🚀 **Goal:**

Deliver an API that can:

1. Identify vegetables (incl. leafy + fruits) from webcam/image.
2. Allow tagging metadata (local name, SKU/barcode).
3. Serve this functionality via REST API.
4. Provide a basic UI for tagging.

📅 **Week 1: Data & Model Extension**

- **Dataset expansion**
  - Add 10–15 new classes: leafy vegetables + 5–10 fruits
  - Use open datasets + your own image collection
- **Model retraining/fine-tuning**
  - Use Transfer Learning (e.g., EfficientNet, MobileNet)
  - Validate with confusion matrix
- **Testing and Accuracy Adjustment**
  - Aim for 85–90% class-level accuracy for MVP

📅 **Week 2: API & Backend Development**

- **Build the FastAPI/Flask backend**
  - POST /identify for image input → return prediction
  - POST /tag for metadata input
  - GET /items to list known items

- **Database setup** (PostgreSQL or MongoDB)
    - Tables: Items, Tags, Languages, Barcodes
- **Internal testing with dummy frontend**

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17 Week 3: UI & Integration

- **Basic UI** (React, plain JS, or even Streamlit for speed)
    - Upload image → see prediction
    - Form to enter local names, SKU/barcode
- **Preview database contents (CRUD)**
    - Tag existing predictions
    - Show item history

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17 Week 4: Packaging & Deployment

- **Deploy API & model**
    - Use **Render**, **Railway**, or **AWS EC2** (small instance)
- **Test with POS sample**
    - Simulate POST call from barcode scanner app
- **Create API Docs**
    - Use Swagger/OpenAPI
    - Sample curl, Python, JS usage
- **Optional:** Dockerize for portability


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