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FINDR

BY TEAM GOOGOL
(HARDWARE TRACK)



What is FINDR?

FINDR is a **smart automated box + AI-powered web app** to make lost-and-found simple, secure, and efficient.

Found a Item? Snap a picture in our web app and place it in a FINDR box

Lost Something ? Search with a description in our web app. Our AI matches your query to uploaded items

Claim your item. If matched, just scan your RFID card at the box to unlock and retrieve your item.



Problem Statement

Lost-and-found on university campuses is inefficient and unreliable:

- Items are often misplaced or left unclaimed.
- Students struggle to describe and identify their belongings.
- Manual tracking wastes time and lacks transparency.
- No secure system exists to ensure only the rightful owner retrieves an item.



How do we fix this using FINDR?

Security

Automated lock + RFID prevents unauthorized access.

Transparency

Cameras provide proof of deposit + retrieval.

Scalability

Multiple FINDR boxes can be deployed across campus.

Efficiency

No more endless searching; AI-powered matching reduces time.

Accessibility

Easy Item drop-off in FINDR box and easy item search anytime, anywhere in webapp.



Software Tech Stack

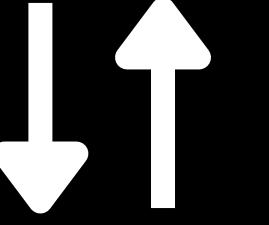
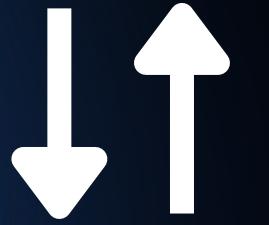


