

Greenhouse Monitoring and Controlling System (GMCS)

Hephzibah Farm - Technical Team
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Outline

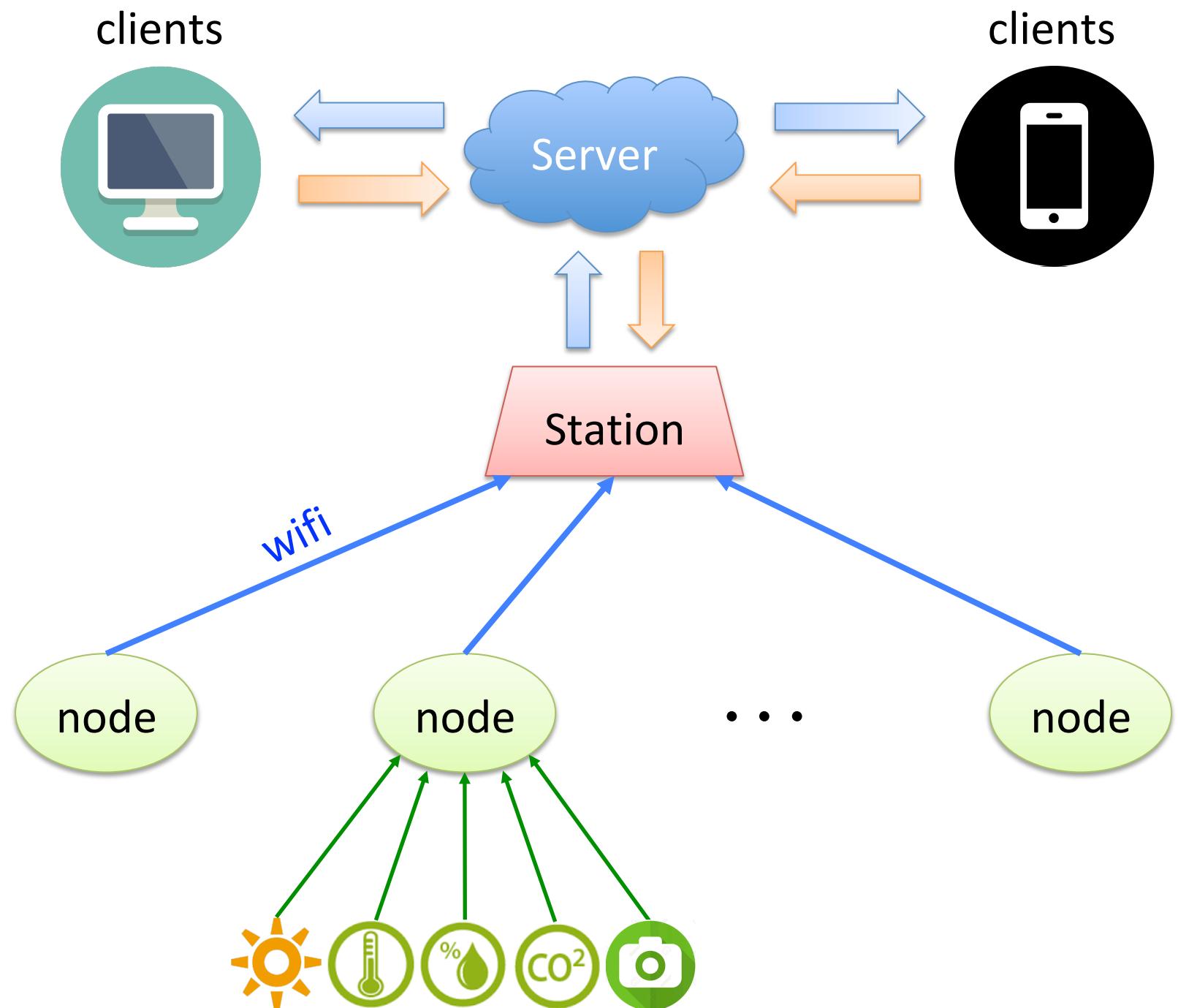
- Objectives
- Infrastructure
- To be discussed

