

Global Inventory Database – Conceptual & Logical Models

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Introduction

The Global Inventory Database is designed to support multinational inventory management, warehousing, distribution, logistics, retail operations, procurement, and supply chain analytics across geographically distributed business locations. The purpose of this database is to provide a centralized and standardized repository for tracking products, inventory balances, warehouse storage locations, pricing, movement history, and geographic distribution across countries and regions worldwide.

The database is intended to support organizations that maintain inventory in multiple countries, warehouses, distribution centers, retail facilities, and regional storage hubs. The design emphasizes scalability, normalization, historical tracking, analytical reporting, and operational flexibility. The conceptual model establishes the business foundation required to build logical and physical database implementations later using Microsoft SQL Server.

The system supports both transactional inventory processing and analytical reporting. The model accommodates detailed warehouse location tracking down to floor, room, aisle, rack, shelf, bin, or pallet level. It also supports product categorization, supplier and manufacturer relationships, pricing structures, inventory valuation, and historical inventory trend analysis.

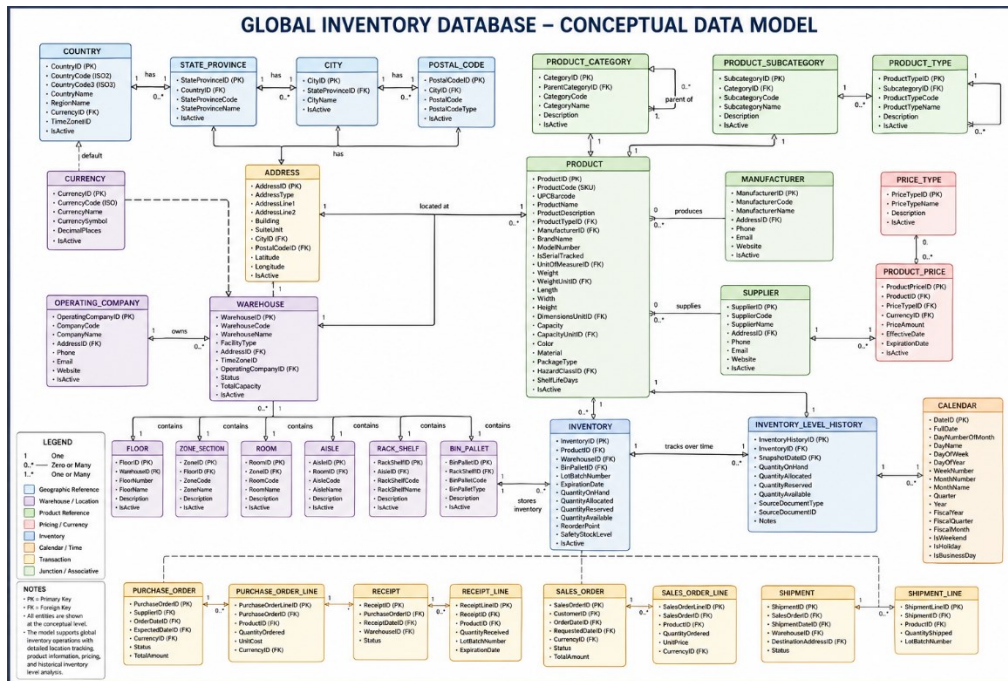


Figure 1 - Conceptual Data Model – Global Inventory System

Conceptual Model Narrative – Global Inventory Database

The Global Inventory Database conceptual model represents a comprehensive enterprise inventory management environment designed to support multinational warehousing, distribution, logistics, procurement, and retail operations. The model establishes the high-level business entities and relationships required to manage products, inventory balances, warehouse locations, pricing structures, suppliers, manufacturers, and geographic information across globally distributed operations.

At the center of the model is the Product entity, which represents the inventory items managed throughout the enterprise. Products are organized into a hierarchical classification structure composed of Product Categories, Product Subcategories, and Product Types. This layered categorization approach allows organizations to group inventory according to operational, financial, analytical, or merchandising requirements. Each product may contain detailed descriptive information such as manufacturer, model number, dimensions, color, weight, capacity, packaging type, and unit-of-measure characteristics.

The model also includes Manufacturer and Supplier entities to distinguish between the organization that produces a product and the organizations responsible for procurement, wholesale distribution, or replenishment. This design supports global sourcing strategies, multiple supplier relationships, and complex supply chain operations.

