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INFX 543 – Database Project, Design Document

Database Specification: Purpose, Business Problems Addressed and Business Rules

Database Purpose:

Develop a database that stores information about Washington State winegrowing regions (AVAs), the grape varietals grown, and wine prices. Our goal is to educate wine consumers about WA State grapes and the wines they produce, while providing winery and price comparisons.

Business Problems Addressed:

- Maintain a record of Washington State American Viticultural Areas (AVAs), including each AVA's size in acres and grape varietals grown.
- Enable wine customer, business or individual, to search by wine brand or grape varietal and compare prices based on glass, bottle, or case, including winery club discounts.

Business Rules:

- Price data should be specified per bottle, case and/or per glass.
- Include at least one varietal per AVA.
- Varietals should be designated as a white or red grape.
- Contact information for each winery and customer should be included.
- Acreage must be included for each AVA.
- Database design should allow for derived information, such as average prices per bottle or varietal, ratios of winery per AVA, etc.
- Only wines made from grapes grown in Washington State should be included.
- Names of vineyards should be included in this database, and must belong to an AVA.

Proposed Attributes:

- AVA_ID
- AVA_Name
- AVA_Total_Acreage   // in sq. acres
- Bottle_Price
- Case_Price
- Customer_City
- Customer_ID
- Customer_Name
- Customer_Phone
- Customer_Type
- Customer_Website
- Customer_Zip
- Glass_Price
- Grape_Varietal_ID
- Grape_Varietal_Name
- Grape_Varietal_Type   // red or white

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- Vineyard_ID
- Vineyard_Name
- Wine_Grape_Varietals
- Wine_ID
- Wine_Label
- Winery_City
- Winery_Club   // yes or no
- Winery_Club_Discount   // as a %
- Winery_ID
- Winery_Name
- Winery_Phone
- Winery_Website
- Winery_ZIP

Design Decisions:

Entity Name	Why Entity is Included	Relationships with other Entities
AVA	This entity holds the data about each Washington State American Viticultural Area, such as the name and total acreage.	This entity connects back to **Vineyard** so we will know which AVA each vineyard belongs to.
Grape_Varietal	This entity tracks the varietal name and type.	Related to **Vineyard_Grape_Varietals** and **Wine_Grape_Varietals**.
Customer	Holds the details for each customer including type, name, and address.	Relates to **Price_Customer.**

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Price_Customer	This entity contains data for wine prices by bottle, case, and glass and related them to customers.	Relates to **Wine** and **Customer.**
Vineyard	This entity tracks the details for each vineyard.	Related to **Winery_Source_Vineyards**, an association entityto Winery; **Vineyard_Grape_Varietals**, an association entity as each vineyard may grow multiple varietals; and **AVA,** to track the region it belongs to.
Vineyard_Grape_Varietals	Association entity, each vineyard may grow multiple grape varietals.	Related to **Vineyard** and **Grape_Varietal**.
Wine	This entity serves as a parent entity for wine prices, and contains the wine label information.	Related to association entities **Wine_Grape_Varietals** and **Winery_Wine,** and to entity **Price_Customer.**
Winery	This is the entity for each winery. We will use this to track the name and location. It will also let us know if the winery offers a discount for being part of the wine club.	This is related to **Winery_Source_Vineyards** to track all vineyards the winery sources grapes from. It's related to **Winery_Wine**, an association entity, because there are multiple wines per winery.

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Winery_Source_Vineyards	Association entity, each winery may have multiple vineyards it sources from.	Related to **Winery** and **Vineyard**.
Winery_Wine	This association entity is needed to tie each type of wine produced to a winery.	Related to **Winery** and **Wine**.
Wine_Grape_Varietals	This association entity is needed to tie grape varietals to wines.	Related to **Grape_Varietal** and **Wine.**