Thomas Wolf

CPT242 – H02

Vince's Vinyl Database

**Documentation for Vince's Vinyl Database Management System**

# Note 1

Date: August 27, 2023

**Major Topics for the Database**

1. Inventory Management

* Record Identification Number
* Type of Record (45 RPM, 33 1/3 RPM, 78 RPM)
* Artist Name
* Album Title
* Musical Genre
* Physical Condition
* Initial Purchase Price
* Recommended Selling Price
* Current Inventory Level

2. Purchase History

* Purchase Identification Number
* Associated Record Identification Number
* Vendor Type (Customer, Yard Sale, Discount Store)
* Vendor Specific Information
* Date of Purchase
* Acquisition Cost

3. Sales Tracking

* Sales Identification Number
* Related Record Identification Number
* Customer Identification Number
* Transaction Date
* Finalized Selling Price

4. Customer Management

* Customer Identification Number
* Full Name
* Email Address
* Contact Telephone Number
* Preferred Musical Genre and/or Artist
* Historical Purchase Records

5. Special Requests

* Special Request Identification Number
* Associated Customer Identification Number
* Request Specifics (Artist, Album, Genre)
* Request Initiation Date
* Status (Fulfilled, Unfulfilled)

6. Email Notifications

* Email List of Subscribers
* Announcements of New Inventory Arrivals
* Promotional Special Offers
* Customer Musical Preferences

**Draft Statement of Work**

Brief History:

Vince's Vinyl is a retail establishment specializing in both vintage and contemporary vinyl records. Owned and administered by Vince Roberts, the enterprise has achieved sustained success over multiple years. Recent upticks in consumer activity have rendered the existing manual inventory system increasingly untenable.

Scope:

This project encompasses the design and implementation of a database system tailored to facilitate Inventory Management, Purchase History, Sales Tracking, Customer Management, Special Requests, and Email Notifications.

Objectives:

1. To engineer a comprehensive system for managing inventory.
2. To systematically archive records pertaining to purchase transactions and their respective origins.
3. To monitor sales activity and correlate it with extant inventory and customer data.
4. To efficiently manage customer-related data, including special request functionalities.
5. To establish a curated email list aimed at customer-specific notifications.
6. To establish a foundational structure amenable to future digital expansions.

Preliminary Timeline:

* Week 1: Initial consultation and selection of technological solutions.
* Weeks 2-3: Design of the database schema.
* Weeks 4-5: Development of the database structure.
* Week 6: Importation of existing data.
* Weeks 7-8: Development of the user interface.
* Week 9: Preliminary system testing.
* Week 10: Implementation of system adjustments and improvements.
* Week 11: Secondary round of system testing.
* Weeks 12-13: Staff orientation and system handover.
* Week 14: Soft-launch and ongoing monitoring.
* Week 15: Final evaluation and project termination.

# Note 2

Date: September 3, 2023

1. Questions Arising from Vince's Existing Notebook Entries

* What formal criteria, if any, are employed to determine the physical condition of vinyl albums?
* Is vendor contact information systematically stored?
* Is the cost of acquisition documented consistently for each album?
* What existing methods are in place to track customer special requests?
* Is there a current system for documenting which albums are sold to which customers?
* How is the final selling price determined? Is it primarily experiential or are other market factors involved?
* Are inventory levels monitored through a particular method?

2. Stakeholder Identification in Vince's Record Store Operations

* Vince Roberts, Owner and Operator
* Employees, if applicable
* Customer Base
* Supply Vendors, including Yard Sales and Discount Stores
* Regulatory Authorities for Business Licenses and Compliance
* Subscribers to Email Notifications

3. Preparatory Interview Questions for Key Participants

**Questions for Vince Roberts:**

* Could you delineate the daily operational workflow of your store?
* What challenges do you encounter with your current manual record-keeping system?
* Are there any specific functionalities you wish to see in a new database system?
* Do you have aesthetic or operational preferences for the user interface?

**Questions for a Dual-role Customer (Seller and Buyer):**

* How would you evaluate the ease of your transaction experience when selling to Vince?
* Does Vince's Vinyl adequately cater to your musical interests?
* Do you have any suggestions for process improvements?

**Questions for a Predominantly Buying Customer:**

* What aspects of Vince's Vinyl attract you as a customer?
* Are there any customer-centric features, such as a special request system, that you'd like to see implemented?
* What is your preferred channel for receiving updates on new arrivals or special promotions.

4. Questionnaire for Vinyl Suppliers to Vince

1. How would you rate the ease of your selling experience with Vince's Vinyl on a scale from 1 to 10?
2. What elements of the current process do you find beneficial?
3. Are there aspects of the current process that you find cumbersome or challenging?
4. Would you appreciate a digital medium for monitoring the status of your transactions?
5. Are there additional features that would facilitate a smoother selling process for you.

5. Observations from Job Shadowing and Further Questions

**Identified Exceptions:**

* Conditional refusal to purchase albums based on their physical quality.
* Pricing negotiations occur during customer transactions, deviating from listed prices.
* Immediate evaluations and pricing decisions for albums are made based on Vince’s expert judgment.

