Converting (E)ER to Relational Mapping

Step 1: Mapping of regular(strong) entitiy types

all_users

VARCHAR(32) api_key	VARCHAR(32) first_name	VARCHAR(64) last_name	VARCHAR(50) email	VARCHAR(64) password	VARCHAR(12) salt	INT() num_reviews	DATE() last_verified	TINYINT(1) certified_critic

wines

INT() wine_id	VARCHAR(50) type	VARCHAR(64) grape_type	VARCHAR(255) image	VARCHAR(255) description	FLOAT() price	TINYINT(1) quality	FLOAT() alcohol

wineries

INT() winery_id	VARCHAR(64) winery_name	TINYINT(1) certified	TINYINT(1) operational	TINYINT(1) offers_tours	VARCHAR(64) eco_friendly

locations

INT() location_id	VARCHAR(12) country	VARCHAR(30) province	VARCHAR(50) region1	VARCHAR(50) region2

Step 2: Mapping of weak entitiy type

all_users

VARCHAR(32) api_key	VARCHAR(32) first_name	VARCHAR(64) last_name	VARCHAR(50) email	VARCHAR(64) password	VARCHAR(12) salt	INT() num_reviews	DATE() last_verified	TINYINT(1) certified_critic

reviews

VARCHAR(32) api_key	INT() wine_id	INT() review_id	FLOAT() rating	VARCHAR(255) comment

wines

INT() wine_id	VARCHAR(50) type	VARCHAR(64) grape_type	VARCHAR(255) image	VARCHAR(255) description	FLOAT() price	TINYINT(1) quality	FLOAT() alcohol

wineries

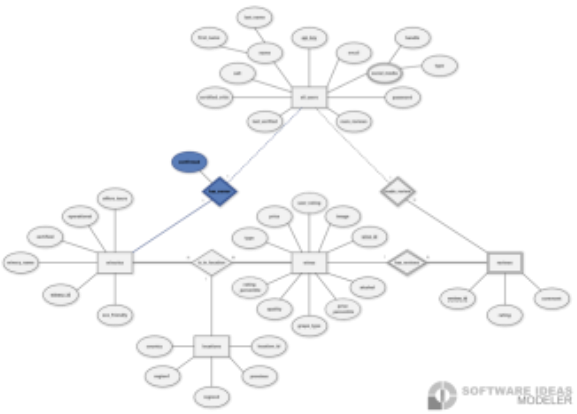
INT() winery_id	VARCHAR(64) winery_name	TINYINT(1) certified	TINYINT(1) operational	TINYINT(1) offers_tours	VARCHAR(64) eco_friendly

locations

INT() location_id	VARCHAR(12) country	VARCHAR(30) province	VARCHAR(50) region1	VARCHAR(50) region2

Step 3: Mapping binary (1:1) relationships

Approach take : Foreign key approach (approach 1)



all_users

VARCHAR(32) api_key	VARCHAR(32) first_name	VARCHAR(64) last_name	VARCHAR(50) email	VARCHAR(64) password	VARCHAR(12) salt	INT() num_reviews	DATE() last_verified	TINYINT(1) certified_critic

reviews

VARCHAR(32) api_key	INT() wine_id	INT() review_id	FLOAT() rating	VARCHAR(255) comment

wines

INT() wine_id	VARCHAR(50) type	VARCHAR(64) grape_type	VARCHAR(255) image	VARCHAR(255) description	FLOAT() price	TINYINT(1) quality	FLOAT() alcohol

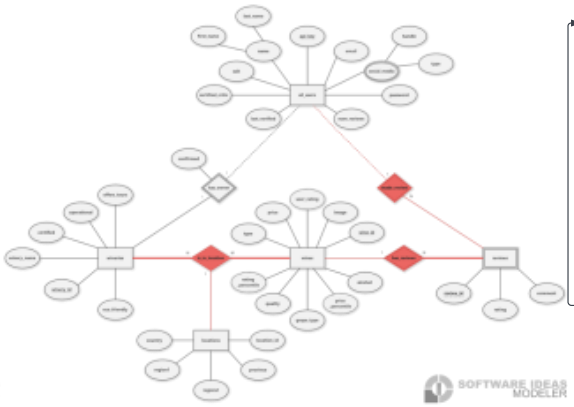
wineries

INT() winery_id	VARCHAR(32) owner_apikey	TINYINT(1) confirmed	VARCHAR(64) winery_name	TINYINT(1) certified	TINYINT(1) operational	TINYINT(1) offers_tours	VARCHAR(64) eco_friendly

locations

INT() location_id	VARCHAR(12) country	VARCHAR(30) province	VARCHAR(50) region1	VARCHAR(50) region2

