

# Valora AI – Clean Architecture Diagram & Product Requirements Document (PRD)

## 1. Clean Architecture Overview (Logical Diagram)



## **2. Product Requirements Document (Component-by-Component)**

### **2.1 Core APIs**

- GET /kpis?date=YYYY-MM-DD – Returns daily KPI snapshot
- GET /insights – Returns driver explanations + trends
- GET /risks?severity=... – Returns risk queue
- POST /whatif – Returns projected KPI trajectory for selected action
- POST /actions/commit – Logs owner-approved action
- GET /actions/history – Returns historical actions + realized impact

### **2.2 Core Data Tables**

- fact\_sales\_line\_item (transaction-level sales)
- fact\_inventory\_movement (usage, waste, receipts)
- fact\_vendor\_invoice (cost & price trends)
- fact\_labor\_shift (hours & wages)
- fact\_actions\_taken (closed-loop tracking)
- dim\_item, dim\_sku, dim\_recipe\_bom, dim\_calendar, dim\_store

### **2.3 AI Model Endpoints**

- /model/forecast – Demand & cost forecasting
- /model/anomaly – Risk & anomaly scoring
- /model/recommend – Action ranking & ROI scoring
- /model/whatif – Scenario simulation engine
- /model/explain – Driver attribution & narrative

### **2.4 Alert Severity Formula**

Severity Score = f(Estimated Impact \$, Model Confidence, Persistence, Business Criticality, Reversibility)  
Critical: High \$ impact + high confidence + operational risk  
Warn: Moderate impact + persistent trend  
Watch: Early drift  
Info: Low urgency / monitoring signal

### **2.5 UI Screens**

- Dashboard: Today's Health (KPIs + deltas)

- Risk Center: Severity-based alert queue
- Recommended Actions Panel (ranked by ROI)
- What-If Studio (interactive simulation preview)
- Action Tracker (expected vs realized impact)
- Executive Daily Summary (auto narrative)

### ***3. MVP Definition of Done***

Every morning, Valora AI refreshes KPIs, identifies top risks with dollar impact, recommends ranked actions, allows one-click what-if preview, and sends severity-based notifications. All outputs are auditable and traceable.