A major focus of the conceptual model is the detailed warehouse location hierarchy. Warehouses may contain multiple floors, zones, rooms, aisles, racks, shelves, bins, or pallet locations. This structure allows inventory to be tracked down to very specific physical storage locations within large distribution centers or warehouse facilities. Such detailed tracking supports warehouse optimization, barcode integration, inventory reconciliation, cycle counting, robotics integration, and operational efficiency initiatives.

The geographic structure of the model supports worldwide operations through standardized entities for countries, states or provinces, cities, postal codes, and addresses. These entities provide consistent location management and support regional reporting, logistics planning, regulatory compliance, and international distribution. Geographic entities are associated with warehouses, manufacturers, suppliers, and other operational facilities throughout the system.

The Inventory entity represents the current inventory balances maintained at warehouse storage locations. Inventory records track on-hand quantities, allocated quantities, available and reserved inventory, reorder thresholds, and safety stock levels. The model supports both operational inventory processing and analytical reporting requirements.

To support historical analysis and long-term trend reporting, the conceptual model includes an Inventory Level History entity. This entity captures inventory balances over time and enables organizations to perform inventory forecasting, stock movement analysis, seasonal demand analysis, inventory turnover calculations, and historical valuation reporting. Historical inventory tracking is especially important for enterprise reporting, auditing, forecasting, and business intelligence applications.

The model also includes a robust Calendar entity designed to support time-series analytics and fiscal reporting. The calendar structure includes business dates, fiscal periods, quarters, years, holidays, business-day indicators, and related time-intelligence attributes. This entity supports analytical processing and integration with reporting tools, including Microsoft Power BI, SQL Server Reporting Services (SSRS), and SQL Server Analysis Services (SSAS).

Pricing and currency management are also incorporated into the conceptual design. Products may have multiple pricing structures, including wholesale, retail, promotional, and regional pricing. Currency reference entities support international operations and allow organizations to manage inventory and pricing across multiple global markets.

Finally, the conceptual model supports transactional business processes, including purchasing, receiving, inventory replenishment, shipping, and sales order processing. These operational components provide the foundation for a complete enterprise inventory management solution that supports high-volume global operations, distributed warehousing, and advanced supply chain analytics.

Overall, this conceptual model establishes a scalable and flexible foundation for the logical and physical database designs that follow. The design supports operational inventory management, enterprise reporting, business intelligence, and future integration with ERP, logistics, warehouse automation, and cloud-based systems.

Here is the logical data model derived from the conceptual data model.



The logical data model for the Global Inventory Database expands upon the conceptual business model by defining the detailed entities, attributes, relationships, primary keys, foreign keys, and data structures required to support enterprise-level inventory management operations. The logical model transforms high-level business concepts into a structured relational design suitable for implementation within Microsoft SQL Server or other enterprise relational database platforms.

The logical model is organized into several major subject areas, including geographic reference data, warehouse and storage management, product management, pricing and currency management, inventory control, historical inventory tracking, and transactional processing. Together, these components provide a scalable, normalized framework that supports multinational inventory operations and large-scale analytical reporting.

The geographic section of the logical model standardizes global location information through entities such as Country, StateProvince, City, PostalCode, and Address. These entities provide a standardized structure for storing international address information and ensure consistent geographic reporting across the enterprise. Country and currency reference entities support international operations, while address normalization reduces redundancy and improves data quality across warehouse, manufacturer, supplier, and operational facility records.

The warehouse management portion of the model introduces a detailed physical storage hierarchy. The Warehouse entity represents major storage facilities and distribution centers, while subordinate entities such as WarehouseFloor, WarehouseZone, WarehouseRoom, WarehouseAisle, WarehouseRack, and WarehouseBin define increasingly granular storage locations within each facility. This layered structure allows organizations to track inventory down to the exact pallet, shelf, or bin location where inventory physically resides. Such precision is essential for warehouse optimization, cycle counting, barcode scanning, RFID integration, automated picking systems, and inventory reconciliation processes.

The product management area of the logical model centers around the Product entity, which stores detailed information about each inventory item. Products are organized using hierarchical classification entities, including ProductCategory, ProductSubcategory, and ProductType. This hierarchy supports inventory segmentation, merchandising analysis, procurement reporting, and operational grouping strategies. The Product entity includes attributes for product codes, SKU identifiers, UPC barcodes, descriptions, dimensions, weights, capacities, colors, materials, and packaging information. The design also supports specialized product requirements such as hazardous materials handling, shelf-life tracking, and serial number management.

