Converting (E)ER to Relational Mapping

Step 1: Mapping of regular(strong) entitiy types

wines

INT, wine_id	VARCHAR(50) type	VARCHAR(255) description	FLOAT price	FLOAT user_rating	TINYINT quality	FLOAT alcohol

wineries

INT, winery_id	VARCHAR(50) winery_name	VARCHAR(64) certificate	TINYINT(1) operational

locations

INT, location_id	VARCHAR(50) country	VARCHAR(50) province	VARCHAR(50) region1	VARCHAR(50) region2

all_users

VARCHAR(32), api_key	VARCHAR(50) first_name	VARCHAR(50) email	VARCHAR(50) password	INT num_reviews	DATE() verified_recently

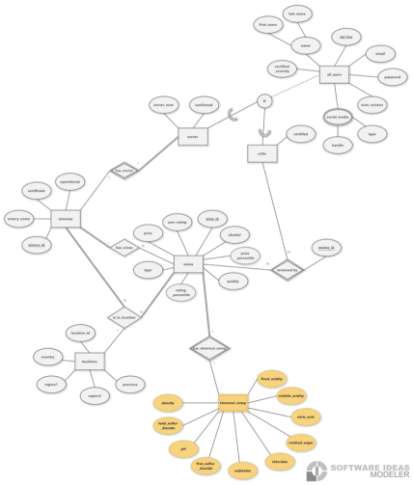
critic

VARCHAR(32), api_key	TINYINT(1) certified

owner

VARCHAR(32), api_key	INT owner_num	TINYINT(1) confirmed

Step 2: Mapping of weak entitiy type



wines

INT, wine_id	VARCHAR(50) type	VARCHAR(255) description	FLOAT price	FLOAT user_rating	TINYINT quality	FLOAT alcohol

wineries

INT, winery_id	VARCHAR(50) winery_name	VARCHAR(64) certificate	TINYINT(1) operational

locations

INT, location_id	VARCHAR(50) country	VARCHAR(50) province	VARCHAR(50) region1	VARCHAR(50) region2

all_users

VARCHAR(32), api_key	VARCHAR(50) first_name	VARCHAR(50) email	VARCHAR(50) password	INT num_reviews	DATE() verified_recently

critic

VARCHAR(32), api_key	TINYINT(1) certified

owner

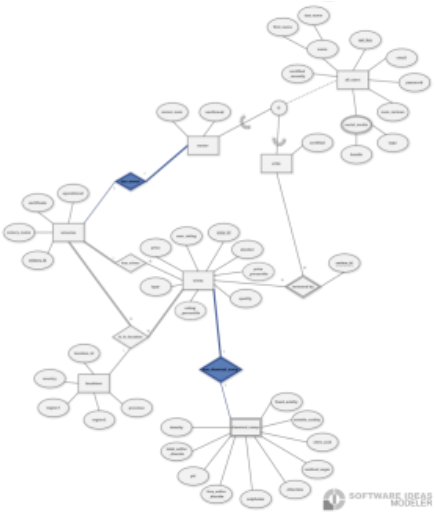
VARCHAR(32), api_key	INT owner_num	TINYINT(1) confirmed

chemical_comp

INT wine_id	FLOAT density	INT total_sulfur_dioxide	FLOAT pH	INT free_sulfur_dioxide	FLOAT sulphates	FLOAT chlorides	FLOAT residual_sugar	FLOAT citric_acid	FLOAT volatile_acidity	FLOAT fixed_acidity

Step 3: Mapping binary (1:1) relationships

Approach take : Foreign key approach (approach 1)



wines

INT, wine_id	VARCHAR(50) type	VARCHAR(255) description	FLOAT price	FLOAT user_rating	TINYINT quality	FLOAT alcohol

wineries

INT, winery_id	VARCHAR(32), api_key	VARCHAR(50) winery_name	VARCHAR(64) certificate	TINYINT(1) operational

locations

INT, location_id	VARCHAR(50) country	VARCHAR(50) province	VARCHAR(50) region1	VARCHAR(50) region2

all_users

VARCHAR(32), api_key	VARCHAR(50) first_name	VARCHAR(50) email	VARCHAR(50) password	INT num_reviews	DATE() verified_recently

