



VAC TRUCK PARTS

Environmental Products & Accessories, LLC.

Product Inventory Database

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Scope

Goal/Objectives: Implement a product inventory management system that tracks inventory levels, costs, supplier information, and sales tracking. It will be used to streamline operations across different departments.

Users: Executives, Operations Manager, Purchasing Department, Sales Department, Warehouse Managers

Key Functionalities

Operations and Executives

- Access comprehensive records of all products, including:
 - Unique tracking identifiers (ProductID).
 - Pricing details.
 - Restocking thresholds and current stock levels.
 - Product descriptions and categories for logical grouping.
- Use organized product data for high-level analysis of trends, performance, and profitability.
- Make strategic decisions based on real-time insights into sales and inventory.

Purchasing Department

- Manage supplier relationships with accurate records, including:
 - Supplier contact details and physical addresses.
 - Performance metrics to evaluate reliability and efficiency.
- Facilitate timely procurement to maintain adequate inventory levels.
- Ensure strong supplier partnerships to support consistent stock availability.

Warehouse Managers

- Monitor inventory levels in real time, with features to:
 - Track stock availability and proactively manage restocking.
 - Record stock updates and reorder thresholds.
 - Avoid shortages by maintaining optimal inventory levels.
- Ensure efficient warehouse operations to meet customer demands.

Sales Department

- Record detailed sales transactions, including:
 - Product quantities sold.
 - Sales prices and total revenue for each transaction.
 - Transaction dates for performance tracking.
- Analyze sales trends to identify high-performing products.
- Collaborate with warehouse managers to:
 - Confirm sufficient stock levels for customer orders.
 - Ensure popular products remain in stock for better customer satisfaction.
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Data Information

Product: ProductID, ProductName, CategoryID, SupplierID, Price, StockLevel, ReorderLevel, ProductDescription

Supplier: SupplierID, SupplierName, ContactName, Phone Number, Email, Address, City, State

Inventory: InventoryID, ProductID, StockLevel, ReorderLevel, LastUpdated

Sales: TransactionID, ProductID, QuantitySold, SalePrice, TransactionDate, TotalAmount

Category: CategoryID, Category Name, CategoryDescription

Constraints & Assumptions

Consistent Product Categories:

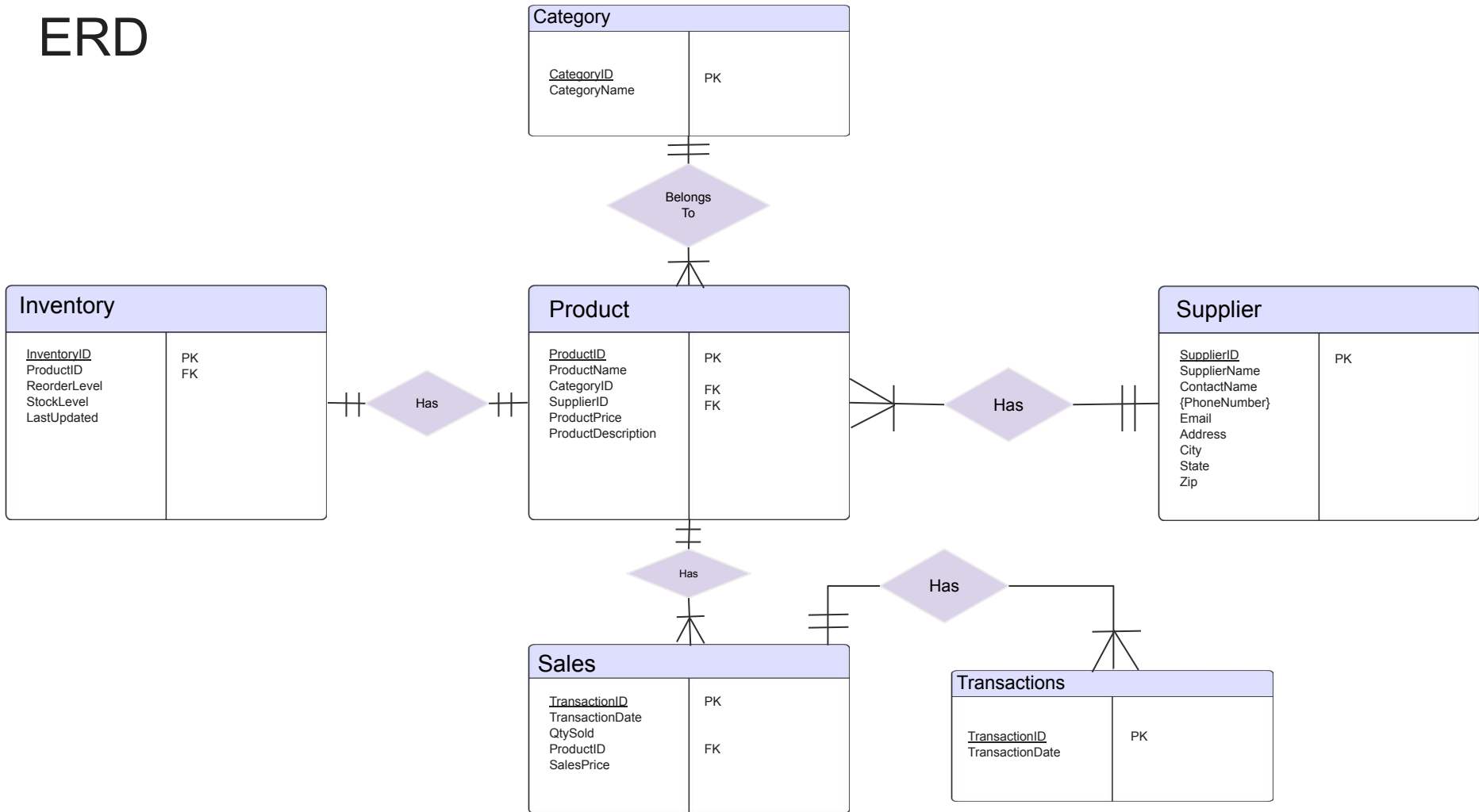
Products will be assigned to one category, and categories remain static unless updated by managers.