**Additional Business Rules:**

* Vinyl albums must meet a pre-defined standard of quality to be considered for purchase.
* Selling prices are subject to change, especially in multi-item transactions.
* Vince accommodates special requests for specific albums, with notifications issued upon availability.

**Additional Questions Raised:**

* Is there a formal procedure for recording negotiated prices?
* What is the current method for managing and tracking special customer requests?
* How are exceptions like conditional purchases and price adjustments managed in the existing manual system?

# Note 3

Date: September 10, 2023

1. Issues with the Current System:

* Inconsistent and manual tracking of physical condition for each vinyl album.
* Lack of formal storage for vendor contact information.
* Inconsistencies in documenting acquisition cost.
* No systematic way to handle customer special requests.
* No formal mechanism to document which albums are sold to which customers.
* Subjective and potentially volatile pricing system.
* Manual tracking of inventory levels makes the process error-prone and time-consuming.

2. Database Requirements for Each Stakeholder:

* **Vince Roberts, Owner and Operator**
  + Comprehensive inventory management.
  + Purchase and sales history tracking.
  + Customer management, including special request functionalities.
* **Employees**
  + Easy-to-use interface for inventory and customer management.
  + Sales tracking capabilities.
* **Customer Base**
  + Access to their purchase history.
  + Special request system.
  + Email notifications for new arrivals and offers based on preferences.
* **Supply Vendors**
  + Detailed digital record of transactions.
  + Streamlined method to communicate the status of transactions.
* **Regulatory Authorities**
  + Compliant storage of transactional data and business operations.
* **Email Subscribers**
  + Customized notifications based on musical interests.

3. Business Rules:

* Vinyl albums must meet a pre-defined standard of quality to be considered for purchase.
* Selling prices are subject to change and can be negotiated.
* Special requests by customers must be accommodated and notifications sent upon availability.

4. Major Security Rules for the Database:

* Access control based on roles (Owner, Employees, Customers, Vendors).
* Data encryption for sensitive information such as customer details and transaction histories.
* Regular data backups.
* Compliance with GDPR or relevant data protection laws for customer data.

5. Preliminary Entities and Attributes:

**Entities:**

* Inventory
* PurchaseHistory
* SalesTracking
* Customer
* SpecialRequests
* EmailNotifications

**Attributes:**

*For Inventory:*

* Record Identification Number
* Type of Record
* Artist Name
* Album Title
* Musical Genre
* Physical Condition
* Initial Purchase Price
* Recommended Selling Price
* Current Inventory Level

*For PurchaseHistory:*

* Purchase Identification Number
* Vendor Type
* Vendor Specific Information
* Date of Purchase
* Acquisition Cost

6. Candidate Keys:

* Record Identification Number for Inventory
* Purchase Identification Number for PurchaseHistory
* Sales Identification Number for SalesTracking
* Customer Identification Number for Customer
* Special Request Identification Number for SpecialRequests

# Note 4

Date: September 17, 2023

1. Define Your Entities and Attributes and the Relations:
   * **Customer Entity:**
     + Attributes: CustomerKey (Primary Key), CustomerFirst, CustomerLast, CustomerEmail, CustomerPhone
     + Links to Request and Sale
   * **Request Entity:**
     + Attributes: RequestKey (Primary Key), RequestTitle, RequestDate, RequestStatus
     + Links to Customer
   * **Sales Entity:**
     + Attributes: SaleKey (Primary Key), SaleDate
     + Links to Customer and SaleDetail
   * **SaleDetails Entity:**
     + Attributes: SaleDetailKey (Primary Key), SaleDetailPrice
     + Relations: Connects Sales and Album entities (Foreign Keys to Sales and Album)
     + Links to Sale and Album
   * **Album Entity:**
     + Attributes: AlbumKey (Primary Key), AlbumDate, AlbumSuggestedPrice, AlbumCondition
     + LT Artist
   * **Artist Entity:**
     + Attributes: ArtistKey (Primary Key), ArtistName
   * **Sellers Entity:**
     + Attributes: SettersKey (Primary Key), SellerFirst, SellerLast, SellerEmail, SellerPhone
     + LT Purchase and Album
   * **Purchase Entity:**
     + Attributes: PurchaseKey (Primary Key), Purchase date
2. Create a Logical Model:

A diagram of a data flow

Description automatically generated

* **Domain Entities**: Customer, Request, Sales, Sales Details, Album, Artists, Sellers, Purchase
* **Linking Entities**: Album Linking Table and Purchase Linking Table
* **Lookup Entities**: None
* **Weak Entities**: None

# Note 5

Date: September 24, 2023

1. Change the diagram:

A diagram of a data flow

Description automatically generated

1. Document your changes:

There were no changes made, the erd is already in third normalized form.

1. Review the normalized diagram for completeness.

From the review of the previous weeks work I would say that this erd is complete.