critic

VARCHAR(32), api_key	TINYINT(1) certified

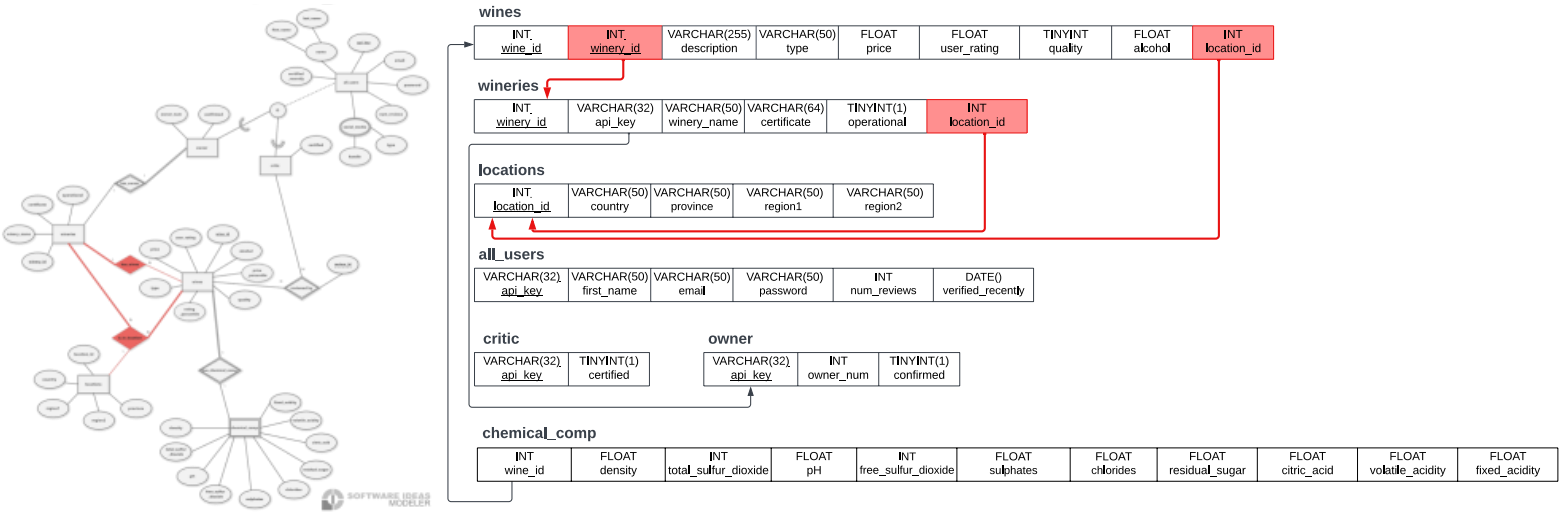
owner

VARCHAR(32), api_key	INT owner_num	TINYINT(1) confirmed

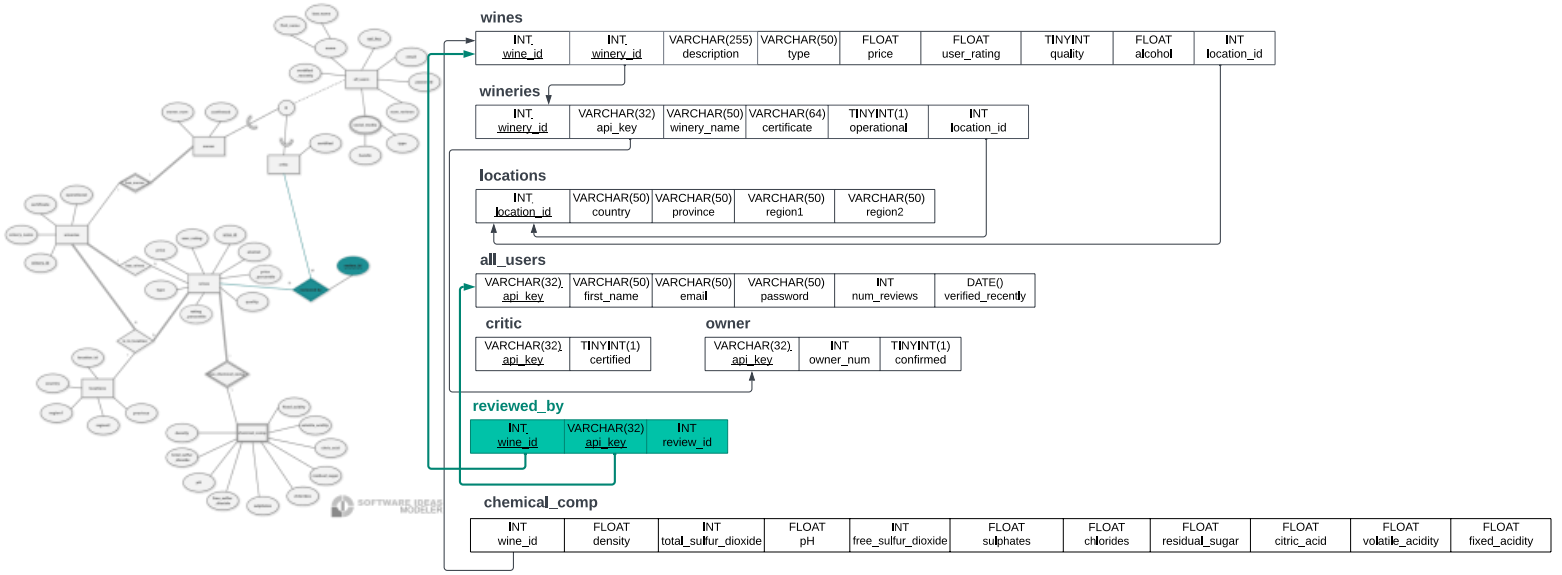
chemical_comp