Manufacturer and Supplier entities provide support for global procurement and sourcing operations. The model allows multiple suppliers to be associated with products while separately identifying manufacturers responsible for product production. This structure enables organizations to maintain alternate sourcing relationships, track vendor performance, and pursue supplier diversification strategies.

The pricing structure of the logical model supports global retail and wholesale operations through the ProductPrice, PriceType, and Currency entities. Product pricing records include effective dates, expiration dates, currency associations, and price classifications. This design enables organizations to maintain regional, promotional, and multi-currency pricing structures while preserving historical pricing information for auditing and reporting purposes.

Inventory management functionality is implemented via the Inventory entity, which stores current inventory balances for products and warehouse storage locations. Inventory records maintain operational metrics including quantity on hand, quantity allocated, quantity reserved, quantity available, reorder points, and safety stock levels. The Inventory entity serves as the

operational core of the database, supporting day-to-day inventory processing and warehouse operations.

To support historical analysis and inventory trend reporting, the model includes the InventoryLevelHistory entity. This structure captures inventory balances over time and preserves historical inventory snapshots for analytical purposes. Historical inventory data enables organizations to perform inventory turnover analysis, forecasting, replenishment planning, demand analysis, and inventory aging calculations. The use of time-based inventory history also supports audit compliance and long-term operational reporting.

The Calendar entity provides a robust time-intelligence framework for analytical reporting and business-intelligence integration. Calendar records include fiscal periods, quarters, years, business day indicators, holiday flags, and related date attributes. This structure simplifies time-series analysis and supports reporting tools such as Microsoft Power BI, SQL Server Reporting Services (SSRS), and SQL Server Analysis Services (SSAS).

The transactional processing section of the logical model includes entities such as PurchaseOrder, PurchaseOrderLine, Receipt, ReceiptLine, SalesOrder, SalesOrderLine, Shipment, and ShipmentLine. These entities support procurement, receiving, fulfillment, and shipping workflows throughout the enterprise. Transactional entities are normalized to reduce redundancy while maintaining referential integrity and auditability.

The logical model follows standard relational database normalization principles to minimize duplicate data, improve maintainability, and ensure consistent data quality. Primary and foreign key relationships enforce referential integrity between entities, while surrogate integer keys simplify indexing and improve query performance. The model is designed to support future scalability, partitioning strategies, analytical workloads, cloud deployment, and integration with ERP, warehouse management, and supply chain systems.

Overall, the logical data model provides a detailed and implementation-ready representation of the enterprise inventory environment. It serves as the technical blueprint for the subsequent physical Microsoft SQL Server database design, including table creation scripts, indexing strategies, constraints, and performance-optimization structures.

Data Dictionary - Conceptual Data Model Entities

Entity Name	Description
Country	Stores the master list of countries used throughout the inventory system, including standardized country codes, regional classifications, and currency associations for global operations.

Entity Name	Description
StateProvince	Represents states, provinces, territories, or regional administrative divisions within a country.
City	Stores municipality or city-level geographic information associated with warehouse, supplier, manufacturer, and operational addresses.
PostalCode	Maintains postal or ZIP code reference information used for address validation, logistics routing, and regional reporting.
Address	Stores normalized address information, including street addresses, building information, postal codes, and geographic coordinates, for operational facilities and business entities.
Currency	Maintains the list of supported global currencies, including ISO currency codes, currency names, and currency symbols used for pricing and financial reporting.
OperatingCompany	Represents the business entity, subsidiary, division, or operational company responsible for managing warehouses, inventory, and regional operations.
Warehouse	Represents a physical inventory storage or distribution facility used to store products, equipment, and materials.
WarehouseFloor	Represents a physical floor or level within a warehouse facility where inventory may be stored.
WarehouseZone	Represents logical warehouse sections or operational zones, such as receiving, shipping, refrigerated storage, hazardous materials, or bulk storage.
WarehouseRoom	Represents enclosed rooms or secure storage areas within a warehouse or distribution facility.
WarehouseAisle	Represents aisle pathways within a warehouse used to organize inventory storage and retrieval operations.
WarehouseRack	Represents storage racks, shelves, or structural storage units used to store products within warehouse aisles physically.
WarehouseBin	Represents the lowest-level inventory storage location, such as a pallet, shelf position, bin, or container, where inventory quantities physically reside.
ProductCategory	Represents high-level product classifications used to organize products into broad business groupings such as electronics, food products, industrial equipment, or medical supplies.
ProductSubcategory	Represents detailed product classifications within a product category to support finer inventory segmentation and reporting.
ProductType	Represents operational or business-specific product classifications used for inventory management, procurement, and reporting purposes.
Product	Represents the master inventory item managed by the enterprise, including descriptive, dimensional, operational, and inventory-related information.

