🔁 NutriScope Recap

✅ Current Scope (Version 1 → Cleanup for v2)

- Covers **basic lab tests** only (CBC, BMP, LFT, Lipid, Thyroid, Vitamins/Iron, Kidney).

- Uses **age + sex–based reference ranges** for interpretation.

- Shows **warnings & disclaimers**:

  - Not applicable for pregnancy, diabetes, chronic diseases (for now).

  - "⚠️ Important: NutriScope is an AI-powered tool… reference ranges may differ slightly from labs… educational only, not medical advice."

- Applies **constraints**: unit normalization, borderline tolerance, sanity checks to avoid false alarms.

⚠️ Issues We Identified

- The old backend was too heavy/complex.

- The knowledge base didn't handle context well.

- OCR/parsing caused misreads and noise.

- Sometimes flagged non-issues as "abnormal."

🛠️ Plan for NutriScope v2 (Lightweight Backend)

- **Backend reset** → fresh FastAPI backend with:

  - JSON knowledge base (`tests_kb_v2.json`)

  - Deterministic resolver (age + sex priority)

  - Unit normalization + borderline classification

  - Simple OCR pipeline (PyMuPDF + Tesseract fallback)

  - Groq API only for optional natural-language summaries

- **API endpoints**:

  - `POST /analyze` → run analysis

  - `GET /kb/tests` → list supported tests

  - `GET /reports` & `GET /reports/{id}` → saved report history

🖥️ Frontend Additions

- Upload form fields:

  - **Test Report Name**

  - **Age**

  - **Sex**

  - **File**

- After uploading, save results to the Reports **Section**.

- Reports List view → Name | Date | Age/Sex | Status | Actions.

- Report Detail view → Summary, Applied Ranges, Disclaimer.

🚀 Future Enhancements

1. **Expand the knowledge base** (more tests + pregnancy, diabetes, CKD, etc.).

2. **Pregnancy-specific ranges** (trimester-aware).

3. **Condition-aware overlays** (diabetes goals, CKD staging).

4. **Better OCR/parsing** (table-aware extraction).

5. **Monitoring improvements**:

   - Track accuracy, latency, and cost per report.

   - Admin dashboard for **model quality over time**.

   - User-facing "re-analysis improved results" note.

✅ **In summary:**
We're starting fresh with a **lightweight, efficient, explainable backend** + a **clean frontend flow**. Current scope = **basic tests with age/sex logic** + **warnings**. Future = expand coverage, personalization, and continuous quality monitoring.