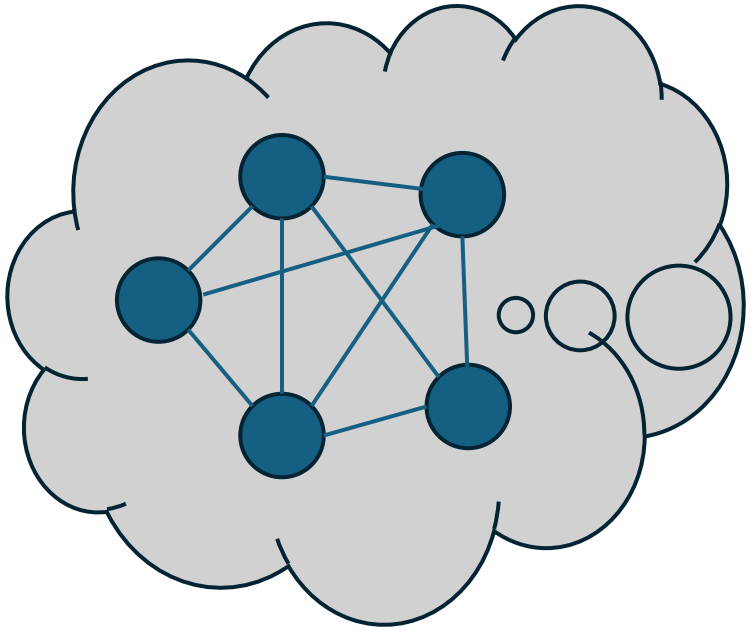
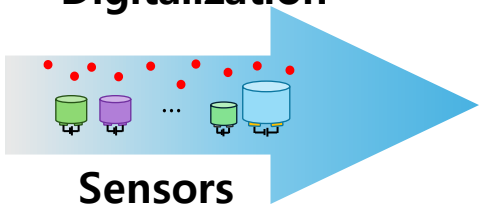
Internet of Things (IOT)

Real World
(Analog)