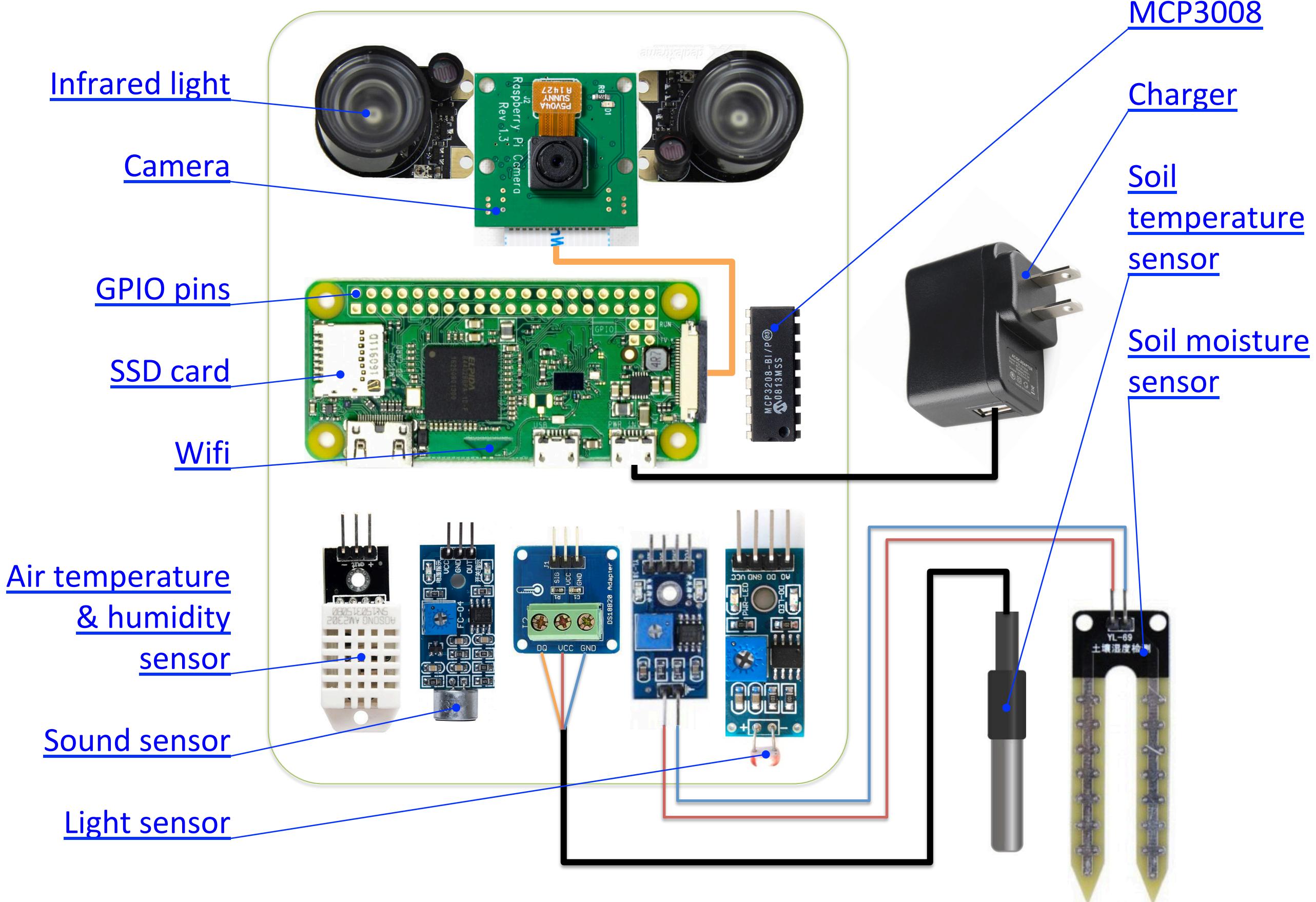
Objectives

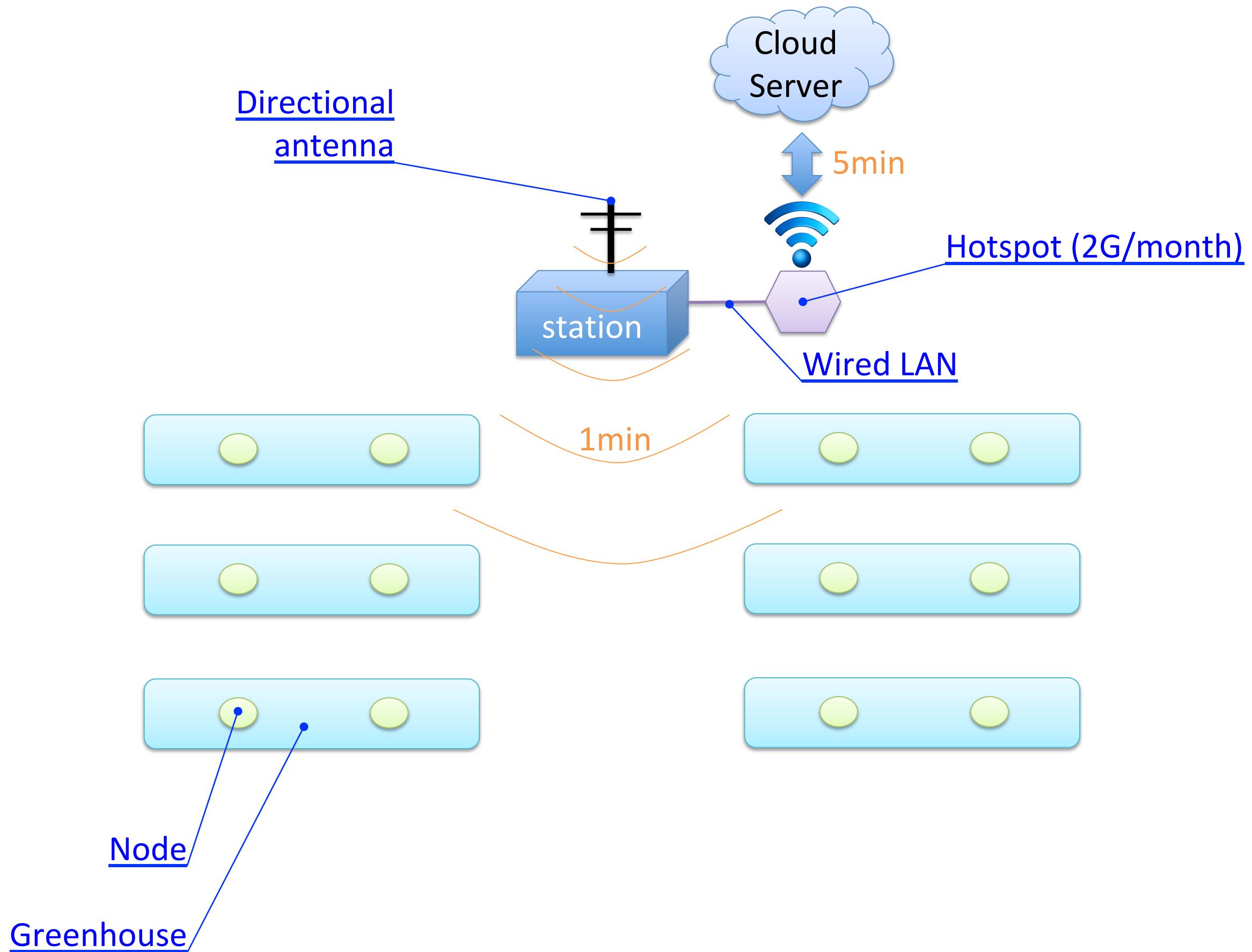
- **Monitoring** (required) the environment: temperature, humidity, brightness, ventilation, disease, animals, equipment failure, etc.
- **Controlling** (optional) the hardware: lights, fans, water pumps, windows, etc.
- **Predicting and optimizing** the profit: growth and disease of plants using artificial intelligence (AI).

Infrastructure

- **Hardware**
 - Node board development
 - Local wireless network
- **Software**
 - Node: sensors operation
 - Station: data collection and submission, control command response
 - Server: web development and data analysis
 - Clients: App development







- GMCS source code
 - <https://github.com/yhyoscar/gmcs>
- Node
 - Setup: <https://github.com/yhyoscar/gmcs/tree/master/node/setup>
 - Run all the sensors:
https://github.com/yhyoscar/gmcs/blob/master/node/control/run_all.py
- Station
 - Collect & submit data:
https://github.com/yhyoscar/gmcs/blob/master/station/run_all.py
- Server
 - Reorganize data:
https://github.com/yhyoscar/gmcs/blob/master/server/run_orgdata.py
 - Temporal address: <http://129.49.67.246/farm/data/>

To be discussed

- Timeline
- Node board redesign (HY, FS)
- Local network and database design (YH, JY)
- Web design (WB, etc.)
- App design (HY, etc.)

- PCB board: Easy EDA
 - https://www.youtube.com/watch?v=_3jFsNffzxQ
 - <https://www.youtube.com/watch?v=g4iiekExXak>