Supplier Relationships:

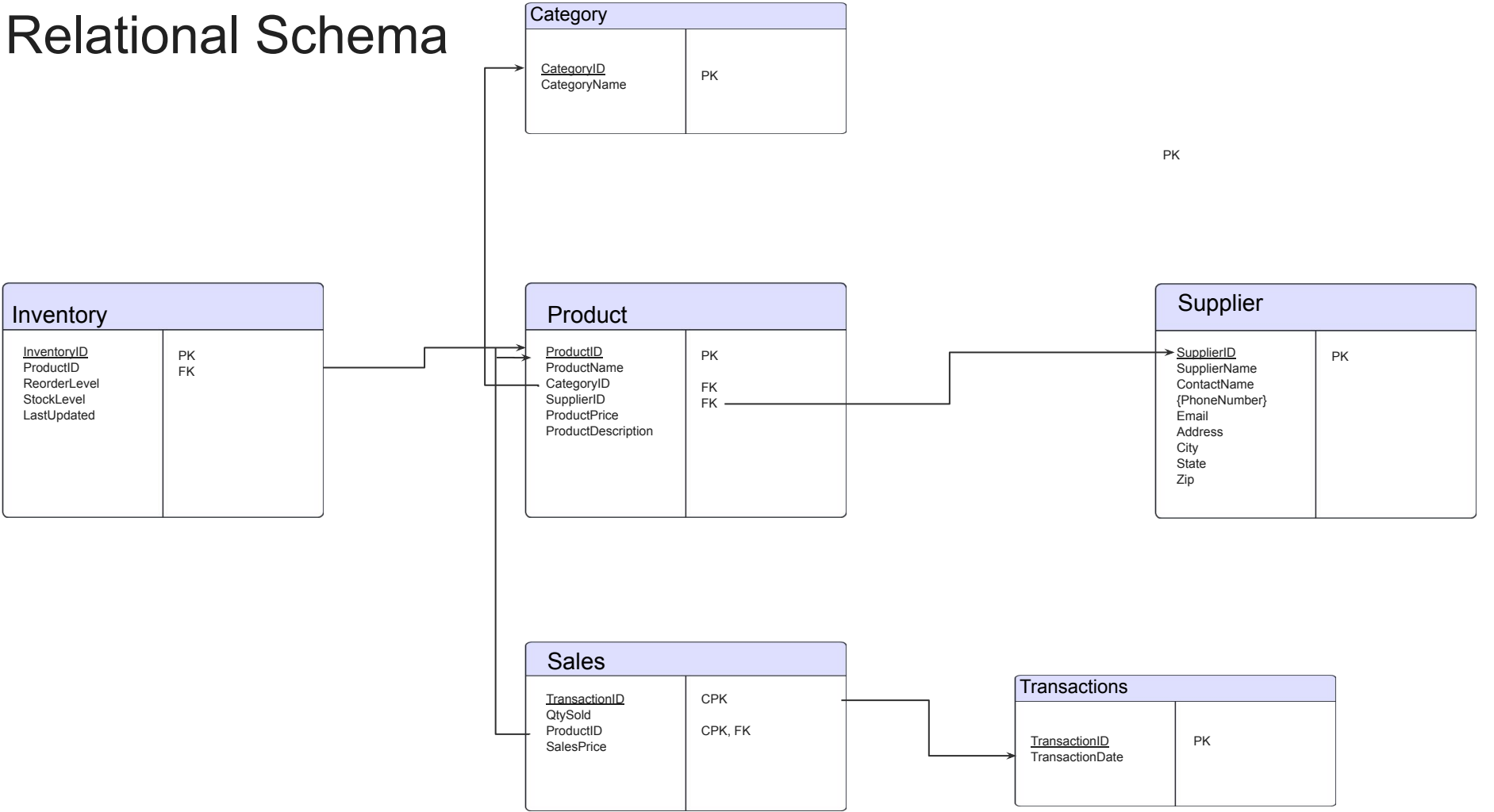
- Each product is sourced from a single supplier.
- Supplier details, such as Address, City, and State, are static and rarely change.

