

Introduction:

The purpose of this database is to serve as a management tool for businesses that serve on an online platform. The database is designed to cater towards growing businesses as well as those that are comfortable at their current size. The data from this system allows businesses to identify specific information such as product purchase trends, redundancies in the supply chain, time-based customer demands, and so on. It also allows for better team management by delineating roles of employees on multiple levels. The overall goal of this database is to deepen understanding of the products being sold and their relationship with customers and suppliers, and in turn allow for better cost, profit, and productivity management.

Description of business problems:

Understanding which products are purchased together.

Predicting future likelihood of a customer purchasing a product.

Minimizing potential of products being lost – inventory access and tracking.

Minimizing inaccurate purchase orders.

Establishing a better balance between overstock and stockout.

Better operation cost management – identifying opportunities to maximize profits.

Improving time management by minimizing order/return fulfillment delays.

Increasing employee satisfaction with better communication and management system.

Developing clear responsibilities of employees in the warehouse.

Identification of redundant processes that could save time and money – streamlined approach.

Ability to meet customer needs by diversifying products and eliminating unpopular products.

Understanding time-based changes in customer demands.

Developing effective methods of communication between warehouses.

Key design decisions:

The **product** entity allows for identification of every product's specification in the warehouse.

The **warehouse product** entity specifies the type and quantity of products in different warehouses.

The **customer order** entity establishes a relationship between the customer information and product ID and the specifics required to fulfill the customer's order.

The **order detail** entity establishes a relationship between the storage information (warehouse product entity) and the details of an order (customer order entity).

The **website customer account** entity stores the information regarding the customer to facilitate their order placements.

The **shipping record** entity includes all the information necessary to send a product to the customer.

The **shipping task** entity assigns a particular order's shipping duties to an employee.

The **return** entity stores the information regarding a product return made by a customer.

The **warehouse** entity includes information about all the different warehouses and the employees who work there.

The **employee info** entity stores the information regarding each employee to delineate their roles and manage their responsibilities and payments.

The **employee salary** entity informs the compensation an employee requires based on their duties.

The **employee reimbursement** entity includes the information required for the business to compensate any company expenses covered by an employee's own funds.

The **employee direct deposit** entity monitors the payments made to employees by the business.

The **supplies** entity stores the information regarding each supplier that works with the company.

The **supplies product detail** entity establishes a relationship between the products (product entity) and the suppliers (supplies entity).

The **revenue** entity allows for calculation of the total revenue made based on items sold and their cost vs expenditure.

Business Rules:

Each Customer will have one or many Orders.

Each Order will have zero or many Returns.

Each Revenue will have zero or many Orders.

Each Order must have one Shipping Task.

Each Order must have one Order Detail.

Each Order Detail will have one or many Warehouse Products.

Each Return must have one Warehouse Product.

Each Employee Salary Record will have zero or many Revenues.

Each Warehouse will have one or more Warehouse Products.

Each Employee will stay in one or many Warehouses.

Each Employee will have one or many Records of Employee Direct Deposit.

Each Employee will have zero or many Employee Reimbursements.

Each Employee will have one Employee Salary.

Each Employee will have zero or many Shipping Task.

Each Shipping Task will have one Shipping Record.

Each Warehouse Product will have one or many Products.

Each Product will have one or many Supplies Product Details.

Each Product will only be stored in one Warehouse.

Supplies will have one or many Supplies Product Details.

Supplies action date should be recorded in supplies action date.

Entities and Attributes:

Entity	Key Attributes	General Attributes
Website Customer Account	CustomerID{PK}	Password, CustomerEmailAddress, CustomerLastName
Customer Order	OrderID{PK}, CustomerID{FK}, RevenueID{FK}	BillingStreetAddress, BillingAddressCity, BillingAddressState, BillingAddressZipcode, ShippingStreetAddress, ShippingStreetAddress, ShippingAddressCity, ShippingAddressState, ShippingAddressZipcode, TrackingNumber, OrderDate, TotalPrice, ShippingMethods
Return	ReturnID{PK}, OrderID{FK}, ProductID{FK}	ReturnDate, ReturnPrice
Revenue	RevenueID{PK}, EmployeeSalaryID{FK}	Tax, TotalRevenue, Date
Order Detail	OrderDetailID{PK}, OrderID{FK}, ProductID{FK}	NULL
Shipping Task	TaskID{PK}, OrderID{FK}, EmployeeID{FK}, TrackingNumber{FK}	NULL
Shipping Record	TrackingNumber{PK}	ShippingMethod, PackageWeight, ShippingName, Street, City, State, Zipcode, ShippingDate
Warehouse Product	WarehouseID{PK,FK}, ProductID{PK, FK}	ProductQuantity, ProductName
Warehouse	WarehouseID{PK}, EmployeeID{FK}	StreetAddress, City, State, Zipcode
Employee Info	EmployeeID{PK}	EmployeeFirst Name, EmployeeMiddle Name, EmployeeLast Name, PhoneNumber,

		SickDays, VacationDays, JoininDate, Designation/Leave Date, EmployeeTitle, SSN, EmployeeEmail Address, ManagerID, EmployeeChecking/SavingAcco unt Number
Employee Salary	EmployeeSalaryID{PK}, EmployeeID{FK}, RevenueID{FK}	BaseSalary, Bonus, TotalSalary
Product	ProductID{PK}	ProductName, ProductColor, ProductMaterial, ProductPrice, ProductImage, WebsiteLink
Employee Reimbursement	ReimbursementID{PK}, EmployeeID{FK}	Reimbursement Description, Price, ReceiptInfo, DateforReceipt, DepositDate
Employee Direct Deposit	EmployeeID{PK}, DepositDate{PK}	DepositAmount
Supplies Product Detail	SuppliesProductID{PK}, SupplierID{FK}, ProductID{FK}	SupplyDate
Supplies	SupplierID{PK}	SupplierName, SupplierStreetAddress, SupplierCity, SupplierState, SupplierZipcode, SupplierContactInfo