volume
- Augmented reality sticker
- Photo/video effects and filtering
- Track the object with specific characteristic or features

2. Top down ideation

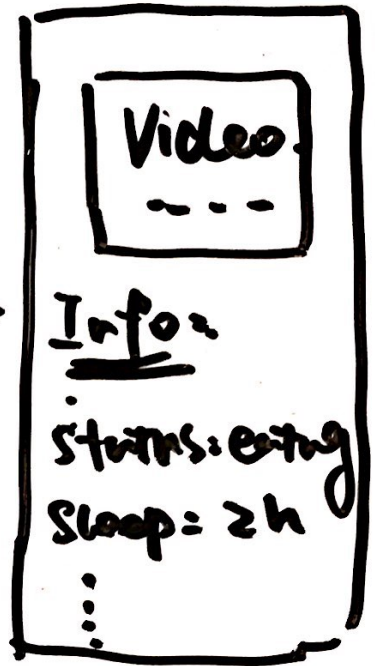
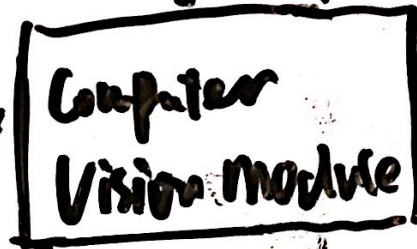
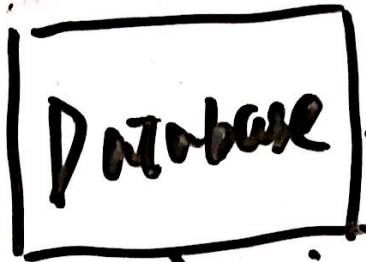
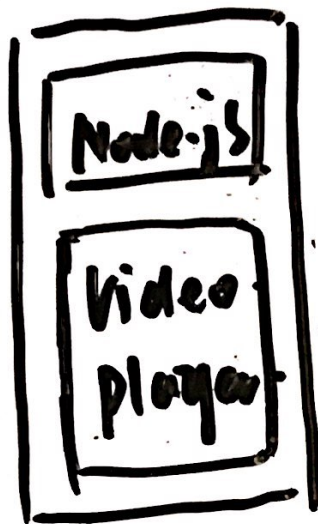
- Refrigerator monitor: keep track of the food inside the refrigerator(track when user take out or put in the food, creating the shopping list, notification), give simple visualization.
- **Smart lock**: homeowner and visitor identification(computer vision), automatically lock and unlock
- Home alarm system/ surveillance system: once identify the spurious invader, notification or alarm will be sent
- **Smart dishwashing machine**: detect how many dishes inside and automatically start the cleaning mode
- Smart glass screen/screen: the window can display different scenes(raining, snowing) and play music or natural sound accordingly.
- Smart sofa: adjust the position through lifting the seat up and down based on the height of user; keep track of how long user seat on the sofa, vibrate once per hour to remind users to stand up
- Navigation on shoes: red light flash means turn left, green light for the right turn, vibration for notification.
- Calorie intake monitor: take picture of the dishes or ingredients, give the approximate calorie.
- Smart lighting system: adjust the brightness level and color modes through automatic user activities recognition(including reading(books), browsing(computer) etc).
- Mail manager: scan the mail and automatically classify the mail depends on predefined classification.

