AUTOMATIC FISH FEEDER

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K.S.RANGASAMY COLLEGE OF TECHNOLOGY
AUTONOMOUS | TIRUCHENGODE

80 EC E22 – IoT Product Development
Continuous Assessment -1 | February 2025

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PRIMARY USE CASE

- Research Institutes: Uses in their aquaculture lab
- Fish Farmers: uses for easy monitoring of food supply
- Pet stores: uses to handle the multiple tanks

STAKEHOLDER

- Fish farmers
- Aquarium owners
- Research institutions
- Pet store businesses

USER REQUIREMENTS

- Dispense of food at scheduled intervals without manual intervention.
- Adjusting of feeding interval and portion size based on fish growth stages.
- Support for multiple types of fish feed (pellets, granules, flakes).

FUNCTIONAL & NON-FUNCTIONAL REQUIREMENTS

Functional

- Automated feeding system
- Water monitoring (Oxygen, Temperature)
- RGB lighting for aesthetics and visibility
- LCD display for real-time updates
- Mobile notifications & cloud integration

Non-Functional

- Secure cloud storage (Firebase)
- Scalable for multiple tanks
- Reliable & efficient performance

HARDWARE & SOFTWARE REQUIREMENTS

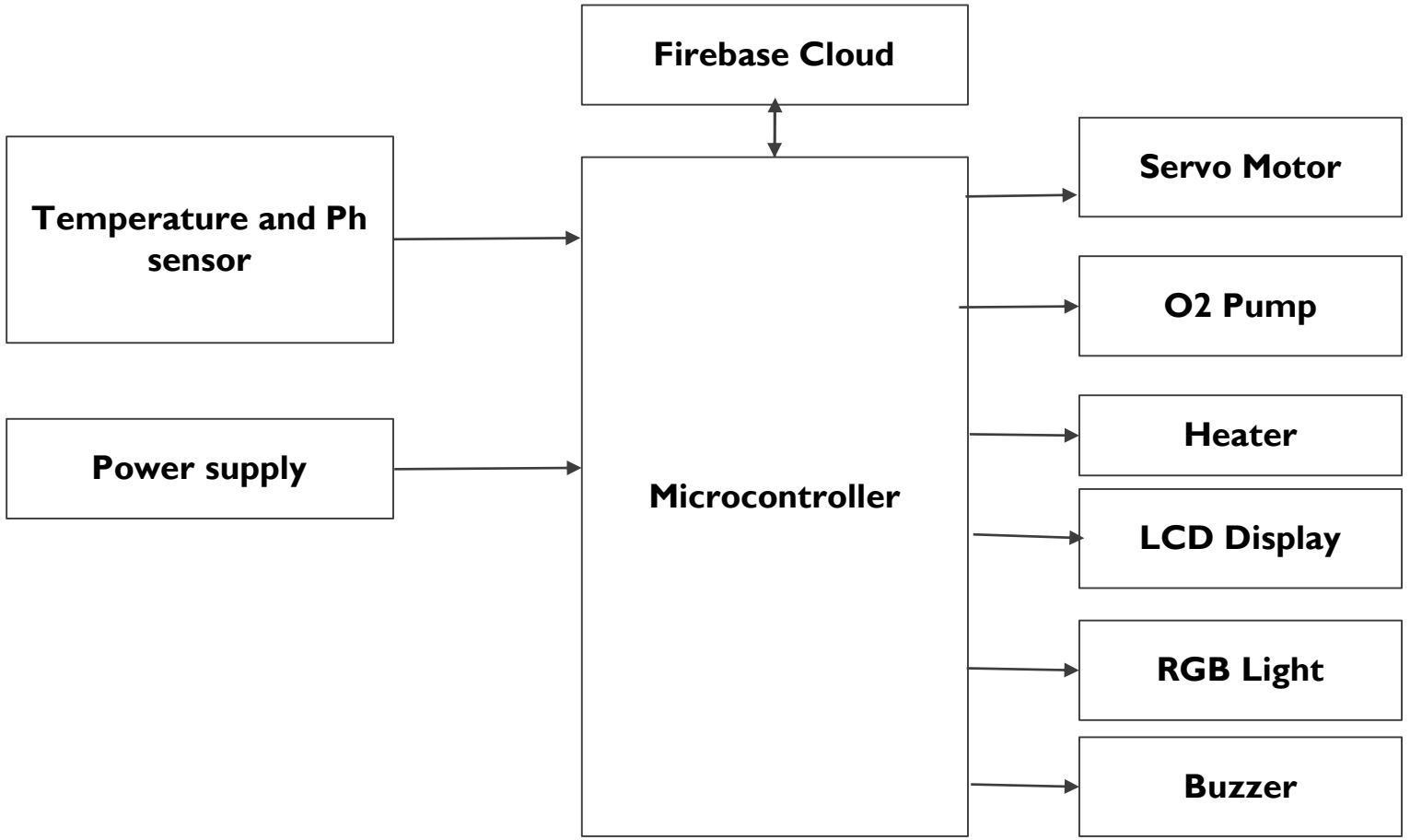
Hardware

- ESP32 microcontroller
- Servo motor for feeding
- Temperature & pH sensors
- Peltier module for temperature Control
- LCD Display (16x2) & Buzzer

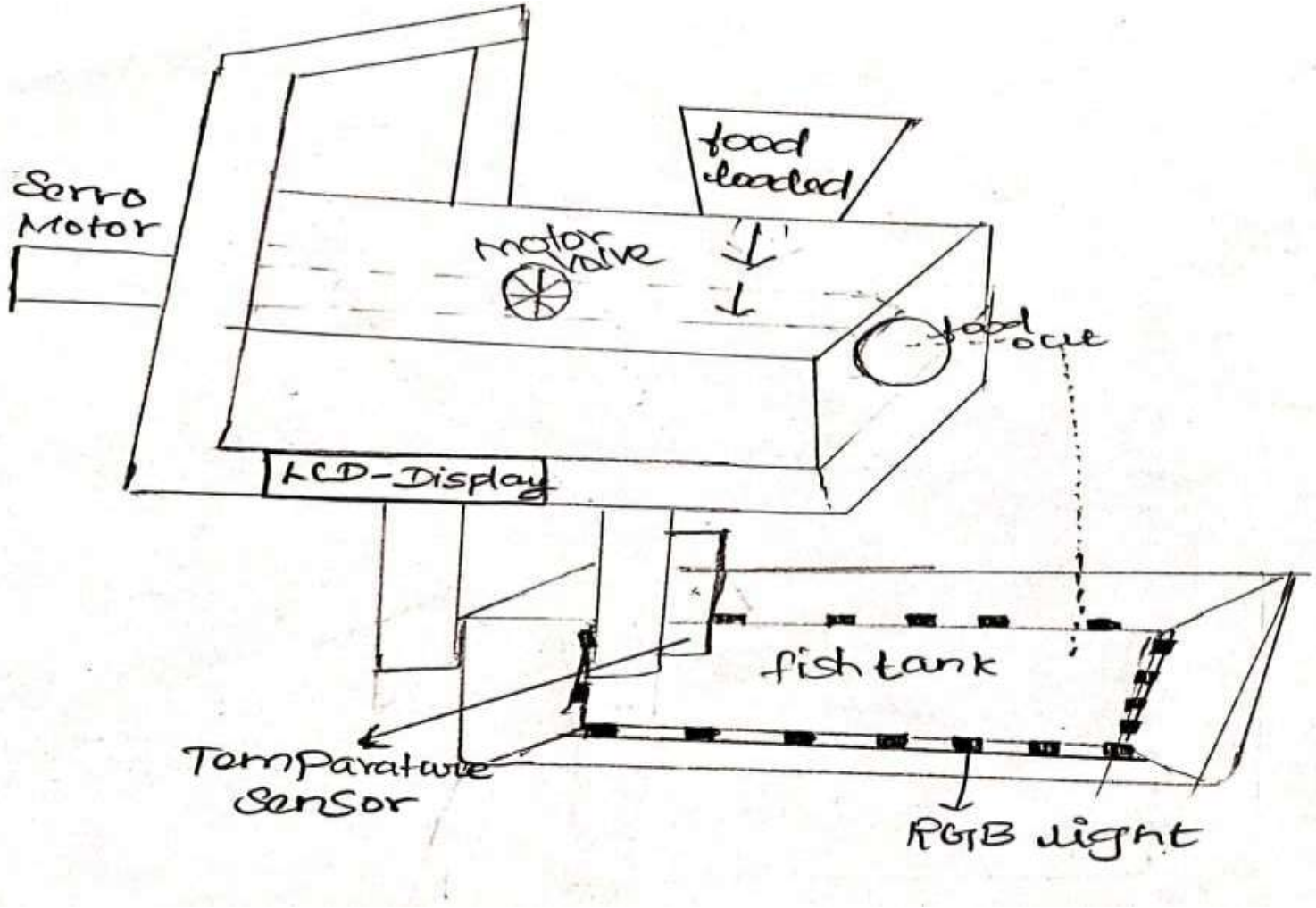
Software

- Embedded firmware for ESP32
- Mobile App/Web dashboard
- Firebase cloud integration
- Ki-cad

