

BACCHUS WINERY

Course: Case Study Project

Prepared By:

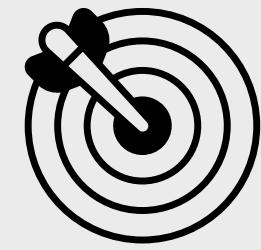
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Objective

Design a database for Bacchus Winery to manage suppliers, wine shipments, and employee



Goals

- Track supplier performance (on-time deliveries, quantity delivered)
- Track wine distribution and sales
- Track employee time across quarters



Key Entities

- Suppliers & Supply Deliveries
- Wines & Wine Shipments
- Distributors
- Employees & Time Entries

SIGNATURE
WINE



Suppliers & Supply Deliveries



- Each supplier has a unique ID and name.
- Each supply delivery is made by one supplier.
- Each delivery contains only one type of supply item (bottles, corks, vats, etc.).
- Each delivery records the expected delivery date and actual delivery date.
- Each delivery records the quantity delivered.

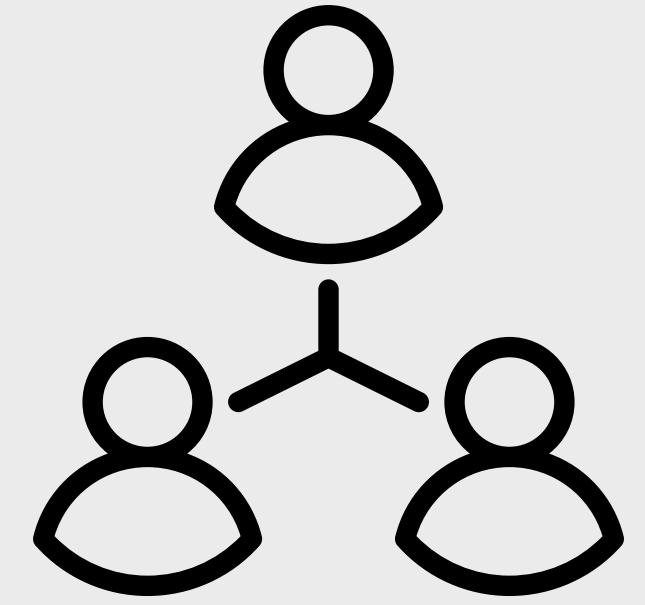


Wines, Distribution & Shipments

- Each wine has a unique ID and name.
- Each distributor has a unique ID and name.
- Each wine shipment is sent to one distributor and contains only one type of wine.
- Each shipment records the shipment date and quantity shipped.



Employees & Time Worked



- Each employee has a unique ID and name.
- Each Time_Entry belongs to one employee.
- Each time entry records hours worked and date.





Reports

- Not all suppliers deliver on time.
- Supplier 3 is the worst performer (up to 14 days late).
- Month-by-month issues:
 - Jan 2025: Minor – Supplier 1, corks late by 2 days
 - Feb 2025: Minor – Supplier 2, labels late by 1 day
 - Mar 2025: Major – Supplier 3, vats late by 14 days

Reports



== SUPPLIER DELIVERY PERFORMANCE (MONTHLY) ==

```
Month 1 | Supplier: Bottle & Cork Co. | Item: BOTTLES | Expected: 2025-01-10 | Actual: 2025-01-10 | ON TIME
Month 1 | Supplier: Bottle & Cork Co. | Item: CORKS | Expected: 2025-01-10 | Actual: 2025-01-12 | LATE by 2 days
Month 2 | Supplier: Label & Box Inc. | Item: LABELS | Expected: 2025-02-05 | Actual: 2025-02-06 | LATE by 1 days
Month 2 | Supplier: Label & Box Inc. | Item: BOXES | Expected: 2025-02-05 | Actual: 2025-02-05 | ON TIME
Month 3 | Supplier: Vats & Tubing Ltd. | Item: VATS | Expected: 2025-03-01 | Actual: 2025-03-15 | LATE by 14 days
Month 3 | Supplier: Vats & Tubing Ltd. | Item: TUBING | Expected: 2025-03-01 | Actual: 2025-03-03 | LATE by 2 days
```