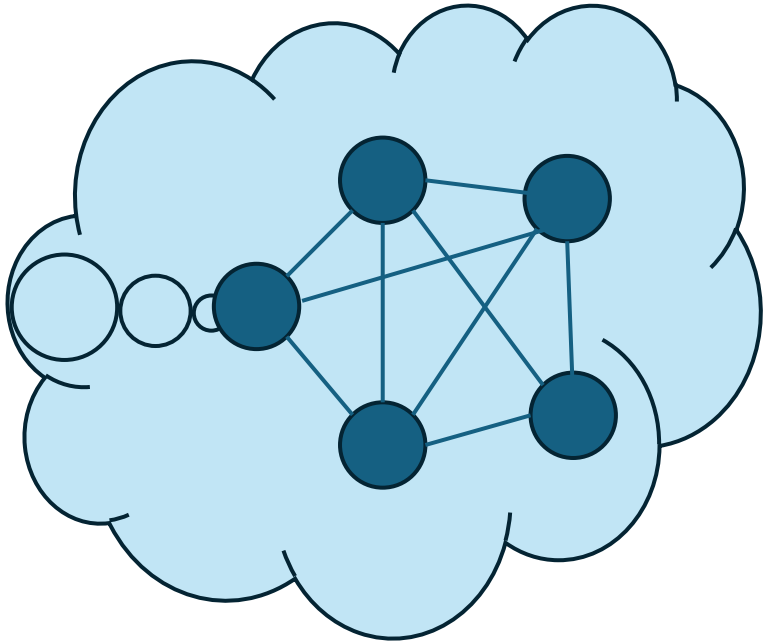


Digitalization



Sensors

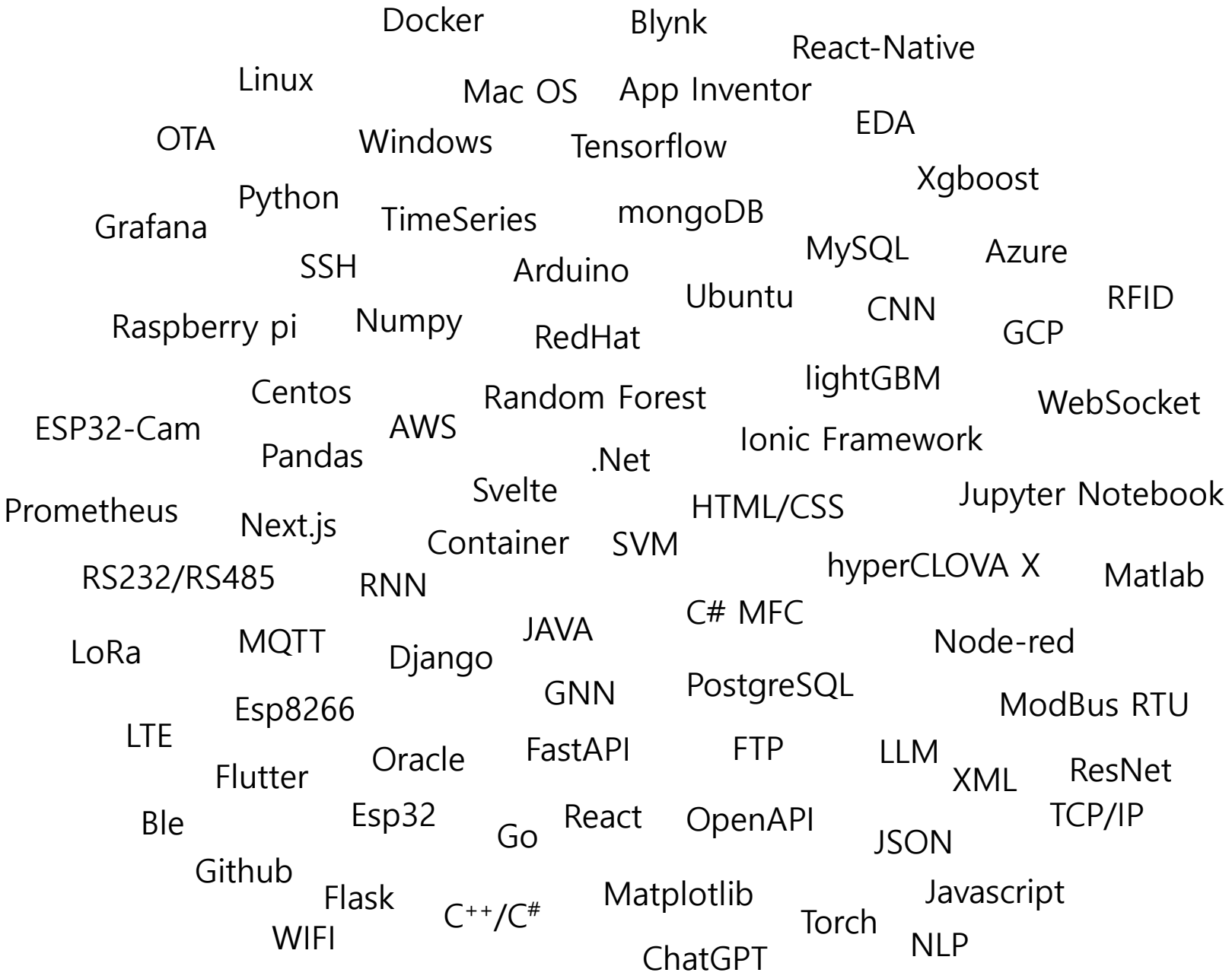
Internet World
(Digital)



- Things : 사람, 동물, 식물, 곤충
- Communication : 언어, 페르몬, 몸짓
- Flatform : 조직, 가정, 직장, 정부, 커뮤니티

- Things : 아두이노, 라즈베리파이, PC, 모바일, 클라우드
- Communication : 통신 프로토콜, 프로그램 언어
- Flatform : Web, App

강의 중요 용어


Docker
Blynk
React-Native
Linux
Mac OS
App Inventor
EDA
OTA
Windows
Tensorflow
Xgboost
Python
mongoDB
Grafana
TimeSeries
MySQL
Azure
SSH
Arduino
Ubuntu
RFID
CNN
Raspberry pi
Numpy
RedHat
GCP
lightGBM
Centos
Random Forest
WebSocket
ESP32-Cam
AWS
Ionic Framework
Pandas
.Net
Svelte
Jupyter Notebook
Prometheus
HTML/CSS
Next.js
Container
SVM
hyperCLOVA X
RS232/RS485
Matlab
RNN
C# MFC
JAVA
LoRa
MQTT
Node-red
Django
PostgreSQL
GNN
Esp8266
ModBus RTU
LTE
FastAPI
FTP
LLM
Oracle
XML
ResNet
Flutter
Esp32
TCP/IP
Ble
React
OpenAPI
Go
JSON
Github
Flask
Matplotlib
Javascript
C++/C#
Torch
WIFI
NLP
ChatGPT

