Smart Agriculture App (Progress Report)

Group 31

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How the project will work:

First sensors on the field will collect real time data

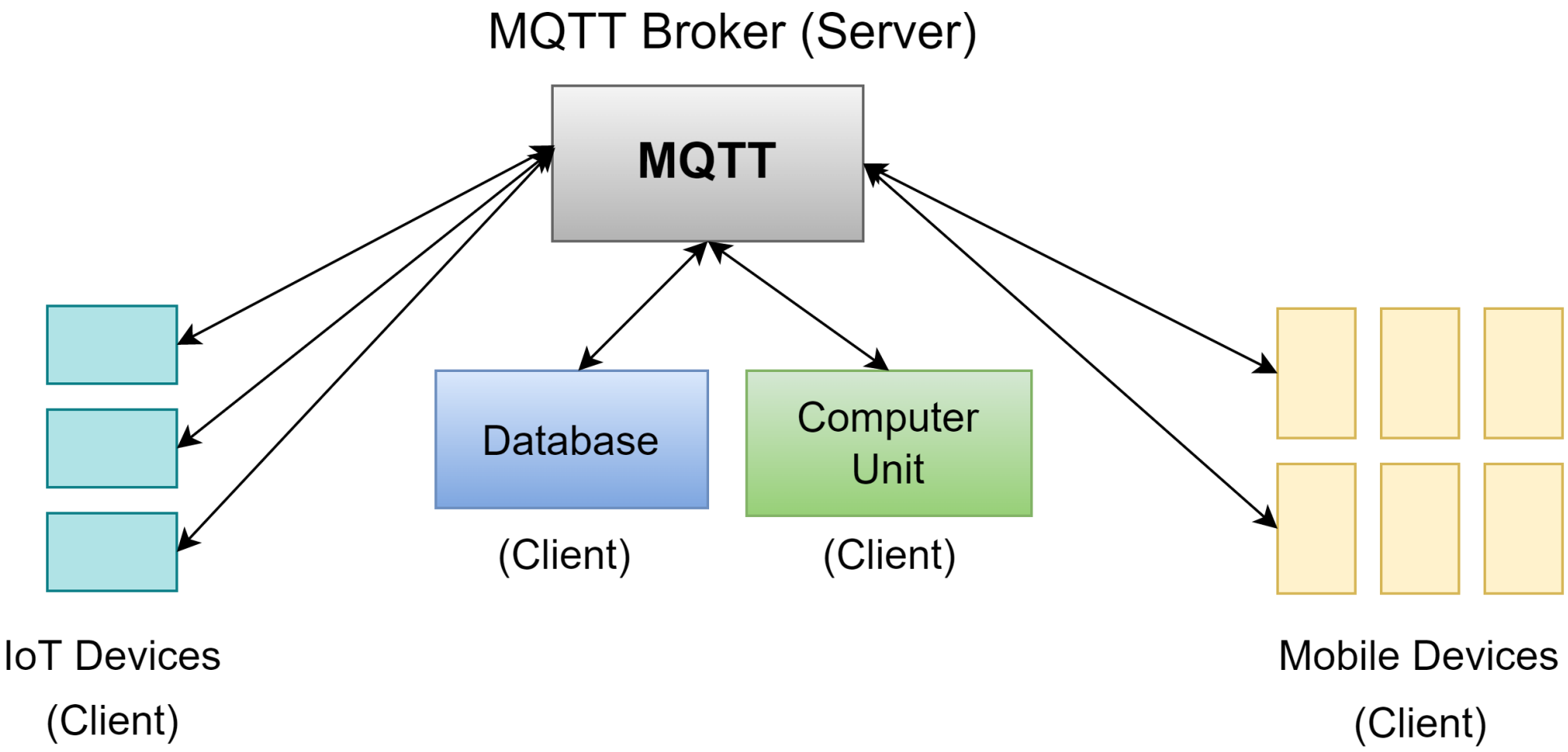
The collected data is sent for cloud computing

The data will be then processed and refined using machine learning which will also provide certain predictions regarding which crop is best suited for the soil, what will be the avg produce

This data is sent to mobile application to through API

Finally, the end user will see this information taken from API in the mobile application

Data Flow Lifecycle



Data Flow & Why MQTT?

- We've chosen MQTT (Message Queueing Telemetry Transport) as our preferred transport protocol.
- It is a lightweight protocol, that is mainly focused on real-time data transfer from IoT devices.
- Network outages handling, data retention/buffering and authentication all is handled by the MQTT Broker, making it lightweight at the client side and a good fit for use with the embedded devices.
- It is easy to track down which element is down in the supply chain.
- Asynchronous data transfer (fast and slow sensors have no problem providing their latest real-time data).
- Everyone (both sender & receiver) being a client, it's easy to integrate the protocol over variety of devices.
- Supports 2-way data transfer, easy to push raw data and pull results from the compute unit, and same for the database.
- Embedded devices need not to send the data multiple times to compute unit, mobile devices, and to database, drastically reducing the network bandwidth.

App layout

Single Page Application
Using Flutter

Main Components:

- AppBar
- FontAwesome Icons
- ToolTips
- Container
- BottomNavigationBar