ChromaDB



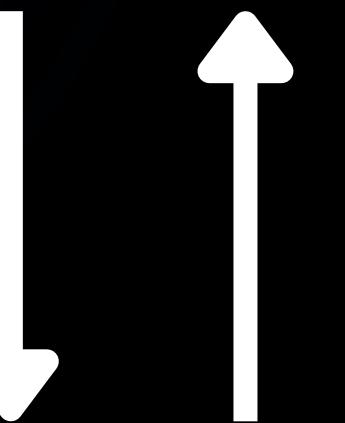
SQLite

Database

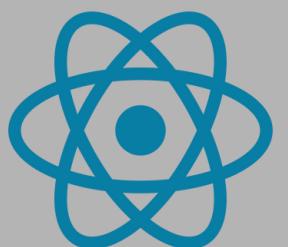


Python

Backend



API Gateway



ReactJS



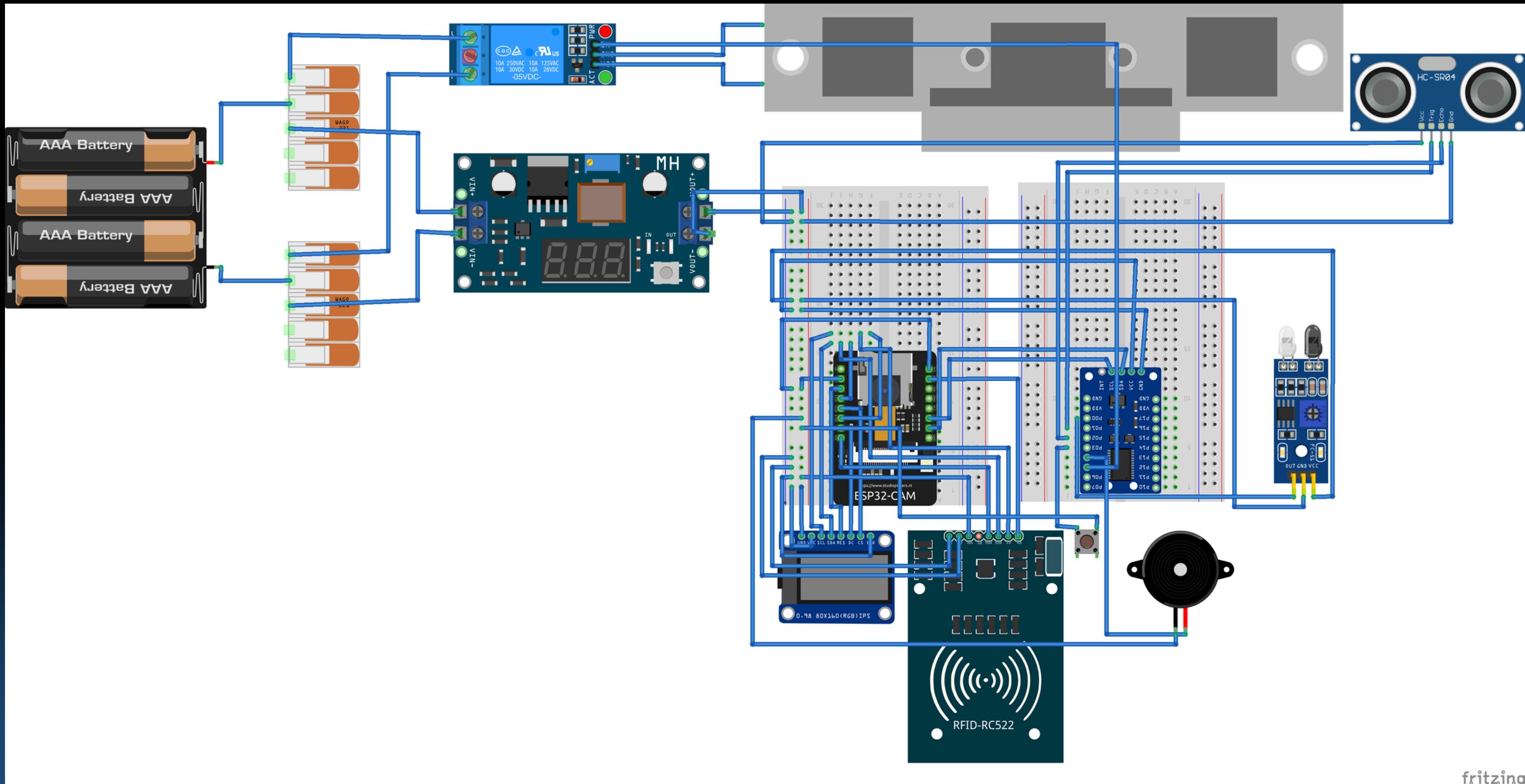
TailwindCSS

Frontend

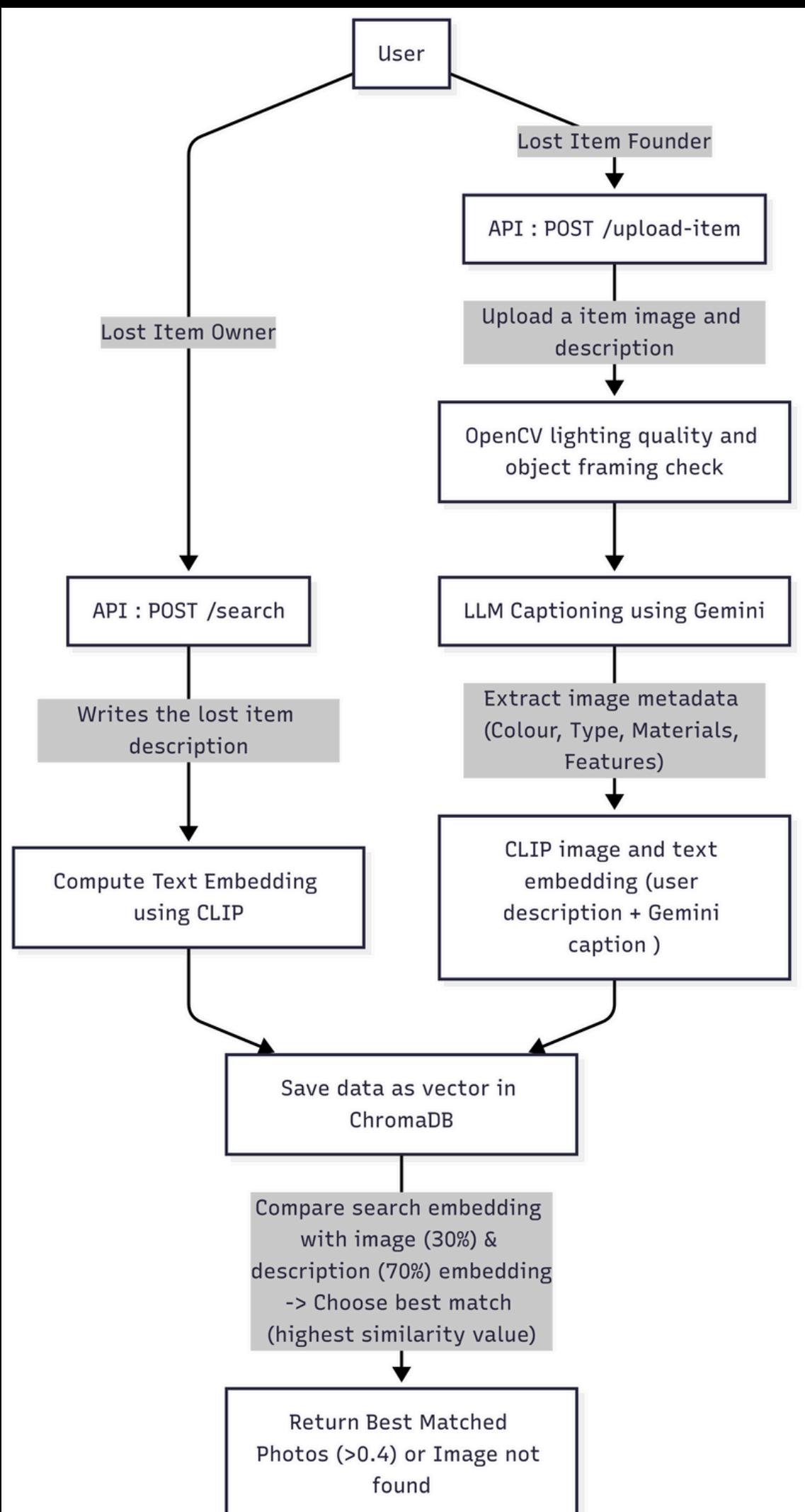


Hardware used

Hardware	Feature
ESP32-CAM	Captures images and handles communication with the server.
LCD Display (LCD1)	Displays QR code for user login and shows the status of the box.
PCF8575 I/O	Provides 16 additional GPIO pins to the ESP32 via I2C for connecting to low-speed devices.
