# Bacchus Winery Case Study

#### **Group Introduction**

##### **Jelani Jenkins**

*My name is Jelani Jenkins, and I have over 20 years of experience in the IT industry, specializing in Managed Services and Software Development. Currently, I’m the lead DevOps Principal Engineer at my company. My role involves developing and implementing innovative solutions to automate critical functions and processes*

##### **Clint Scott**

*With nearly three decades of experience in IT, I am currently working as an Infrastructure Engineer. My technical foundation includes extensive knowledge of system administration, network infrastructure, and scripting with tools such as PowerShell and now Python too! I am methodical in my problem-solving approach and enjoy delving into the details to find efficient, scalable solutions.*

We worked closely on this assignment, utilizing our combined experience to design, implement, and refine the database structure, Python scripts, and business reports. Our collaboration ensured a thorough approach aligned with the winery's modernization goals.

#### **Bacchus Winery Case Study Summary**

Bacchus Winery is a family-owned vineyard and wine production business run by brothers Stan and Davis Bacchus, who took control three years ago after their father’s retirement. The winery produces four varieties of wine: Merlot, Cabernet, Chablis, and Chardonnay. They source bottles, labels, and production materials from three different suppliers. The company's organizational structure includes departments such as Finance, Marketing, Production, and Distribution, each overseen by experienced professionals.

Initially, the brothers retained the existing team but shifted their focus to modernizing operations. Their goals include implementing more efficient systems for inventory tracking, enabling online ordering and shipment tracking for distributors, and improving the management of employee hours and payroll. In preparation for their upcoming annual business review, they seek better tools to analyze supplier reliability, wine sales performance by distributor, and labor utilization throughout the year. These enhancements aim to facilitate more informed, data-driven decision-making processes and improve operational efficiency.

#### **Finalized Bacchus Winery ERD**

A diagram of a company

AI-generated content may be incorrect.

###### Relationships

* Employee and EmployeeHours
  + One Employee can have many records quarterly in EmployeeHours (1:M).
* Department and Employee
  + Each Employee belongs to only one Department (1:1).
* Supplier and SupplyShipment
  + One Supplier can have many SupplyShipments (1:M).
* SupplyType and SupplyShipment
  + SupplyShiptment contains one SupplyType (1:1).
* SupplyType and SupplyInventory
  + SupplyType has one entry in the SupplyInventory to track QuantityOnHand (1:1).
* Distributor and WineOrders
  + One Distributor can deliver many WineOrders (1:M).
* Wine and WineOrders
  + WineOrders can include many Wine types (1:M).
* Wine and WineInventory
  + One Wine has one entry in the WineInventory to track its QuantityOnHand (1:1).

#### **Bacchus Winery Business Reports**

#### The following Bacchus Winery business reports were generated using a custom Python script that connects to the Bacchus Winery database. The script executes SQL queries and writes the results to individual text files. These reports provide valuable information about wine orders, supply inventory, and employee workload, aiding decision-making. Following each description, you will find screenshots of the output for each report.

##### **First Report: Pending Wine Orders**

The initial report lists all wine orders with a **Pending** status. It includes details such as the distributor's name, the wine ordered, the quantity, and the order date. This system helps the winery monitor outstanding orders that require follow-up or prioritization.

**Filename:** bacchus\_pending\_wine\_report.txt  
**Query Criteria:** Orders where OrderStatus = 'Pending'  
**Fields Included:** Distributor Name, Wine Name, Quantity, Order Date

###### Screenshot of Python code snippet for Pending Wine Orders:

A screen shot of a computer

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###### Screenshot of output for Pending Wine Orders:

A close up of black text

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##### **Second Report: Low Supply Inventory**

The second report highlights inventory items with fewer than **100 units on hand**, aiding management in reordering supplies proactively before depletion. Each item includes the supply type and its current quantity.

**Filename:** bacchus\_low\_supply\_inventory\_report.txt  
**Query Criteria:** Inventory where QuantityOnHand < 100  
**Fields Included:** Supply Description, Quantity On Hand

###### Screenshot of Python code snippet for Low Supply Inventory:A computer screen with text AI-generated content may be incorrect.

###### Screenshot of output for Low Supply Inventory:

A close up of words

AI-generated content may be incorrect.

##### **Third Report: Employee Weekly Hours**

The third report summarizes employee **hours worked** **weekly**. The application assists with workforce planning and payroll management and analyzes trends in employee utilization.

Filename: bacchus\_employee\_weekly\_hours\_report.txt

Query Criteria: All weekly entries from the EmployeeHours table

Fields Included: Employee Name, Week, Hours Worked

###### Screenshot of Python code snippet for Employee Weekly Hours::

A computer screen with many colorful text

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###### Screenshot of output for Employee Weekly Hours:

A screenshot of a computer

AI-generated content may be incorrect.

#### **Bacchus Winery Assumptions**

* Each shipment has an expected delivery date and an actual delivery timestamp. This information allows for monthly reporting and analysis of delays or inconsistencies.
* Supplies, including bottles, corks, labels, boxes, vats, and tubing, are categorized by type and supplier to facilitate inventory tracking and reorder management.
* The organization manages its wine inventory through meticulous logging and tracking of sales data, which is categorized by wine type and distributor. This systematic approach enables comprehensive performance evaluation, supporting informed decision-making at product and partner levels.
* Distribution operations help identify which distributors carry specific wines and enable the possibility of online ordering and shipment tracking.
* Employees across all departments have their hours recorded through a digital time-tracking system or via consistent manual entry. This practice allows for quarterly reporting of individual and departmental labor usage.
* Each department, Finance, Marketing, Production, and Distribution, operates according to clearly defined roles. The activities of these departments can be systematically logged and measured to facilitate operational reporting.
* Stan and Davis have access to centralized business data and are looking to digitize or automate existing manual processes. The goal of this initiative is to enhance timely reporting and decision-making.