F&B AI Purchasing Agent (Procurement Manager)

Prototype for normalizing fragmented supplier catalogs, converting units/pack sizes, and enabling apples-to-apples price comparisons.

What this MVP does

- Parses pack sizes like `10 x 1kg`, `5lb`, `12/500g`, etc.
- Normalizes units (kg, g, lb, oz) into a common base (kg).
- Normalizes SKU names to improve matching across suppliers.
- Groups similar items using fuzzy matching.
- Produces comparable $/kg pricing so chefs can compare fairly.

Architecture & Design

> 🎯 📖 ***Complete Documentation Index*** *— Quick navigation to all diagrams, flows, and specifications*

📊 Visual Architecture (START HERE!)

- **Complete Architecture Diagrams** ⭐ **[NEW]**
  - System-wide layered architecture (8 layers)
  - Restaurant AI agent mesh (Procurement, Inventory, Kitchen Copilot)
  - Supplier Autonomous Sales Agent (Instant-Close, Upsell, Flash Deals)
  - External API integrations (POS, Payment Gateway, Poppel E-Invoicing, WhatsApp)
  - Event-driven real-time flows
  - Dashboard & observability
- **Deployment & Infrastructure** ⭐ **[NEW]**
  - Cloud infrastructure (AWS + GCP)
  - Containerized services & Kubernetes orchestration
  - Database clustering & backup strategy
  - Security & compliance (UAE E-Invoicing, GDPR, PCI-DSS)
  - Disaster recovery & high availability
  - Monitoring with Datadog

📚 Detailed Technical Docs

- Agentic architecture: Multi-agent design with reasoning, function calling, and ReAct loops.
- Architecture & flows: System diagrams, data flows, approval workflows.
- Data model: ER diagram, Pydantic schemas, state transitions.
- MedusaJS architecture: Full MedusaJS 2.0 + LangGraph architecture with POS integrations, Vector DB, OCR.
- Autonomous Sales Agent: Supplier-side AI agent capabilities (instant quotes, basket-aware negotiation, liquidation).
- Detailed flows: Step-by-step flows for catalog upload, POS→AI cart, GRN→invoice match.
- System Design Deep-Dive: Journey mapping, technical logic, matching algorithms, channel strategy.
- System Specification: Executive summary, platform strategy, value propositions.

Quick start

1. Install deps
    - `pip install -r requirements.txt`
2. Run
    - `python -m src.app`

Agentic scaffold (ReAct + tools)

Run the scaffolded multi-agent runner:

- `python -m src.agentic.runner`

Environment variables live in .env.example.

Data

Edit data/suppliers.csv to add suppliers, prices, and pack info.

Next steps

- Add currency conversion.
- Enrich name normalization with ingredient taxonomy.
- Add a web UI and API for live use.