INT wine_id	FLOAT density	INT total_sulfur_dioxide	FLOAT pH	INT free_sulfur_dioxide	FLOAT sulphates	FLOAT chlorides	FLOAT residual_sugar	FLOAT citric_acid	FLOAT volatile_acidity	FLOAT fixed_acidity

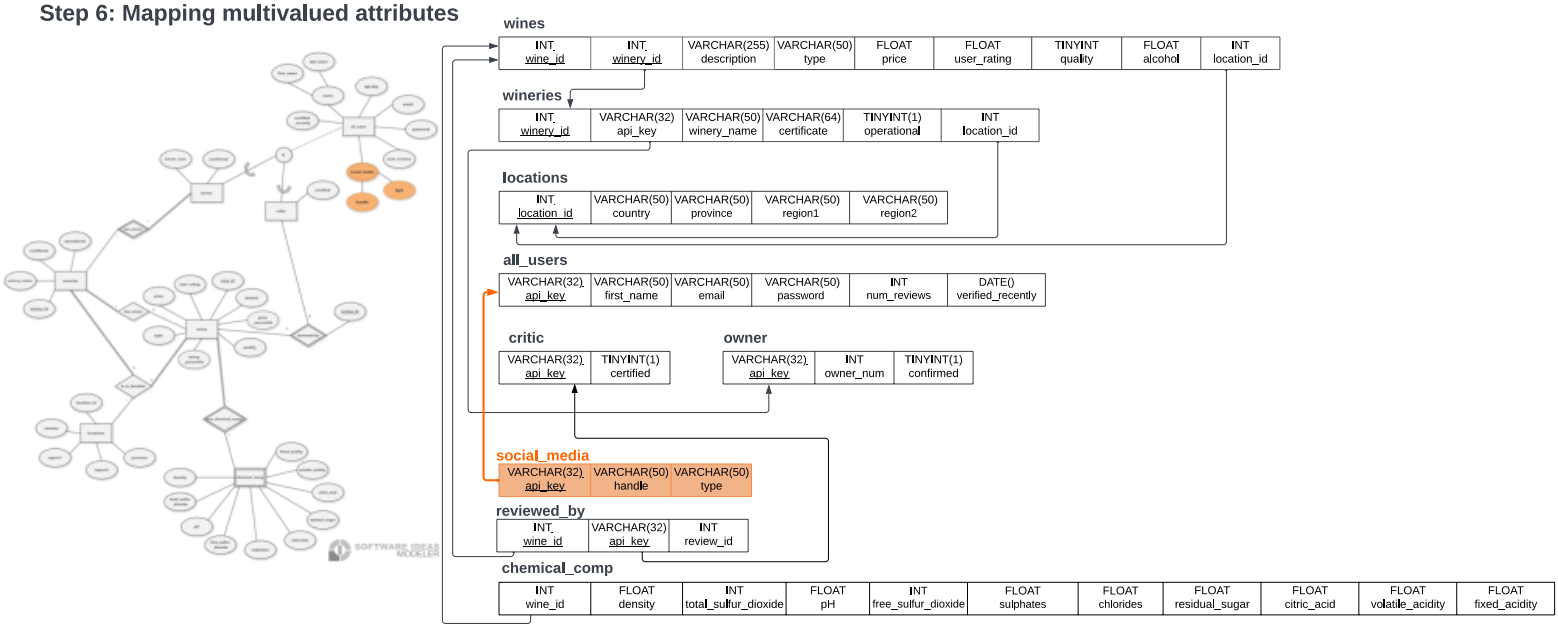
Step 4: Mapping binary (1:N) relationships



