



**Assumptions:**

**Grape to Vineyard:** mandatory one to optional many  
A vineyard has one and only one grape and a grape corresponds to zero or many vineyards.

**Vineyard to employee:** mandatory one to mandatory one  
Each vineyard has one employee, and each employee works at one and only one vineyard.

**WineProduction to wine:** mandatory one to optional one  
Each wine has to be produced and the production process may be associated with a wine.

**Wine to product:** mandatory one to mandatory many  
A product consists of one sort of wine but a wine sort can be contained in many products.

**Product to bottle:** mandatory one to mandatory many  
A bottle corresponds to a single product whereas a product can contain many bottles.

**Bottle to bottle order:** mandatory one to optional many  
A bottle can be ordered many times but also might not be ordered, a bottle order must be about one type of bottle.

**Bottle order to glass vendor:** mandatory one mandatory many  
A vendor places a single order but a order can be placed by many vendors.

**Product to product order:** mandatory any to mandatory one  
A product order contains a single product and a product is from a single order.

**Product order to customer:** mandatory one to optional many  
A product order must belongs to one

**Subtypes of customer:** partial specialization & disjoint  
Customers include but are not limited to restaurants, wine shops, and individuals, so it is partial specialization.  
A restaurant cannot also be a wine shops, and individuals cannot represent a shops or restaurant, so they are disjoint.

**Subtypes of employees:** partial specialization & disjoint  
Employees include but are not limited to Clerk, grape farmers, and grape makers, so it is partial specialization.  
A restaurant cannot also be a wine shops, and individuals cannot represent a shops or restaurant, so they are disjoint.