1. Fact_Inventory

Raw Fields			
Field Name	**Data Type**	**Definition**	**Purpose / Significance**
Inventory_ID	Integer	Unique identifier for each inventory record.	Primary Key; ensures stable row-level tracking.
SKU_ID	Text	ID of the product/SKU.	Foreign Key → Dim_SKU; core for ABC/XYZ analysis.
Supplier_ID	Text	ID of the supplier who delivered the SKU.	FK → Dim_Supplier; enables supplier performance linkage.
Warehouse_ID	Text	ID of the warehouse storing this SKU.	FK → Dim_Warehouse; supports warehouse-level reporting.
Received_Date	Date	Date the SKU lot was received at the warehouse.	Used for stock age, expiry window measurement.
PO_Last_Date	Date	Date the last purchase order for this SKU was issued.	Used to compute actual lead time.
Expiry_Date	Date	The date after which the SKU is no longer sellable.	Enables expiry bucket reporting and risk visibility.
Qty_On_Hand	Integer	Physical stock currently available in warehouse.	Core inventory metric affecting ATP, cover days, turnover.
Qty_Reserved	Integer	Units reserved for pending customer orders.	Helps compute available stock, prevents overselling.
Qty_Committed	Integer	Units committed to future operations (e.g., internal transfers).	Used in ATP calculation.
Lead_Time_Days	Integer	Actual lead time (Received_Date – PO_Last_Date).	Used for Supplier Performance metrics.
Unit_Cost_USD	Decimal	Cost per unit of SKU.	Required for inventory valuation & turnover.
Last_Purchase_Price_USD	Decimal	Price paid in last procurement cycle.	Helps analyze procurement cost changes.
Order_Freq_monthly	Integer	How often the SKU is ordered per month.	Useful for understanding operational replenishment cycles.

Field Name	Data Type	Definition	Purpose / Significance
FIFO_FEFO	Text	Which picking logic applies—FIFO or FEFO.	Supports expiry-sensitive operational decisions.
Inventory_Status	Text	Status such as "In Stock", "Low Stock", "Expiring Soon".	Operational classification for warehouse teams.

Calculated Columns			
Field Name	**Data Type**	**Definition**	**Purpose / Significance**
Available_To_Promise (ATP)	Integer	Qty_On_Hand – Qty_Reserved – Qty_Committed.	Critical for stock availability KPIs; used to flag overselling.
Stock_Age_Days	Integer	Days between Received_Date and report date.	Supports dead stock detection.
Days_to_Expiry	Integer	Days remaining before expiry date.	Drives expiry risk dashboards.
Expiry_Bucket	Text	Categorization: ≤7d, ≤30d, ≤90d, >90d.	Used in expiry risk heatmaps.
Inventory_Value_USD	Decimal	Qty_On_Hand × Unit_Cost.	Core valuation metric for finance and supply chain.
Promised_Date	Date	Expected delivery date per PO.	Used for OTD measurement.
Supplier_Mean_LT	Decimal	Supplier-level average lead time pulled into fact.	Enables variance analysis at row level.
OnTime_Flag	Boolean	1 if Received_Date ≤ Promised_Date, else 0.	Used to calculate supplier OTD%.

2. Fact_Orders

Raw Fields			
Field Name	**Data Type**	**Definition**	**Purpose / Significance**
Order_ID	Text	Unique identifier for each customer order.	Primary Key for order-level analysis.
Order_Date	Date	Date the customer placed the order.	Drives month/week calculations for demand KPIs.
SKU_ID	Text	SKU ordered.	FK → Dim_SKU.
Order_Qty	Integer	Quantity purchased.	Core demand metric used for forecasting & ABC revenue.

Supplier_ID	Text	The supplier associated with that SKU.	FK → Dim_Supplier; connects demand to supplier base.
Warehouse_ID	Text	The warehouse fulfilling the order.	FK → Dim_Warehouse; supports fulfillment workload analysis.
Unit_Price_USD	Decimal	Selling price of the SKU for that order.	Required for revenue-based ABC.
Revenue_USD	Decimal	Order_Qty × Unit_Price_USD	Primary revenue metric in the model.

3. Dim_SKU

Raw Fields			
Field Name	**Data Type**	**Definition**	**Purpose**
SKU_ID	Text	Unique product identifier.	Primary Key.
SKU_Name	Text	Descriptive name of the SKU.	Used in visuals, helps readability.
Category_ID	Text	Links SKU to product category.	FK → Dim_Category.
Calculated Columns			
Field Name	**Data Type**	**Definition**	**Purpose**
SKU_Total_Revenue	Decimal	Total revenue generated by SKU (sum from Fact_Orders).	Base metric for ABC classification.
SKU_Rank_By_Revenue	Integer	Rank of SKU by descending revenue.	Used to assign ABC.
SKU_Running_Total_Revenue	Decimal	Cumulative revenue across ranked SKUs.	Supports Pareto analysis.
SKU_CumPct_Revenue	Decimal	Cumulative % contribution to revenue.	Used for ABC thresholds (e.g., 80/15/5).
ABC	Text	Value class (A/B/C) based on revenue share.	Strategic SKU segmentation.
SKU_CV_Daily	Decimal	Coefficient of variation of daily demand.	Used for XYZ classification.
XYZ	Text	Demand volatility class (X/Y/Z).	Critical for forecasting & safety stock logic.

4. Dim_Category

Raw Fields			
Field Name	**Data Type**	**Definition**	**Purpose**
Category_ID	Text	Unique category identifier.	Primary Key.
Category	Text	Name of the product category (Fresh Produce, Dairy, Pantry, etc.)	Used for category-level reporting.

5. Dim_Supplier

Raw Fields			
Field Name	**Data Type**	**Definition**	**Purpose**
Supplier_ID	Text	Unique supplier identifier.	Primary Key.
Supplier_Name	Text	Descriptive supplier name.	Used in visuals & KPIs.
Total_Deliveries	Integer	Count of deliveries made by this supplier.	Helps assess supplier engagement volume.
Deliveries_Considered	Integer	Deliveries used in OTD calculation.	Excludes missing/invalid cases.
OnTime_Count	Integer	Number of on-time deliveries.	Kernel metric for OTD%.
Late_Count	Integer	Number of late deliveries.	Identifies reliability issues.
Calculated Columns			
Field Name	**Data Type**	**Definition**	**Purpose**
Supplier_OnTime_Pct	Decimal	On-time delivery percentage.	Key supplier SLA metric.
Supplier_Reliability_Category	Text	Categorization (Good/Average/Poor).	Simplifies reporting for stakeholders.
Supplier_Risk_Score	Decimal	Composite score (LT variance + OTD shortfall).	Used in Supplier Risk quadrant chart.
Avg_Delay_Days	Decimal	Average number of days delayed when late.	Shows severity of delays.

Avg_Lead_Time_Days	Decimal	Supplier's average lead time.	Crucial for procurement planning.
Lead_Time_STD	Decimal	Standard deviation of lead time.	Indicates reliability variability.
Supplier_Value_Share_Pct	Decimal	Supplier's share of total inventory value.	Used for supplier dependency KPI.

6. Dim_Warehouse

Raw Fields			
Field Name	Data Type	Definition	Purpose
Warehouse_ID	Text	Unique identifier for each FC.	Primary Key.
Warehouse_Location	Text	City/Location of warehouse (Scarborough, Mississauga, etc.)	Enables geographic operational reporting.