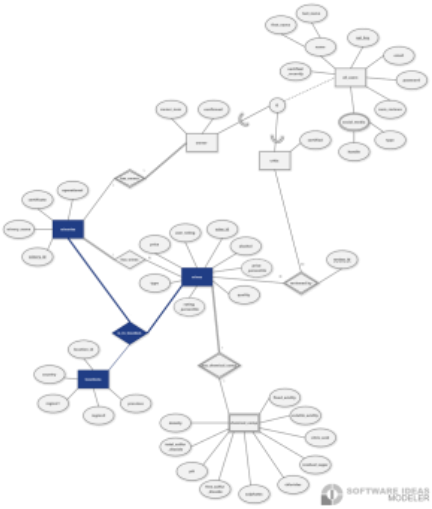
Step 5: Mapping binary (M:N) relationships



Step 6: Mapping multivalued attributes



Step 7: Mapping N-ary relationships



wines

INT, wine_id	INT, winery_id	VARCHAR(255) description	VARCHAR(50) type	FLOAT price	FLOAT user_rating	TINYINT quality	FLOAT alcohol	INT location_id

wineries

INT, winery_id	VARCHAR(32) api_key	VARCHAR(50) winery_name	VARCHAR(64) certificate	TINYINT(1) operational	INT location_id

locations

INT, location_id	VARCHAR(50) country	VARCHAR(50) province	VARCHAR(50) region1	VARCHAR(50) region2

is_in_location

INT, location_id	INT, wine_id	INT, winery_id

all_users

VARCHAR(32), api_key	VARCHAR(50) first_name	VARCHAR(50) email	VARCHAR(50) password	INT num_reviews	DATE() verified_recently

critic

VARCHAR(32), api_key	TINYINT(1) certified

owner

VARCHAR(32), api_key	INT owner_num	TINYINT(1) confirmed

social_media

VARCHAR(32)(, api_key	VARCHAR(50) handle	VARCHAR(50) type

reviewed_by

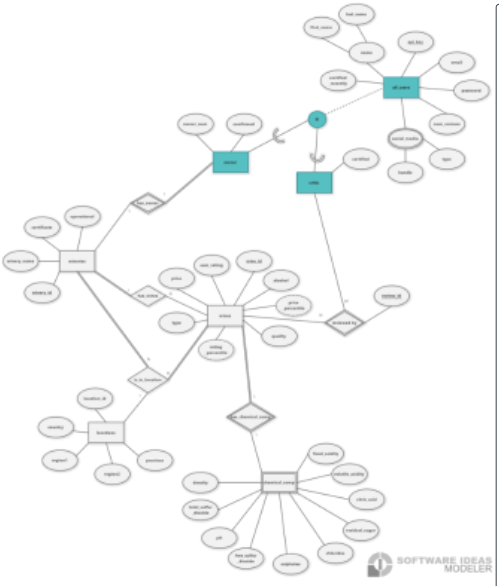
INT, wine_id	VARCHAR(32) api_key	INT review_id

chemical_comp

INT wine_id	FLOAT density	INT total_sulfur_dioxide	FLOAT pH	INT free_sulfur_dioxide	FLOAT sulphates	FLOAT chlorides	FLOAT residual_sugar	FLOAT citric_acid	FLOAT volatile_acidity	FLOAT fixed_acidity

Step 8: Mapping Specialization and generalization

Option 8A: Multiple relations - superclass and subclasses



wines

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wineries

INT, winery_id	VARCHAR(32) api_key	VARCHAR(50) winery_name	VARCHAR(64) certificate	TINYINT(1) operational	INT location_id

locations

INT, location_id	VARCHAR(50) country	VARCHAR(50) province	VARCHAR(50) region1	VARCHAR(50) region2

is_in_location

INT, location_id	INT, wine_id	INT, winery_id

all_users

VARCHAR(32), api_key	VARCHAR(50) first_name	VARCHAR(50) email	VARCHAR(50) password	INT num_reviews	DATE() verified_recently

critic

VARCHAR(32), api_key	TINYINT(1) certified

owner

VARCHAR(32), api_key	INT owner_num	TINYINT(1) confirmed

social_media

VARCHAR(32), api_key	VARCHAR(50) handle	VARCHAR(50) type

reviewed_by

INT, wine_id	VARCHAR(32) api_key	INT review_id

chemical_comp

INT wine_id	FLOAT density	INT total_sulfur_dioxide	FLOAT pH	INT free_sulfur_dioxide	FLOAT sulphates	FLOAT chlorides	FLOAT residual_sugar	FLOAT citric_acid	FLOAT volatile_acidity	FLOAT fixed_acidity