3. Narrowing down

Pet spy camera

Display -
Browser / APP

Server



Arminot Pi



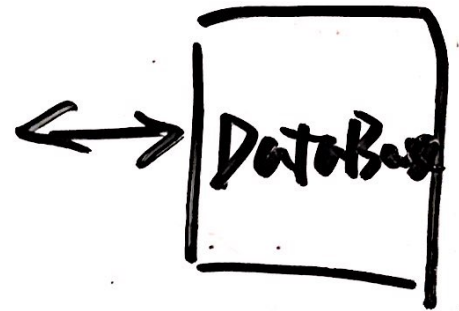
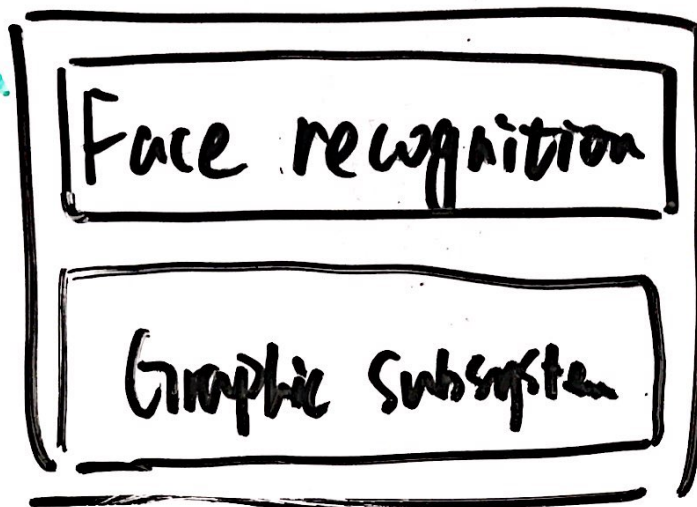
master.

Camera

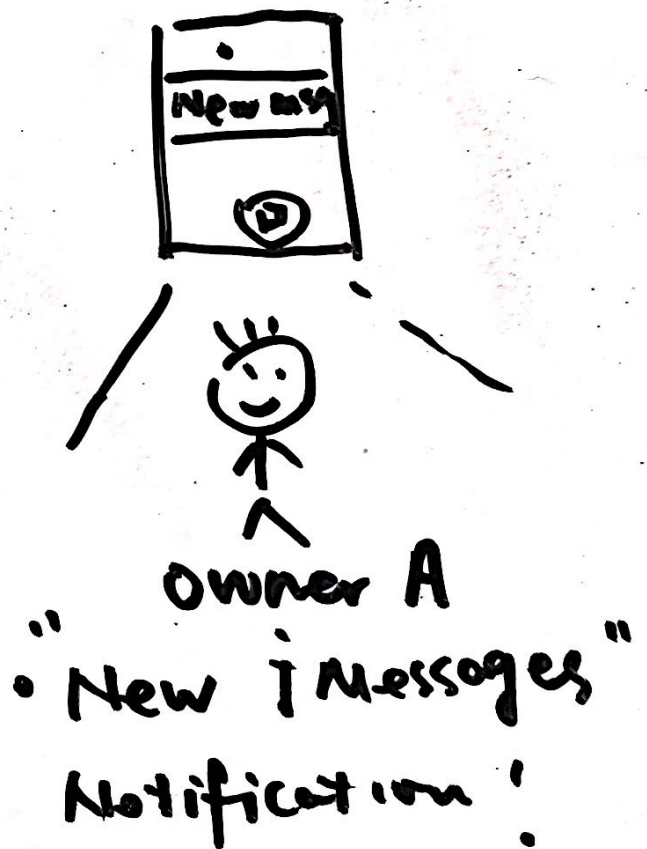
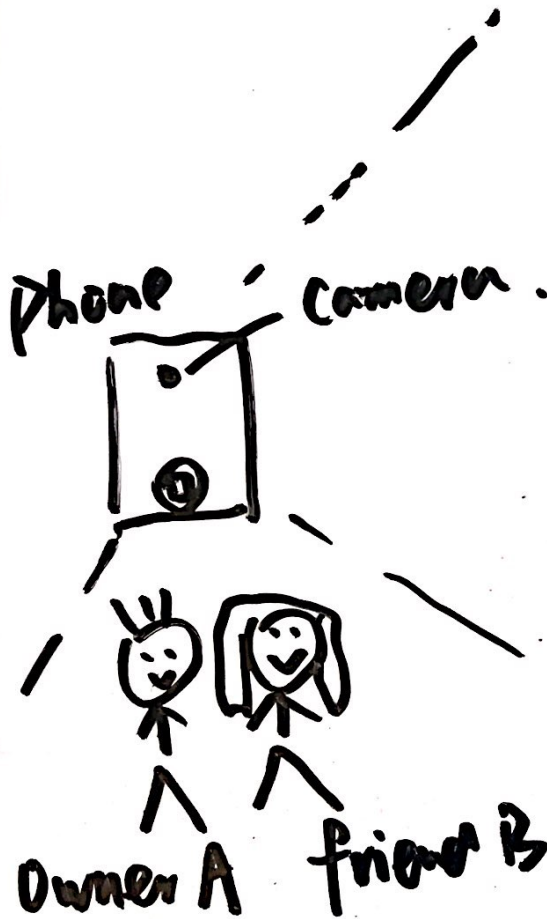