Entity Name	Description
Manufacturer	Represents the organization responsible for producing or manufacturing products managed within the inventory system.
Supplier	Represents vendors, distributors, wholesalers, or procurement organizations responsible for supplying products to the enterprise.
PriceType	Defines the type of pricing associated with products, such as wholesale, retail, promotional, contract, or regional pricing.
ProductPrice	Stores product pricing information, including price amounts, pricing types, currencies, and effective date ranges for global pricing management.
Inventory	Represents current inventory balances maintained for products at specific warehouse storage locations.
InventoryLevelHistory	Stores historical snapshots of inventory quantities over time to support inventory trend analysis, forecasting, auditing, and reporting.
Calendar	Provides a centralized business calendar structure that includes dates, fiscal periods, quarters, holidays, and business-day indicators for analytical reporting and time-series analysis.
PurchaseOrder	Represents procurement orders issued to suppliers for purchasing inventory products or materials.
PurchaseOrderLine	Represents the detailed product line items associated with a purchase order transaction.
Receipt	Represents the receipt of goods or inventory arriving at a warehouse or operational facility.
ReceiptLine	Represents the detailed inventory line items received as part of a receipt transaction.
SalesOrder	Represents customer or internal sales requests for inventory products to be fulfilled and shipped.
SalesOrderLine	Represents the detailed product line items associated with a sales order transaction.
Shipment	Represents outbound shipments of inventory products from a warehouse or distribution facility.
ShipmentLine	Represents the detailed product line items associated with a shipment transaction.

Data Dictionary - Conceptual Data Model Entity Relationships

Parent Entity Name	Business Relationship Rule	Child Entity Name
Country	A country contains one or more administrative regions or provinces	StateProvince
StateProvince	A state or province contains one or more cities	City
City	A city contains one or more postal codes	PostalCode
PostalCode	A postal code may be associated with one or more addresses	Address
Country	A country may use one default operational currency	Currency
OperatingCompany	An operating company owns or manages one or more warehouses	Warehouse
Address	An address may identify the physical location of one or more warehouses	Warehouse
Warehouse	A warehouse contains one or more warehouse floors	WarehouseFloor
Warehouse	A warehouse contains one or more warehouse zones or sections	WarehouseZone
Warehouse	A warehouse contains one or more warehouse rooms	WarehouseRoom
Warehouse	A warehouse contains one or more warehouse aisles	WarehouseAisle
Warehouse	A warehouse contains one or more warehouse racks or shelves	WarehouseRack
Warehouse	A warehouse contains one or more warehouse bins or pallet locations	WarehouseBin
WarehouseFloor	A warehouse floor may contain one or more warehouse zones	WarehouseZone
WarehouseZone	A warehouse zone may contain one or more warehouse rooms	WarehouseRoom
WarehouseRoom	A warehouse room may contain one or more warehouse aisles	WarehouseAisle
WarehouseAisle	A warehouse aisle may contain one or more warehouse racks	WarehouseRack
WarehouseRack	A warehouse rack may contain one or more warehouse bins	WarehouseBin
ProductCategory	A product category may contain one or more product subcategories	ProductSubcategory
ProductSubcategory	A product subcategory may contain one or more product types	ProductType
ProductType	A product type may classify one or more products	Product

