VineyardTrading Co.

Database Design Project

Project by:
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The list of normalized relations (the logical design) and the attributes in each table and an indication of the primary and foreign keys.

Example: StudentTbl (StudentNumber, LastName, FirstName, Major, GPA, YearInSchool)

If your design does not support full functional dependency, please include an explanation.f

Logical Design

1. ProductTbl (ProductID [PK], SKU, ProductName, Category, Subcategory, UnitCost)
   - Tracks both wines and complementary products (food items).

   - ProductsWines(**WineID** ,WhineName , VintageYear, LegalRequirement,Category,AlcoholPercentage , *GrapeVarietyID* ,*EmployeeID*)
   - ProductFood(**FoodID** , Quantity)
     - FoodCheese(CheeseType , CheeseColor, CheeseAge)
     - FoodGrain(GrainType , GrainColor, harvestedDate)
     - FoodMeat(Meattype , Useby ,StorageCondition)

2.GrapeVarietyTbl (**GrapeVarietyID** , VarietyName , JuiceConversionRatio ,WineStorageRequirement , WineAgingRequirement)

3.OrderItems (**OrderItemID ,** Quantity, *OrderID* , *ProdectID)*

4. OrderTbl (OrderID ,OrderDate, ShipmentStatus, *CustomerID*)
   - Records of customer orders.

5. CustomerTbl (CustomerID , Address, City, State, Zip, Email, Phone .)
   - IndividualCustomerTbl(FirstName,LastName,DateOfBirth)
   - WhosaleCustomerTbl(CompanyName,TaxID,ResaleLicence)
     - Details about individual and wholesale customers

6.PaymentsTbl(**PaymentID ,** PaymentDate , Amount, *CustomerID)*

- PaymentCottage(**ReservationID**, ReservationType, Date)
- RoomReservation(**RoomID** ,ReservationDate,CheckinDate,CheckoutDate)
- MeetingRoom(**MeetingRoomID** ,RoomNumber , roomType)
- PaymentOrders(**OrderID** , OrderDate, OrderType , *PaymentID*)
- PaymentEvent(**EventID** , Type)
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7. PurchaseOrder(**OrderID** , OrderDate , OrderReceivedDate , ChargedPrice)

8. OrderTracking(**OrderedQuantity** , ReceivdQuantity , ShippingInfo)

9. Vendor(**VendorID** , Name , Address ,phone , PrimaryContact)

10. EmployeeTbl (EmployeeID , LastName, FirstName, Position, CertificationLevel, CertificationDate, RecertificationOutcome, TIPSCertified, CDL, CDLExpirationDate)
    - Details on employees, including certifications and roles.

11. VineyardTbl (VineyardID , VineyardName, Location, SizeInAcres, OwnedBy)
    - Information on each vineyard plot.

12. WineTbl (**WineID** , WineName, VintageYear, Category, AlcoholPercentage, *EmployeeID*)
    - Details about each wine produced.

13. WineCompositionTbl (**WineID** [PK, FK], **GrapeVarietyID** [PK, FK], Proportion)
    - The composition of wines from different grape varieties.

14. BottledTbl (**BottleID** , Capacity , shape , GlassColor , PricePerUnit)

15. ineyardTbl(**VineYardID** , VineyardName , Location , SizeinAcres ,OwnedBy)

A data dictionary categorized by table (a list of attributes with the data types and length defined for each).

ProductTbl
- ProductID: Integer
- SKU: Char/Text/String, 20
- ProductName: Char/Text/String, 100
- Category: Char/Text/String, 50
- Subcategory: Char/Text/String, 50
- UnitCost: Decimal, Precision: 10, Scale: 2

EmployeeTbl
- EmployeeID: Integer
- LastName: Char/Text/String, 50
- FirstName: Char/Text/String, 50
- Position: Char/Text/String, 100
- CertificationLevel: Char/Text/String, 50
- CertificationDate: Date, mm/dd/yyyy
- RecertificationOutcome: Char/Text/String, 50
- TIPSCertified: Boolean
- CDL: Char/Text/String, 20
- CDLExpirationDate: Date, mm/dd/yyyy

VineyardTbl
- VineyardID: Integer
- VineyardName: Char/Text/String, 100
- Location: Char/Text/String, 100
- SizeInAcres: Decimal, Precision: 10, Scale: 2
- OwnedBy: Char/Text/String, 100

GrapeVarietyTbl
- GrapeVarietyID: Integer
- VarietyName: Char/Text/String, 50
- JuiceConversionRatio: Decimal, Precision: 5, Scale: 3
- WineStorageRequirement: Char/Text/String, 50
- WineAgingRequirement: Integer, Number of months

WineTbl
- WineID: Integer
- WineName: Char/Text/String, 100
- VintageYear: Integer, 4 digits
- Category: Char/Text/String, 50
- AlcoholPercentage: Decimal, Precision: 5, Scale: 2
- *EmployeeID: Integer (FK)*

WineCompositionTbl
WineID: Integer (FK)
GrapeVarietyID: Integer (FK)
Proportion: Decimal, Precision: 5, Scale: 3

CustomerTbl
CustomerID: Integer
FirstName: Char/Text/String, 50
LastName: Char/Text/String, 50
Address: Char/Text/String, 100
City: Char/Text/String, 50
State: Char/Text/String, 2
Zip: Char/Text/String, 10
Email: Char/Text/String, 100
Phone: Char/Text/String, 15
CustomerType: Char, 1 ('I' for Individual, 'B' for Business)

OrderTbl
OrderID: Integer
CustomerID: Integer (FK)
OrderDate: Date, mm/dd/yyyy
ShipmentStatus: Char/Text/String, 50

OrderItemTbl
OrderItemID: Integer
OrderID: Integer (FK)
ProductID: Integer (FK)
Quantity: Integer

EventTbl
EventID: Integer
CustomerID: Integer (FK)
EventType: Char/Text/String, 50
EventDate: Date, mm/dd/yyyy
ReservationID: Integer (FK)

A list of attributes that are candidates for domain enforcement and the domains for at least 2 attributes.

Candidates for Domain Enforcement

ProductType in ProductTbl (Wine or Food)
CustomerType in CustomerTbl (Individual or Business)
ShipmentStatus in OrderTbl (Pending, Shipped, Cancelled)

EventType in EventTbl (Tasting, Wedding, Corporate, Private)
AlcoholPercentage in WineTbl (Range: 0.00% to 20.00%)
TIPSCertified in EmployeeTbl (True or False)
Zip in CustomerTbl (U.S. ZIP Code format)

Domain Specifications for Selected Attributes

1. CustomerType in CustomerTbl

Domain: {'I', 'B'}
Description: This attribute specifies the type of customer. 'I' stands for Individual, and 'B' stands for Business. This domain enforcement ensures that each customer record identifies whether the customer is purchasing for personal use or on behalf of a business.

2. ShipmentStatus in OrderTbl

Domain: {'Pending', 'Shipped', 'Cancelled'}
Description: This attribute indicates the current status of an order. It can take one of three values: 'Pending' indicates that the order is processed but not yet shipped; 'Shipped' indicates that the order has been dispatched; 'Cancelled' indicates that the order has been cancelled. Enforcing this domain helps in tracking the order fulfilment process accurately.