### Bacchus Winery Case Study

#### Business Rules & Assumptions

1. The winery employs multiple departments:
   * Finance
   * Marketing
   * Production
   * Distribution
2. Each department has one or more employees; each employee belongs to only one department.
3. The winery produces four types of wine:
   * Merlot
   * Cabernet
   * Chablis
   * Chardonnay
4. Supplies are received from three suppliers:
   * Bottles & corks
   * Labels & boxes
   * Vats & tubing
5. Supplies are shipped monthly by each supplier.
6. Stan and Davis manage supply inventory and ordering.
7. Distribution is managed by Maria, and distributors should be able to order and track shipments online.
8. Each distributor can carry one or more wine types.
9. Wine sales data should be tracked to determine performance per wine type and distributor.
10. Employee work hours are tracked quarterly; total hours for each employee are required.
11. Reports are needed on:
    * Supplier delivery performance
    * Wine distribution & sales trends
    * Employee work hours

###### Assumptions:

* Each shipment from a supplier includes a timestamp for expected and actual delivery.
* Wine inventory and sales are logged per distributor.
* Employees clock in/out digitally, or their hours are otherwise recorded for reporting.

#### ERD

* Employee
  + EmployeeID (PK)
  + Name
  + DepartmentID (FK)
  + Position
* Department
  + DepartmentID (PK)
  + Name
* EmployeeHours
  + RecordID (PK)
  + EmployeeID (FK)
  + Quarterly
  + HoursWorked
* SupplyType
  + SupplyTypeID (PK)
  + Name
  + Description
* Supplier
  + SupplierID (PK)
  + Name
* SupplyShipment
  + ShipmentID (PK)
  + SupplierID (FK)
  + SupplyTypeID (FK)
  + Quantity
  + ExpectedDeliveryDate
  + ActualDeliveryDate
* SupplyInventory
  + SupplyInventoryID (PK)
  + SupplyTypeID (FK)
  + QuantityOnHand
  + LastUpdated
* Wine
  + WineID (PK)
  + Name
  + Type
* Distributor
  + DistributorID (PK)
  + Name
* WineOrders
  + OrderID (PK)
  + DistributorID (FK)
  + WineID (FK)
  + Quantity
  + OrderDate
  + ShipDate
  + OrderStatus
* WineInventory
  + WineInventoryID (PK)
  + WineID (FK)
  + QuantityOnHand
  + LastUpdated

###### 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).

### A diagram of a company AI-generated content may be incorrect.