Parent Entity Name	Business Relationship Rule	Child Entity Name
Manufacturer	A manufacturer produces one or more products	Product
Supplier	A supplier provides one or more products	Product
Product	A product may have one or more pricing records	ProductPrice
PriceType	A price type classifies one or more product pricing records	ProductPrice
Currency	A currency may be associated with one or more product pricing records	ProductPrice
Product	A product may exist in one or more inventory storage locations	Inventory
Warehouse	A warehouse stores one or more inventory records	Inventory
WarehouseBin	A warehouse bin or pallet location stores one or more inventory records	Inventory
Inventory	An inventory record may generate one or more inventory history records over time.	InventoryLevelHistory
Calendar	A calendar date may be associated with one or more inventory history snapshots.	InventoryLevelHistory
Supplier	A supplier may receive one or more purchase orders	PurchaseOrder
Currency	A currency may be associated with one or more purchase orders	PurchaseOrder
PurchaseOrder	A purchase order contains one or more purchase order line items	PurchaseOrderLine
Product	A product may appear on one or more purchase order line items	PurchaseOrderLine
PurchaseOrder	A purchase order may generate one or more inventory receipts< join >A purchase order may generate one or more inventory receipts	Receipt
Warehouse	A warehouse may receive one or more inventory receipts	Receipt
Receipt	A receipt contains one or more receipt line items	ReceiptLine
Product	A product may appear on one or more receipt line items	ReceiptLine
SalesOrder	A sales order contains one or more sales order line items	SalesOrderLine
Product	A product may appear on one or more sales order line items	SalesOrderLine
Currency	A currency may be associated with one or more sales orders	SalesOrder
SalesOrder	A sales order may generate one or more shipments	Shipment

Parent Entity Name	Business Relationship Rule	Child Entity Name
Warehouse	A warehouse may process one or more outbound shipments	Shipment
Shipment	A shipment contains one or more shipment line items	ShipmentLine
Product	A product may appear on one or more shipment line items	ShipmentLine
Address	An address may represent a shipment destination location	Shipment
Address	An address may represent the location of one or more manufacturers	Manufacturer
Address	An address may represent the location of one or more suppliers	Supplier
Address	An address may represent the location of one or more operating companies	OperatingCompany
Product	A product may be stored in one or more warehouses globally	Warehouse
Calendar	A calendar date may be associated with one or more purchase orders	PurchaseOrder
Calendar	A calendar date may be associated with one or more sales orders	SalesOrder
Calendar	A calendar date may be associated with one or more shipment transactions	Shipment
Calendar	A calendar date may be associated with one or more receipt transactions	Receipt

Data Dictionary - Logical Data Model

Entity Attributes

Entity Name	Attribute Name	SQL Server Data Type	Primary or Foreign Key Code
Country	CountryID	INT	PK
Country	CountryCode	CHAR(3)	AK
Country	CountryName	NVARCHAR(100)	
Country	RegionName	NVARCHAR(100)	
Country	DefaultCurrencyID	INT	FK
Currency	CurrencyID	INT	PK

Entity Name	Attribute Name	SQL Server Data Type	Primary or Foreign Key Code
Currency	CurrencyCode	CHAR(3)	AK
Currency	CurrencyName	NVARCHAR(100)	
Currency	CurrencySymbol	NVARCHAR(10)	
StateProvince	StateProvinceID	INT	PK
StateProvince	CountryID	INT	FK
StateProvince	StateProvinceCode	NVARCHAR(20)	
StateProvince	StateProvinceName	NVARCHAR(100)	
City	CityID	INT	PK
City	StateProvinceID	INT	FK
City	CityName	NVARCHAR(100)	
PostalCode	PostalCodeID	INT	PK
PostalCode	CityID	INT	FK
PostalCode	PostalCodeValue	NVARCHAR(20)	
Address	AddressID	INT	PK
Address	PostalCodeID	INT	FK
Address	AddressLine1	NVARCHAR(200)	
Address	AddressLine2	NVARCHAR(200)	
Address	Latitude	DECIMAL(9,6)	
Address	Longitude	DECIMAL(9,6)	
OperatingCompany	OperatingCompanyID	INT	PK
OperatingCompany	AddressID	INT	FK
OperatingCompany	CompanyName	NVARCHAR(150)	
OperatingCompany	CompanyCode	NVARCHAR(30)	AK
Warehouse	WarehouseID	INT	PK
Warehouse	OperatingCompanyID	INT	FK
Warehouse	AddressID	INT	FK
Warehouse	WarehouseCode	NVARCHAR(30)	AK
Warehouse	WarehouseName	NVARCHAR(150)	
Warehouse	WarehouseType	NVARCHAR(50)	
Warehouse	IsActive	BIT	
WarehouseFloor	WarehouseFloorID	INT	PK
WarehouseFloor	WarehouseID	INT	FK
WarehouseFloor	FloorCode	NVARCHAR(30)	
WarehouseFloor	FloorName	NVARCHAR(100)	
WarehouseZone	WarehouseZoneID	INT	PK
WarehouseZone	WarehouseID	INT	FK