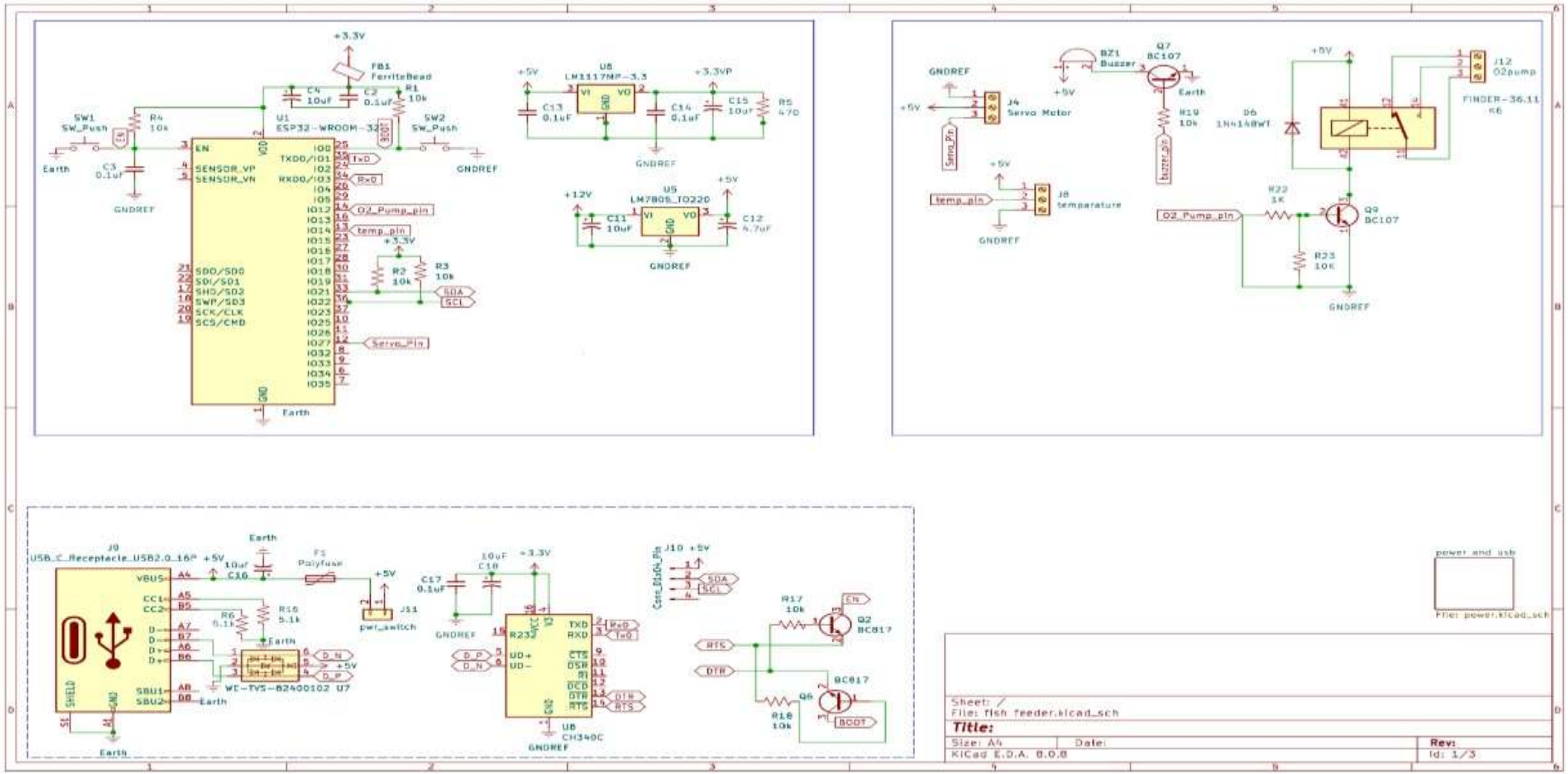
BLOCK DIAGRAM



EXPECTED PRODUCT ENCLOSURE DESIGN



SCHEMATIC DIAGRAM



THANK YOU !

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