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Summary

This week, the Kubernetes team built distributed load testing tool using Locust. The backend team developed APIs and solved some issues about null. The frontend team added a range function in charts. The network team built the system to get real-time data from open weather stations.

What IIEEE completed this week:

- Kubernetes team
  - Building distributed load testing framework using Locust
  - Solving some issues about firewall rules
- Back-end team
  - Developing new function
    - The filter of Logging was added.
  - Solving the error
    - Database was filled as null when the client sent POST request.
    - The problem was solved by using another annotation.
- Front-end team
  - Adding the range function
    - If the user sets the range each of sensor data, it is shown in the graph by range background.
  - Applying the slider tooltip
    - The rc-tooltip library was used for the slider tooltip to present the range value.
  - Fixing the CSS of dropdown in the search component
  - Setting the react-redux
    - It is applied to ease data transfer between several components using react-redux, redux, and redux-actions.
  - Trying to change map API
    - It has been to find a map API that supports HTTP as it is hard to set HTTPS in the GKE load balancer. Due to the Google map API only supporting HTTPS, it is changed to another map API.
- Network team
  - Getting real-time API from Open weather to ESP32.
    - A problem with an invalid API was found because of the API subscription.
    - Similar free API offer platforms are being searched.
  - Testing LoRa device (ESP LoRa 32) connection with outdoor LoRa gateway [1]
    - Outdoor LoRa Gateway registration is made with prof. Smith's help, but testing fails due to network disconnection.
    - Therefore, using the Senet gateway was decided as an alternative.

Things to do by next week

- Kubernetes team
    - Setting test beds using Locust
    - Preparing load testing environment
- Back-end team
    - Testing all API connections with the network and front-end web server
- Front-end team
    - Adopting graph API connection
    - Finishing changing map API
        - Adding marker to the map
    - Fixing the setting modal
        - In the slider graph, it is not showing now.
    - Connecting zip code API for location
- Network team
    - Making experimental environment
        - Modifying the code to allow data to be sent to LoRa networks
        - Finding LoRa device EUI and register it in the Senet dashboard
        - Network testing to sensors - ESP32 - Senet gateway - Chirp Stack server

Problems or challenges:

- LoRa device (ESP 32) - LoRa gateway - Chirp stack server testing was delayed due to the absence of a team member.

References

[1] “Heltec LoRa 32 LoRaWAN Node on The Things Network-Robot Zero One.” Robot Zero One. https://robotzero.one/heltec-lora32-lorawan-node/ (accessed July. 12, 2022).

[2] “Distributed load testing using Google Kubernetes Engine.” Google Cloud. https://cloud.google.com/architecture/distributed-load-testing-using-gke/ (accessed July. 13, 2022).