PC/mobile
device
notification
system

Server



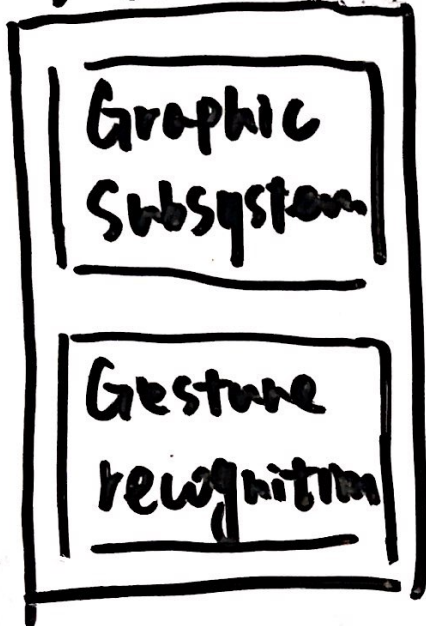
Arduino + Pi



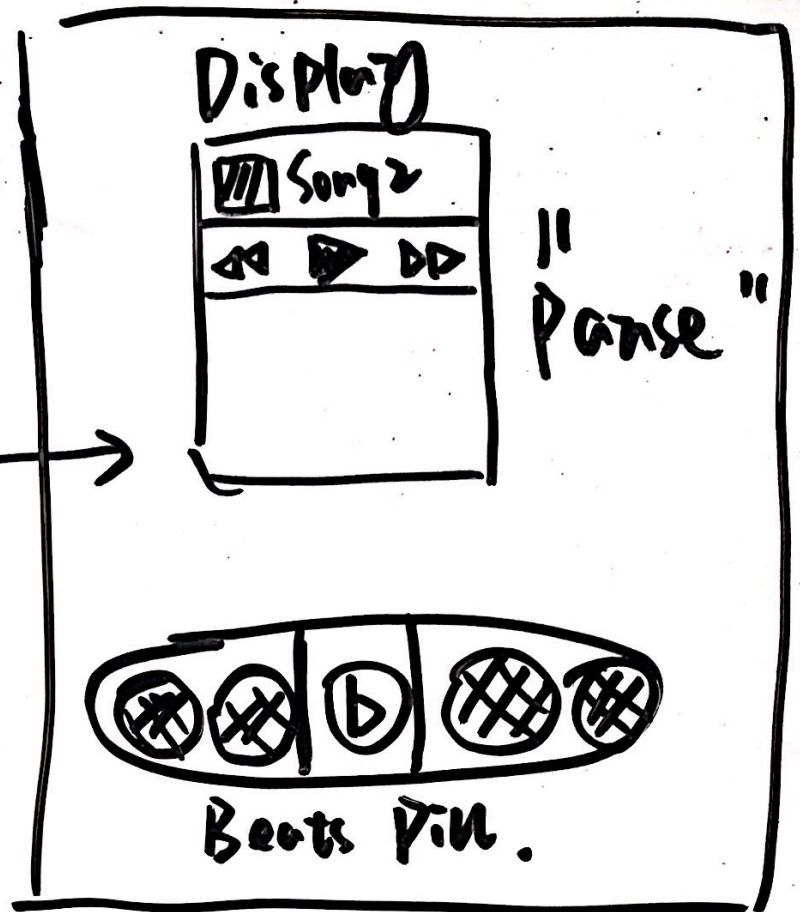
- No notification prompt
- Unless permission by A

Gesture-controlled music player.