The system does not include advanced warehouse management features, such as bin locations or stock movements within the warehouse.

ERD



Relational Schema



Tables

Supplier

	SupplierID	SupplierName	ContactName	PhoneNumber	Email	Address	City	State	Zip
	S001	North American Pressure Washer Outlet	Alice Smith	1234567890	alice@northamericanpressurewasheroutlet.com	123 Main St	Atlanta	GA	30033
	S002	Hydrovac Store	Bob Brown	2345678901	bob@hydrovacstore.com	456 Broad St	Boston	MA	02118
	S003	Jetter Depot	Clara Jones	3456789012	claraj@jetterdepot.com	789 Elm Ave	Seattle	WA	98039
	S004	Piranha Vendor	Derek Lee	5678901234	derek@piranhavendor.com	101 Industrial Pkwy	Nashville	TN	37214
	S005	Hurco Equipment Co.	Elaine Carter	6789012345	elaine@hurcoequipment.com	222 Equipment St	Denver	CO	80202
	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Product

	ProductID	ProductName	CategoryID	SupplierID	ProductPrice	ProductDescription
	HR-SMK24-LS	Hurco Ripcord Smoker 24	C003	S005	3074.14	Super Smoker, Ripcord24 (Briggs-Motor) uses Liquid Smoke
	HR-SMK18LS	Hurco Ripcord Smoker 18	C003	S005	2154.14	Power Smoker, Ripcord Smoker18 (Briggs-Motor) uses Liquid Smoke
	JHP1225500	3/4" * 500' Orange Piranha 2500 PSI Vendor	C001	S004	1199.84	3/4" Piranha 2500PSI, Male * Male NPT
	JHP1225400	3/4" * 400' Orange Piranha 2500 PSI Vendor	C001	S004	960.84	3/4" Piranha 2500PSI, Male * Male NPT
	H RG0832	8" * 32" Red Gum Vacuum Truck Hose	C002	S002	221.94	8" I.D, 9" O.D. 36" Bend radius. 9.26# per foot
	P AFU0824HD	8" Flange * 8" HydroVac Crown Tube	C002	S002	150.00	8" Flange Heavy Duty Tube (0.125") W/ Hydrovac Crown * 24"
	PW 300680050	1/2" Black Linear Hydroexcavation Gun	C001	S001	100.00	High Flow 32 GPM Straight Rear Entry Spray Gun for Hydro Excavation
	MHRSN	Manhole Roller	C003	S003	99.00	Standard Duty (Angle Iron) with Nylon Roller
	NULL	NULL	NULL	NULL	NULL	NULL

Inventory

	InventoryID	ProductID	StockLevel	ReorderLevel	Location
	I001	PW 300680050	500	100	21
	I002	P AFU0824HD	50000	20000	21
	I003	MHRSN	2500	500	21
	I004	JHP1225400	100	20	21
	I005	JHP1225500	80	15	21
	I006	H RG0832	50	10	21
	I007	HR-SMK18LS	25	5	21
	I008	HR-SMK24-LS	3	5	21
	NULL	NULL	NULL	NULL	H