Entity Name	Attribute Name	SQL Server Data Type	Primary or Foreign Key Code
WarehouseZone	WarehouseFloorID	INT	FK
WarehouseZone	ZoneCode	NVARCHAR(30)	
WarehouseZone	ZoneName	NVARCHAR(100)	
WarehouseRoom	WarehouseRoomID	INT	PK
WarehouseRoom	WarehouseZoneID	INT	FK
WarehouseRoom	RoomCode	NVARCHAR(30)	
WarehouseRoom	RoomName	NVARCHAR(100)	
WarehouseAisle	WarehouseAisleID	INT	PK
WarehouseAisle	WarehouseRoomID	INT	FK
WarehouseAisle	AisleCode	NVARCHAR(30)	
WarehouseRack	WarehouseRackID	INT	PK
WarehouseRack	WarehouseAisleID	INT	FK
WarehouseRack	RackCode	NVARCHAR(30)	
WarehouseBin	WarehouseBinID	INT	PK
WarehouseBin	WarehouseRackID	INT	FK
WarehouseBin	BinCode	NVARCHAR(30)	
WarehouseBin	BinType	NVARCHAR(50)	
ProductCategory	ProductCategoryID	INT	PK
ProductCategory	CategoryCode	NVARCHAR(30)	AK
ProductCategory	CategoryName	NVARCHAR(100)	
ProductSubcategory	ProductSubcategoryID	INT	PK
ProductSubcategory	ProductCategoryID	INT	FK
ProductSubcategory	SubcategoryCode	NVARCHAR(30)	
ProductSubcategory	SubcategoryName	NVARCHAR(100)	
ProductType	ProductTypeID	INT	PK
ProductType	ProductSubcategoryID	INT	FK
ProductType	ProductTypeCode	NVARCHAR(30)	
ProductType	ProductTypeName	NVARCHAR(100)	
Manufacturer	ManufacturerID	INT	PK
Manufacturer	AddressID	INT	FK
Manufacturer	ManufacturerCode	NVARCHAR(30)	AK
Manufacturer	ManufacturerName	NVARCHAR(150)	
Supplier	SupplierID	INT	PK
Supplier	AddressID	INT	FK
Supplier	SupplierCode	NVARCHAR(30)	AK
Supplier	SupplierName	NVARCHAR(150)	

Entity Name	Attribute Name	SQL Server Data Type	Primary or Foreign Key Code
Product	ProductID	INT	PK
Product	ProductTypeID	INT	FK
Product	ManufacturerID	INT	FK
Product	SupplierID	INT	FK
Product	SKU	NVARCHAR(50)	AK
Product	ProductName	NVARCHAR(150)	
Product	ModelNumber	NVARCHAR(80)	
Product	Color	NVARCHAR(50)	
Product	LengthValue	DECIMAL(18,4)	
Product	WidthValue	DECIMAL(18,4)	
Product	HeightValue	DECIMAL(18,4)	
Product	WeightValue	DECIMAL(18,4)	
Product	CapacityValue	DECIMAL(18,4)	
Product	CapacityUnit	NVARCHAR(30)	
Product	UnitOfMeasure	NVARCHAR(30)	
Product	IsActive	BIT	
PriceType	PriceTypeID	INT	PK
PriceType	PriceTypeCode	NVARCHAR(30)	AK
PriceType	PriceTypeName	NVARCHAR(100)	
ProductPrice	ProductPriceID	INT	PK
ProductPrice	ProductID	INT	FK
ProductPrice	PriceTypeID	INT	FK
ProductPrice	CurrencyID	INT	FK
ProductPrice	PriceAmount	DECIMAL(19,4)	
ProductPrice	EffectiveDate	DATE	
ProductPrice	ExpirationDate	DATE	
Inventory	InventoryID	INT	PK
Inventory	ProductID	INT	FK
Inventory	WarehouseID	INT	FK
Inventory	WarehouseBinID	INT	FK
Inventory	QuantityOnHand	DECIMAL(18,4)	
Inventory	QuantityAllocated	DECIMAL(18,4)	
Inventory	QuantityReserved	DECIMAL(18,4)	
Inventory	QuantityAvailable	DECIMAL(18,4)	
Inventory	ReorderPoint	DECIMAL(18,4)	
Inventory	SafetyStockLevel	DECIMAL(18,4)	