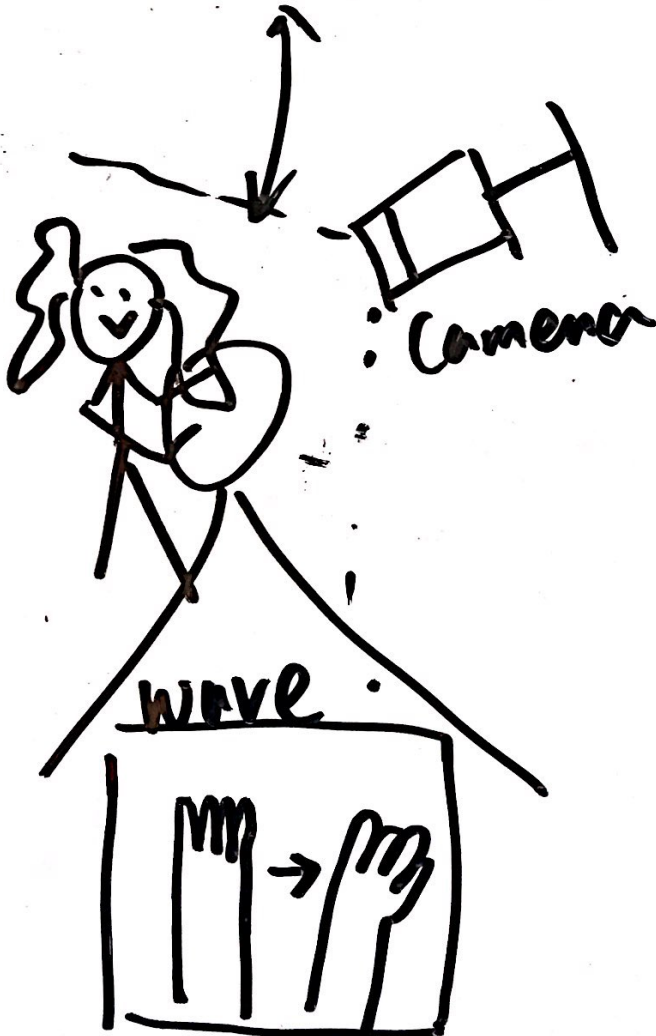
Server & Back-end



Arduino & Pi



Device .

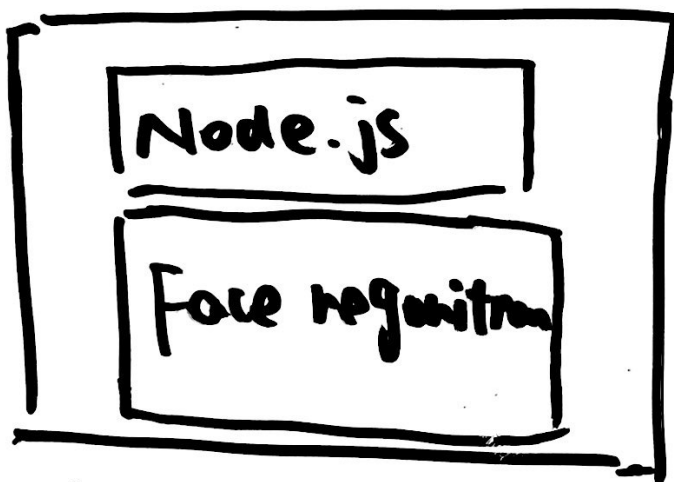
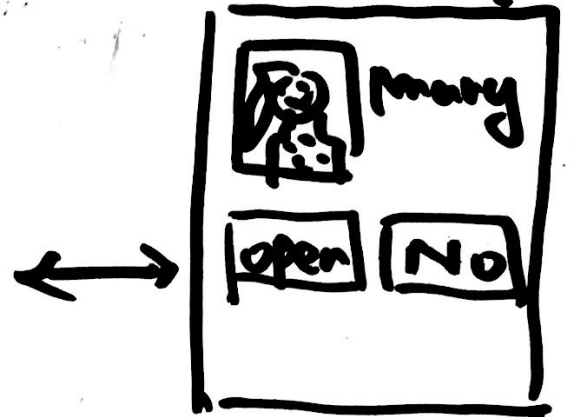
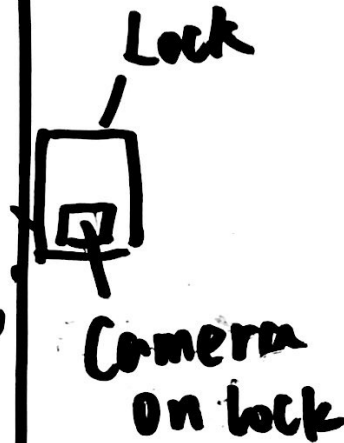


Smart
Lock

Door

- Automatically open
- Check on App.

Device



Arduino & Pi

Smart dish-washing machine