Transactions

	TransactionID	TransactionDate
	T001	2024-12-01 14:00:00
	T002	2024-12-02 09:15:00
	T003	2024-12-02 14:23:06
	T004	2024-12-05 10:30:00
	T005	2024-12-06 14:15:00
	T006	2024-12-07 16:45:00
	NULL	NULL

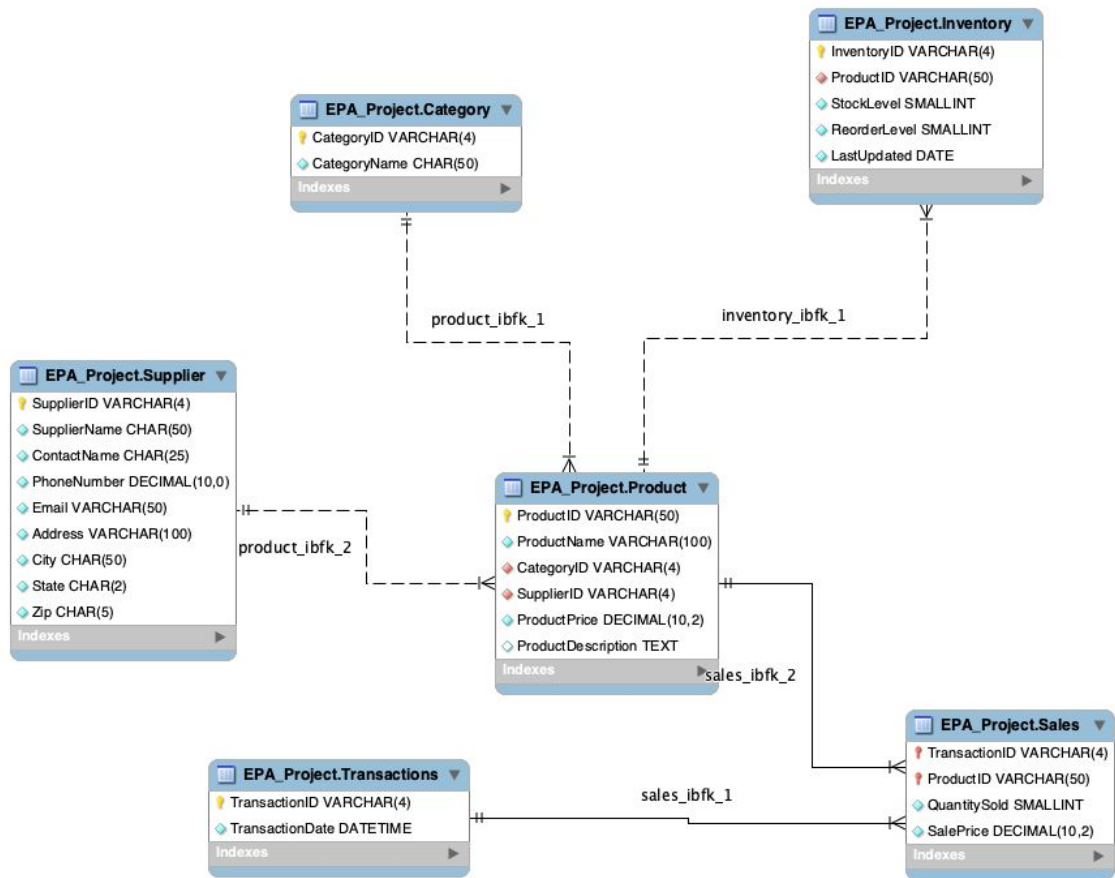
Category

	CategoryID	CategoryName
	C001	Hydroexcavation
	C002	Air Movers
	C003	Confined Spaces
	NULL	NULL

Sales

	TransactionID	ProductID	QuantitySold	SalePrice
	T001	PW 300680050	2	249.84
	T002	MHRSN	5	224.94
	T002	P AFU0824HD	1	349.50
	T003	MHRSN	1	224.94
	T004	H RG0832	2	221.94
	T004	JHP1225400	3	960.84
	T005	HR-SMK18LS	1	2154.14
	T005	JHP1225500	1	1199.84

Relational Schema



Database

Reports

Online Class

- Individual Project
- Case from the real company
- Two or Three Departments in a company (e.g., UTC context: Schools – Register – Student Housing)
- Should have minimum five entities. (e.g., students, departments, class, registration, class-assigned, Housing, faculty, etc.)
- make at least three (fake) records per entity