== WINE SALES & DISTRIBUTION REPORT ==

```
Wine: Cabernet | Distributor: Coastal Wine Group | Quantity Shipped: 260
Wine: Cabernet | Distributor: Pacific Fine Wines | Quantity Shipped: 250
Wine: Chablis | Distributor: Midwest Beverage Co. | Quantity Shipped: 150
Wine: Chablis | Distributor: Pacific Fine Wines | Quantity Shipped: 130
Wine: Chardonnay | Distributor: Atlantic Wine Distributors | Quantity Shipped: 180
Wine: Chardonnay | Distributor: Southern Cellars | Quantity Shipped: 200
Wine: Merlot | Distributor: Atlantic Wine Distributors | Quantity Shipped: 300
Wine: Merlot | Distributor: Northern Spirits | Quantity Shipped: 220
```

--- TOTAL SALES BY WINE ---

```
Wine: Chablis | Total Shipped: 280
Wine: Chardonnay | Total Shipped: 380
Wine: Cabernet | Total Shipped: 510
Wine: Merlot | Total Shipped: 520
```

== EMPLOYEE HOURS WORKED (BY QUARTER) ==

```
Employee: Bob Ulrich | Year: 2025 | Q1 | Hours Worked: 6.00
Employee: Henry Doyle | Year: 2025 | Q1 | Hours Worked: 9.00
Employee: Henry Doyle | Year: 2025 | Q3 | Hours Worked: 9.00
Employee: Jane Smith | Year: 2025 | Q2 | Hours Worked: 8.00
Employee: Jane Smith | Year: 2025 | Q4 | Hours Worked: 8.00
Employee: Janet Collins | Year: 2025 | Q1 | Hours Worked: 15.50
Employee: Jon Doe | Year: 2025 | Q1 | Hours Worked: 8.00
Employee: Jon Doe | Year: 2025 | Q2 | Hours Worked: 8.00
Employee: Jon Doe | Year: 2025 | Q3 | Hours Worked: 8.00