Entity Name	Attribute Name	SQL Server Data Type	Primary or Foreign Key Code
InventoryLevelHistory	InventoryLevelHistoryID	INT	PK
InventoryLevelHistory	InventoryID	INT	FK
InventoryLevelHistory	CalendarDateID	INT	FK
InventoryLevelHistory	BeginningQuantity	DECIMAL(18,4)	
InventoryLevelHistory	EndingQuantity	DECIMAL(18,4)	
InventoryLevelHistory	QuantityReceived	DECIMAL(18,4)	
InventoryLevelHistory	QuantityShipped	DECIMAL(18,4)	
Calendar	CalendarDateID	INT	PK
Calendar	CalendarDate	DATE	AK
Calendar	CalendarYear	SMALLINT	
Calendar	CalendarQuarter	TINYINT	
Calendar	CalendarMonth	TINYINT	
Calendar	CalendarDay	TINYINT	
Calendar	DayName	NVARCHAR(20)	
Calendar	IsBusinessDay	BIT	
Calendar	IsHoliday	BIT	
PurchaseOrder	PurchaseOrderID	INT	PK
PurchaseOrder	SupplierID	INT	FK
PurchaseOrder	CurrencyID	INT	FK
PurchaseOrder	OrderDateID	INT	FK
PurchaseOrder	PurchaseOrderNumber	NVARCHAR(50)	AK
PurchaseOrder	PurchaseOrderStatus	NVARCHAR(30)	
PurchaseOrderLine	PurchaseOrderLineID	INT	PK
PurchaseOrderLine	PurchaseOrderID	INT	FK
PurchaseOrderLine	ProductID	INT	FK
PurchaseOrderLine	OrderedQuantity	DECIMAL(18,4)	
PurchaseOrderLine	UnitCost	DECIMAL(19,4)	
Receipt	ReceiptID	INT	PK
Receipt	PurchaseOrderID	INT	FK
Receipt	WarehouseID	INT	FK
Receipt	ReceiptDateID	INT	FK
Receipt	ReceiptNumber	NVARCHAR(50)	AK
ReceiptLine	ReceiptLineID	INT	PK
ReceiptLine	ReceiptID	INT	FK
ReceiptLine	ProductID	INT	FK
ReceiptLine	WarehouseBinID	INT	FK

Entity Name	Attribute Name	SQL Server Data Type	Primary or Foreign Key Code
ReceiptLine	ReceivedQuantity	DECIMAL(18,4)	
SalesOrder	SalesOrderID	INT	PK
SalesOrder	CurrencyID	INT	FK
SalesOrder	OrderDateID	INT	FK
SalesOrder	SalesOrderNumber	NVARCHAR(50)	AK
SalesOrder	SalesOrderStatus	NVARCHAR(30)	
SalesOrderLine	SalesOrderLineID	INT	PK
SalesOrderLine	SalesOrderID	INT	FK
SalesOrderLine	ProductID	INT	FK
SalesOrderLine	OrderedQuantity	DECIMAL(18,4)	
SalesOrderLine	UnitPrice	DECIMAL(19,4)	
Shipment	ShipmentID	INT	PK
Shipment	SalesOrderID	INT	FK
Shipment	WarehouseID	INT	FK
Shipment	DestinationAddressID	INT	FK
Shipment	ShipmentDateID	INT	FK
Shipment	ShipmentNumber	NVARCHAR(50)	AK
Shipment	ShipmentStatus	NVARCHAR(30)	
ShipmentLine	ShipmentLineID	INT	PK
ShipmentLine	ShipmentID	INT	FK
ShipmentLine	ProductID	INT	FK
ShipmentLine	ShippedQuantity	DECIMAL(18,4)	

Please refer to the Module attachments for the code to create the database and tables, load all tables, and check the data using a supplied script that contains several analytical queries.

Feel free to enhance the table load script to load more rows.

The database and related scripts were tested on a SQL Server 2022 instance running on a laptop.

To obtain the developer license for SQL Server 2022 and SSMS, use your favorite browser to visit the Microsoft SQL Server download page.