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From: IIEEE


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**Summary**


This week, all of the team members had time to study each part. Preparing for the experiment and writing methodology had been started this week. The Kubernetes team studied and practiced Docker and Kubernetes. The network team learned how to use ESP32 LoRa and connect with LoRa gateway. The front-end team designed the web service detail pages.


**What IIEEE completed this week:**

- Kubernetes Team
  - Grasping methods for maintaining and managing data for Docker container applications, volume classes, and practice
  - Practicing communication methods between containers and the World Wide Web, containers and local servers, and containers
  - Building multi-container applications and learning Docker compose to enhance developer experience
  - Deploying on a single docker container AWS EC2 and taking classes on deploying multiple docker containers in AWS ECS
  - Learning Kubernetes basic object concept and practice
    - Pod, Service, Volume, ConfigMap, Secret, Namespace, ResourceQuota, LimitRange
  - Learning Kubernetes controller
    - Replication Controller, ReplicaSet - Template, Replicas, Selector
    - Deployment - Recreate, RollingUpdate
    - DaemonSet, Job, CronJob
  - Utilizing UTM [1] to configure a cluster of one master node and two worker nodes
  - Understanding services through Google Cloud Platform (GCP) practice

- Network Team
  - Learning Arduino for using ESP32
    - Understanding the Arduino board structure
    - Finding out how to use Arduino IDE
    - Practicing how to work breadboard
  - Testing soil moisture sensor
    - Putting the water in the soil and getting the moisture sensor data

- Front-end Team
  - Finding the reference for service design
  - Creating a wireframe for the web service detail pages.

**Things to do by next week**

- Kubernetes Team
    - Meeting on the Kubernetes structure
    - Setting up an experimental environment while continuing to learn Kubernetes

- Network Team
    - Testing ESP32 LoRa
    - Connecting ESP32 LoRa gateway
    - Getting sensor data using ESP32 LoRa

- Front-end Team
    - Responsive web publishing

**Problems or challenges:**

- Struggling with the subscribing plan
    - In the process of deploying multi-container applications to the cloud, it is not available as an AWS free tier, so it is not possible to practice specific tasks and replaces them with lectures

**References**

[1] “UTM | Virtual machines for Mac.” UTM. https://mac.getutm.app/ (accessed 2022).