Employee: Maria Costanza | Year: 2025 | Q1 | Hours Worked: 8.00
Employee: Roz Murphy | Year: 2025 | Q1 | Hours Worked: 8.00
PS C:\csd\csd-310\CSD310 Case Study>
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Supplier Delivery Performance (Monthly)

This report compares expected and actual delivery dates by month to show whether suppliers are delivering on time and how late delayed deliveries are. It helps management identify unreliable suppliers and recurring delivery issues.

Wine Sales and Distribution

This report shows which distributors carry each wine and the total quantity shipped, including overall totals by wine. It helps determine whether wines are selling as expected and identifies wines that may be underperforming.

Employee Hours Worked by Quarter

This report summarizes total hours worked by each employee by year and quarter using recorded work dates. It provides a clear snapshot of employee labor over the last four quarters for staffing and payroll decisions.

Report Results



Total quantities shipped per wine:

- Wine 1: 520 units
- Wine 2: 510 units
- Wine 3: 280 units (underperforming)
- Wine 4: 380 units



Distributor coverage:

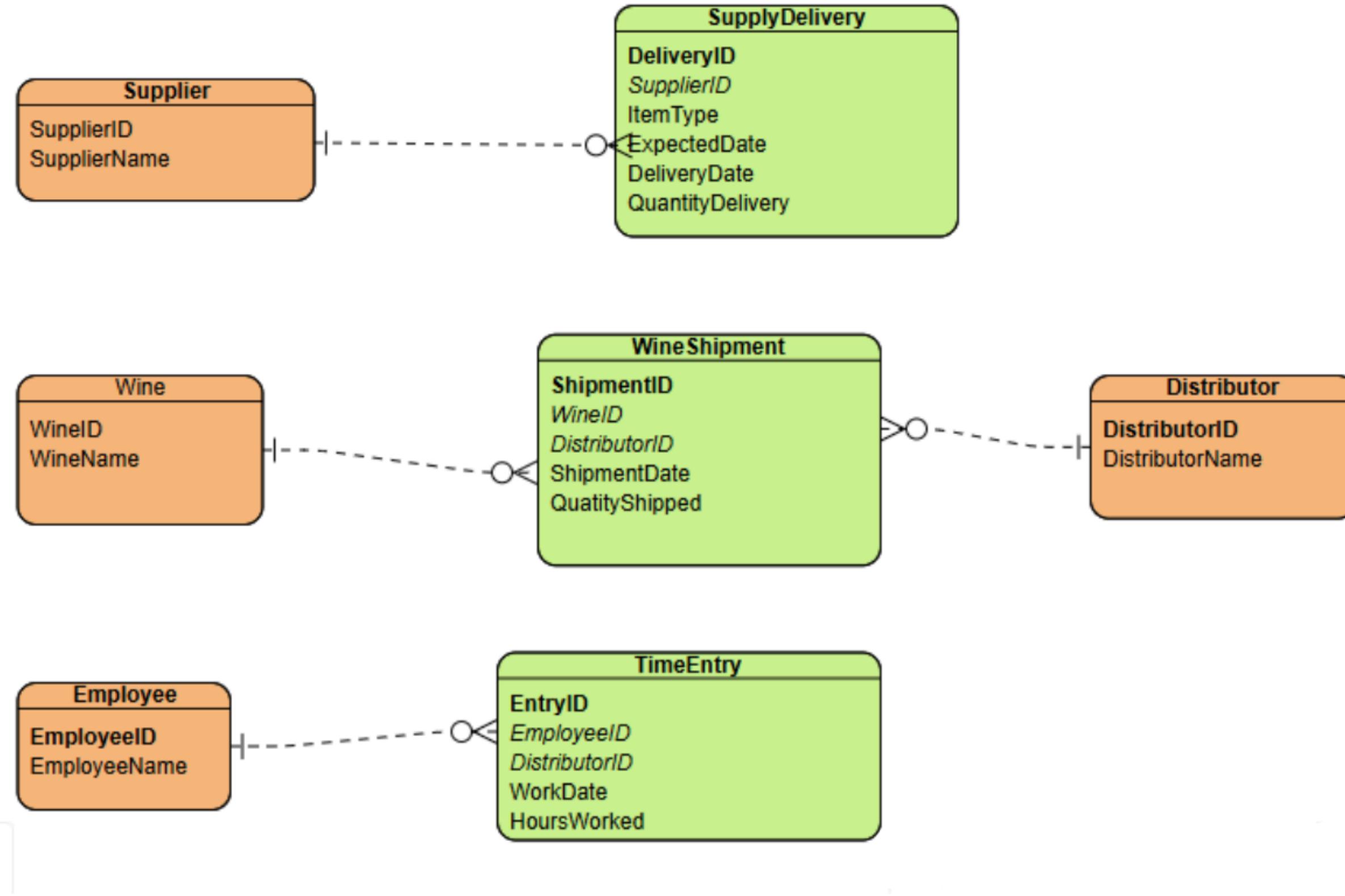
- Atlantic Wine Distributors → Wine 1, 3, 4
- Pacific Fine Wines → Wine 2
- Midwest Beverage Co. → Wine 3
- Southern Cellars → Wine 1
- Northern Spirits → Wine 4
- Coastal Wine Group → Wine 2

Assumptions



