

Database Boys

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Constraints

Business Constraints (This would be things that are part of our rules such as suppliers provide the product to vendors. Vendors provide products to customers. Customers can choose a product for different reasons not just lowest cost. Vendors must have product on-hand to sell the product.)

- Each type of product has one supplier.
- Suppliers provide products to vendors.
- Different vendors can sell the same product.
- Vendors need to keep track of their quantity on hand.
- Vendors need to calculate how many products are sold and subtract it from the quantity of items in stock.
- Vendors need to buy more products from suppliers if their item supplies get too low.
- The same product can be sold at different prices depending on the vendor.
- The customer can't buy more items than what the vendor has on hand.
- Customers go online to view products available for purchase, and can place orders that will have one or more products in them. Those products are placed in a shopping cart.
- Customers can't add the same item to their shopping cart more than once, but they can increase the quantity of each item they purchase.
- Customers can purchase any quantity of items they'd like, but they can't purchase more than what the vendor has in supply.
- Customers can purchase multiple products from different vendors.
- The customer can make multiple purchases every day.
- If the customer makes multiple orders they are able to order the same product and quantities as before.
- The online shopping cart should calculate the subtotal of the products in the order.
- Then a sales tax is calculated based on the subtotal and customer's state.
- The total should then be calculated and shown to the customer.
- Shipping cost will be based by penny per mile traveled from vendor to customer.

Data Constraints (Example would be phone numbers have 10 digits, Email addresses have an @ symbol and a .com or .edu etc)

- sdXXXXXX_Id values must be an integer value where XXXXXX is the table name.
- Email addresses must contain an @ symbol and have .com, .net, .org, .gov, .co, .us
- Street addresses can be up to 255 characters long.
- Cities can be up to 50 characters long.
- States must be abbreviated to 2 characters long and capitalized.
- Zip codes are a minimum of 5 characters but can be up to 9 characters long and only numbers.
- Phone numbers must be either 9 or 10 characters long and be only numbers.
- Customer first and last name can be up to 50 characters long.
- supplierName, vendorName, productName may only be up to 255 characters long.
- orderDateTime must be entered containing the date and time.
- subTotal, taxAmount, shippingCost, orderTotal, vendorProductPrice must be a monetary value (the data type for each will be smallMoney).
- productDescription can have the maximum number of characters supported by the database.
- quantity must be a small integer value.
- quantityOnHand must be an integer value.

Null Values (Each NOT NULL constraint need not be listed. Since "NULL" is the exception, only list those.)

OrderTable:

- subTotal
- taxAmount
- shippingCost
- orderTotal

Vendor Table:

- vendor Phone

Product Table:

- ProductDescription

Supplier Table:

- supplierEmail
- supplierPhone
- supplierStreetAddress
- supplierCity
- supplierState
- supplierZip

Unique Constraints (The alternate keys)

- Customer's email address: Customer Table
- OrderDateTime & customerID: Order Table
- VendorName: Vendor Table
- ProductName: Product Table
- SupplierName: Supplier Table