IR Sensor	Detects presence or movement of a person in front of the box.
Ultrasonic Sensor	Detects and measures items placed inside the box.
RFID Sensor	Allows users to unlock the box using their student card.
Switch Sensor	Detects whether the box is open or closed.
Buzzer	Alerts the user if the box remains open.
DC-DC Step-Down Converter	Provides regulated power supply to the entire circuit.

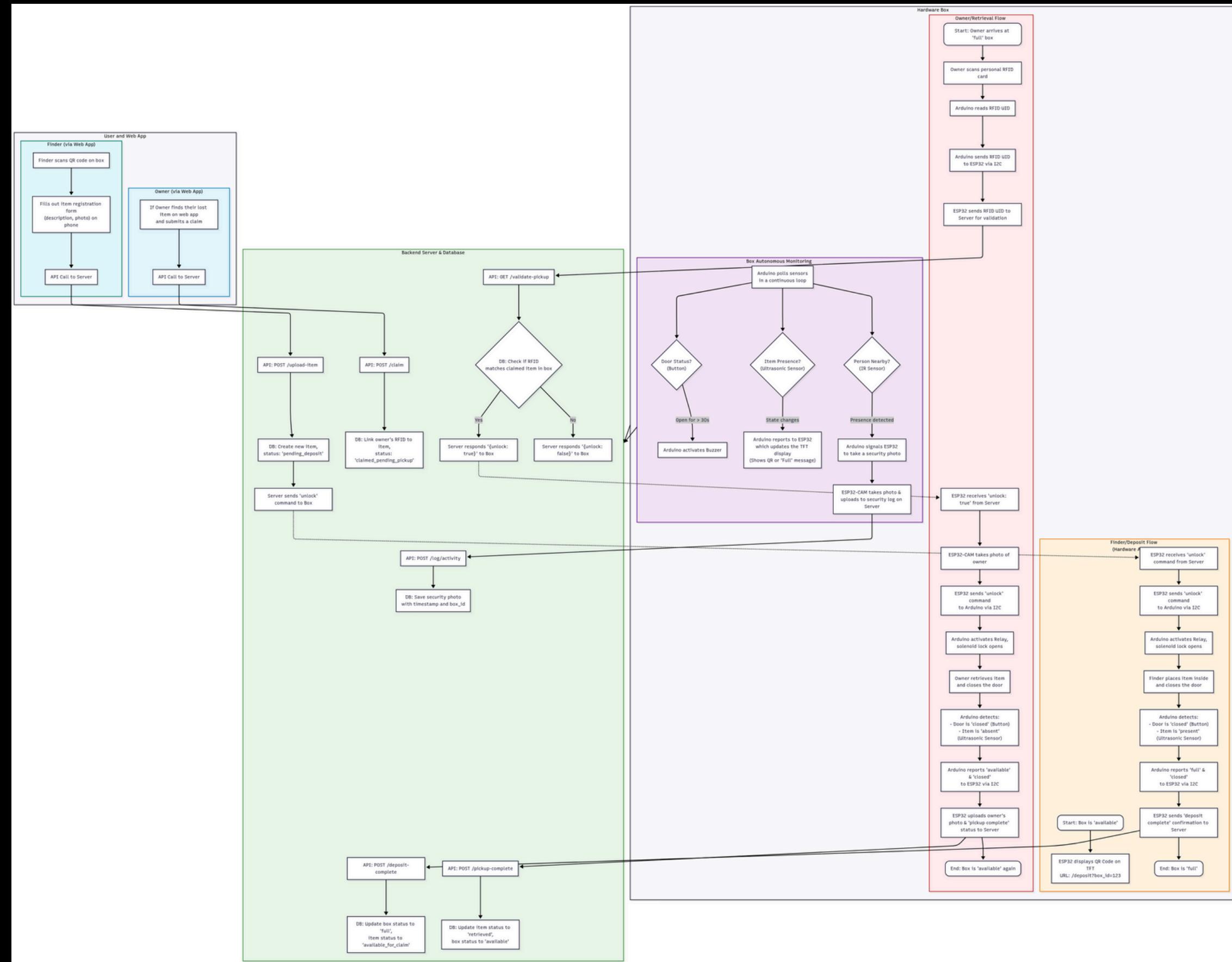


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How we implement AI into our item query system

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THANK YOU