**Part 1. Conceptual Design**

# Description

**Database Project**

**Conceptual Data Model**

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Grand Vineyard Trading Company seeks to overcome manual record-keeping challenges across its winery and trading operations by implementing a robust database system. This system will streamline processes related to product management, personnel administration, vineyard oversight, wine production, customer interactions, and marketing endeavors. By automating inventory tracking, order management, employee data handling, customer preferences analysis, and event coordination, the company aims to boost operational efficiency and elevate its customer relationship management capabilities.

## Business Overview:

* Pete and Sue Anderson established GVTC in 2018, focusing on grape cultivation and specialty wine production for export.
* Initially started with 25 acres of grape-growing land, expanded gradually, and diversified their product offerings.

## Current System Challenges:

* Inherited an outdated accounting system, relying on manual operations and Excel spreadsheets.
* Limited capability for vineyard and export management.
* Considering automation to overcome limitations, evaluated ERP systems like VinoTEC.

## Products/Services:

* GVTC sells self-made wines and complementary products (meat, cheese).
* Each product has a unique SKU, categorized by type (Wine or Food) and subcategories.
* Added "Winery Cottage" for short-term VRBO-style rentals and events.

## Vineyard Holdings and Grape Varieties:

* GVTC sources from ten vineyard plots with unique names, managed by one or two employees.
* Vineyards dedicated to a single grape variety per vintage but may be replanted based on market demand.
* Cultivates seven grape varieties, each with specific attributes like juice conversion ratio, storage, and aging requirements.

## Wine Products and Bottles:

* Each wine has a unique ID, vintage year, category, percent alcohol, and an employee in charge.
* Composition may be single or blended grape varieties.
* Wines sold by the case, labeled by grape varieties.
* Bottles vary in capacity, shape, color, with recorded unit cost per bottle.

## Customers:

* Several thousand customers, including visitors, shops, restaurants, and distributors.
* Need to track guests, especially those attending events and using VRBO cottage.
* Individual and business customers have unique IDs, with recorded details like address, contact, and legal age verification.
* Marketing campaign tracking for customer acquisition.
* Membership tracking for the wine club, including subscription details.

## System Requirements:

* Database to track employee information, excluding payroll handled externally.
* Inventory tracking for corks, labels, and packing boxes not required.
* Goal is to streamline record-keeping, allowing more focus on wine production, customer management, and marketing.

# Conceptual (ERD) design diagram Assumptions

* 1. It is assumed that the database will include authentication and authorization mechanisms to control access to sensitive data.
  2. It is assumed the existence of tables to track inventory levels for both products and packaging materials.
  3. It is assumed the inclusion of tables to manage reservations and bookings for events at the Winery Cottage.
  4. It is assumed that there is a need for tables to track payments, including payment types and transaction details.
  5. It is assumed that the implementation of tables to manage wine club memberships includes membership status and subscription details.
  6. It is assumed the inclusion of tables to track marketing campaign effectiveness, including campaign types and associated metrics.
  7. It is assumed the implementation of tables to track employee training and certification records.
  8. It is assumed that Customers can either be individual or Wholesaler but cannot be both at a given instance
  9. It is assumed that driver is considered as full-time employee