**Hardware:**

* Raspberry Pi 3 model B (1 GB RAM).
* Raspberry Pi 3 heatsinks.
* SD Card.
* Raspberry Pi 3 case and adapter.
* RTC Module (DS3231 RTC Breakout).
* LEDs (optional).

**Software:**

* **Raspberry Pi (Hub):**

1. Core app (Central brain of the system) that responsible for communication with other devices and sync data with cloud.
2. Embedded web server for configuration purposes.
3. Database.

* **Mobile App:**

For user control, can be used locally or remotely.

* **MQTT Broker:**

For remote actions between the hub and the mobile app.

* **Cloud Rest API:**

For syncing data and logs with cloud side.

* **Web Dashboard (Optional):**

For reporting and analytical purposes.

**Protocols:**

* **HTTP:**
* Communication between the hub and placed units.
* Communication between the hub and cloud API (logging/reporting).
* **MQTT:**
* Communication between the mobile app and broker (for remote control).
* Communication between the mobile app and the hub (for local control).