강의 중요 용어 분류

MCU

- Raspberry Pi
- Arduino
- Esp8266
- Esp32
- Esp32-CAM

OS

- Linux
  - RedHat
  - Ubuntu
  - Centos
- Docker
  - Container
- Windows
  - MFC (C#)
  - .Net
- Mac OS

Communication Protocol

- MQTT
- WIFI
- BLE
- LoRa
- RFID
- LTE
- RS232/RS485
- Modbus
- OTA
- TCP/IP
- SSH
- WebSocket
- FTP
- UDP

Data Format

- TimeSeries
- JSON
- XML

Program Language

- Python
- JAVA
- Javascript
- C#/C++
- Matlab
- GO
- Lust
- SQL

Cloud Computing

- AWS
- Azure
- GCP
- hyperCLOVA X

Database Framework

- mongoDB
- PostgreSQL
- MySQL
- Oracle

Web Framework

- Django
- FastAPI
- Flask
- React
- Next.js
- Svelte
- Node-Red
- HTML/CSS

Web Realtime Monitoring

- Grafana
- Prometheus

App Framework

- Blynk
- App Inventor
- React-Native
- Ionic

AI/Machine Learning

- SVM
- Random Forest
- lightGBM
- Xgboost
- CNN
- RNN
- GNN
- ResNet
- TensorFlow
- Torch
- NLP
- LLM
- ChatGPT
- OpenAPI

EDA

- Pandas
- Numpy
- Matplotlib

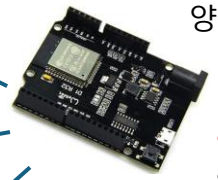
강의 Flow & Plan

MQ 센서

Lecture 3

ESP32 board

Lecture 4



양방향 통신(IOT)

- MQTT
- WIFI
- LoRa
- 블루투스 Lecture 8
- RS485/RS232
- OTA Lecture 9

라즈베리파이

Lecture 2

노드레드

데이터저장

데이터베이스

mogoDB/MySQL

데이터 분석

Lecture 5-6

- Python/Jupyter notebook
- 머신러닝/뉴럴네트워크
- 패턴인식

제어/모니터링

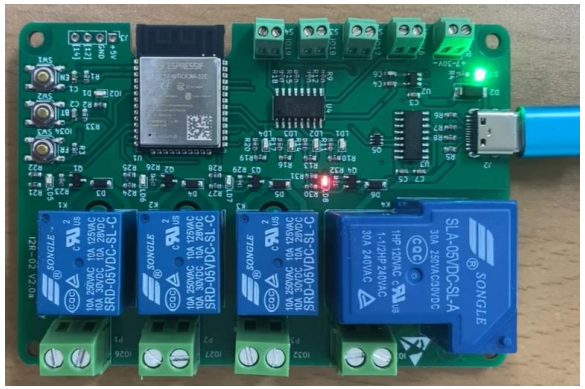
노드레드/Grafana

Lecture 7

Esp32-Cam

Lecture 14

IoT 보드 Lecture 13



1) 웹기반

- 리눅스
- 플랫폼 : React, Next.js, Flask, Django, HTML/CSS, 노드레드

2) 모바일 기반 Lecture 10

- 안드로이드, iOS
- 플랫폼 : Flutter, React-Native, App Inventor, Blynk, Ionic

3) PC 기반 Lecture 11

- 윈도우
- 플랫폼 : C#, 닷넷

4) IOT 클라우드 (AWS) Lecture 12

- 보안적용

Lecture 15 - 16

팀프로젝터 Team1, Team2

조편성

	그룹 1	그룹 2
Captain	이솔파	하주찬
	임인제	김민우
	강륜	김종원
	박상돈	지민정

카톡방 만들기