1. Suppliers and distributors remain active and may make multiple deliveries/shipments.
2. Delivery gaps calculated using expected vs. actual delivery dates.
3. Monthly performance reports are based on delivery/shipment dates and quantities.
4. Employee total hours per quarter are derived from work dates.
5. Total wine sales = sum of all shipments per wine.

ERD - Bacchus Winery



Entity Relationships - Bacchus Winery

Supplier

Attributes:

SupplierID (PK)

SupplierName

Relationships:

One Supplier → Many SupplyDelivery

SupplyDelivery

Attributes:

DeliveryID (PK)

SupplierID (FK → Supplier.SupplierID)

ItemType

ExpectedDate

DeliveryDate

QuantityDelivered



Entity Relationships - Bacchus Winery

Wine

Attributes:

WinelD (PK)

WineName

Relationships:

One Wine → Many WineShipment



WineShipment

Attributes:

- ShipmentID (PK)
- WinelD (FK → Wine.WinelD)
- DistributorID (FK → Distributor.DistributorID)
- ShipmentDate
- QuantityShipped

Entity Relationships - Bacchus Winery

Distributor

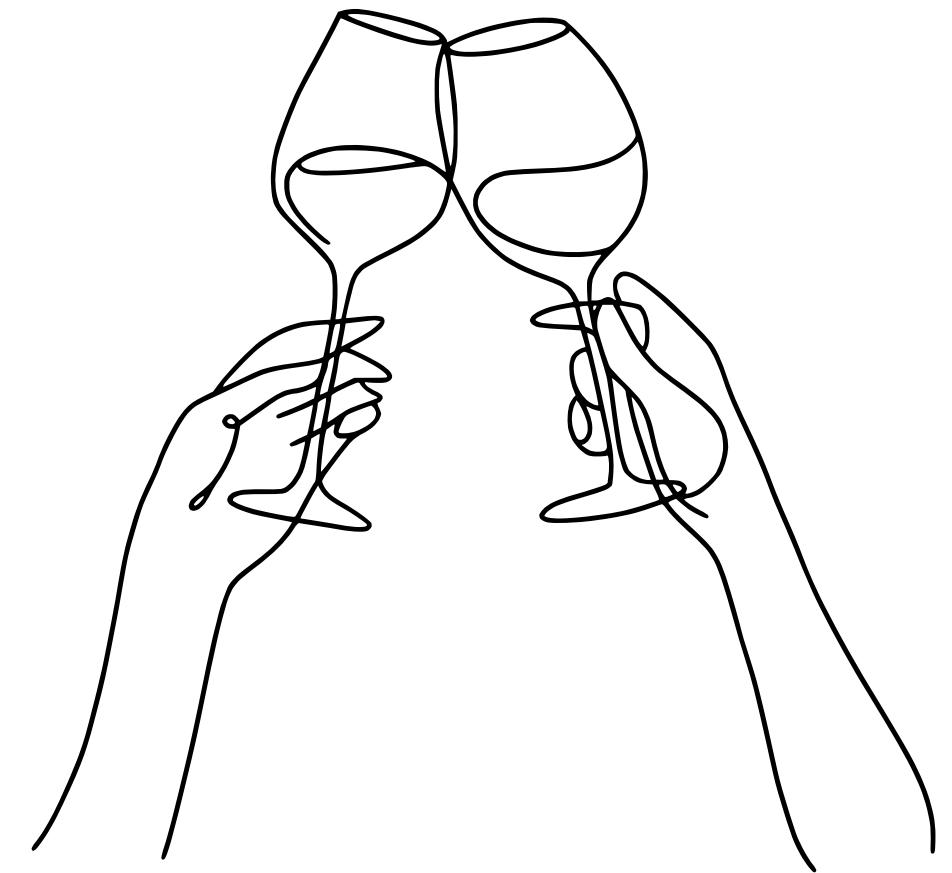
Attributes:

DistributorID (PK)

DistributorName

Relationships:

One Distributor → Many WineShipments



Entity Relationships - Bacchus Winery

Employee

Attributes:

- EmployeeID (PK)
- EmployeeName

Relationships:

- One Employee → Many TimeEntries

TimeEntry

Attributes:

- EntryID (PK)
- EmployeeID (FK → Employee.EmployeeID)
- WorkDate
- HoursWorked



THANKS!