Step 4: Mapping binary (1:N) relationships



all_users

VARCHAR(32) api_key	VARCHAR(32) first_name	VARCHAR(64) last_name	VARCHAR(50) email	VARCHAR(64) password	VARCHAR(12) salt	INT() num_reviews	DATE() last_verified	TINYINT(1) certified_critic

reviews

VARCHAR(32) api_key	INT() wine_id	INT() review_id	FLOAT() rating	VARCHAR(255) comment

wines

INT() wine_id	VARCHAR(50) type	VARCHAR(64) grape_type	VARCHAR(255) image	VARCHAR(255) description	FLOAT() price	TINYINT(1) quality	FLOAT() alcohol	INT() location_id

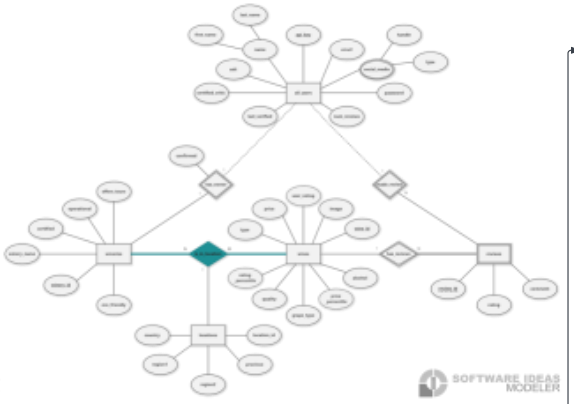
wineries

INT() winery_id	VARCHAR(32) owner_apikey	TINYINT(1) confirmed	VARCHAR(64) winery_name	TINYINT(1) certified	TINYINT(1) operational	TINYINT(1) offers_tours	VARCHAR(64) eco_friendly	INT() location_id

locations

INT() location_id	VARCHAR(12) country	VARCHAR(30) province	VARCHAR(50) region1	VARCHAR(50) region2

Step 5: Mapping binary (M:N) relationships



all_users

VARCHAR(32) api_key	VARCHAR(32) first_name	VARCHAR(64) last_name	VARCHAR(50) email	VARCHAR(64) password	VARCHAR(12) salt	INT() num_reviews	DATE() last_verified	TINYINT(1) certified_critic

reviews

VARCHAR(32) api_key	INT() wine_id	INT() review_id	FLOAT() rating	VARCHAR(255) comment

wines

INT() wine_id	VARCHAR(50) type	VARCHAR(64) grape_type	VARCHAR(255) image	VARCHAR(255) description	FLOAT() price	TINYINT(1) quality	FLOAT() alcohol	INT() location_id

is_in_location

INT() winery_id	INT() wine_id

wineries

INT() winery_id	VARCHAR(32) owner_apikey	TINYINT(1) confirmed	VARCHAR(64) winery_name	TINYINT(1) certified	TINYINT(1) operational	TINYINT(1) offers_tours	VARCHAR(64) eco_friendly	INT() location_id

locations

INT() location_id	VARCHAR(12) country	VARCHAR(30) province	VARCHAR(50) region1	VARCHAR(50) region2

Step 6: Mapping multivalued attributes

social_media

VARCHAR(32) api_key	VARCHAR(64) handle	VARCHAR(32) type

all_users

VARCHAR(32) api_key	VARCHAR(32) first_name	VARCHAR(64) last_name	VARCHAR(50) email	VARCHAR(64) password	VARCHAR(12) salt	INT() num_reviews	DATE() last_verified	TINYINT(1) certified_critic

reviews

VARCHAR(32) api_key	INT() wine_id	INT() review_id	FLOAT() rating	VARCHAR(255) comment

wines

INT() wine_id	VARCHAR(50) type	VARCHAR(64) grape_type	VARCHAR(255) image	VARCHAR(255) description	FLOAT() price	TINYINT(1) quality	FLOAT() alcohol	INT() location_id

is_in_location

INT() winery_id	INT() wine_id

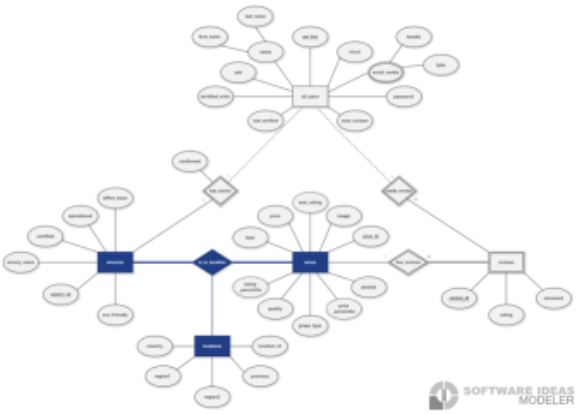
wineries

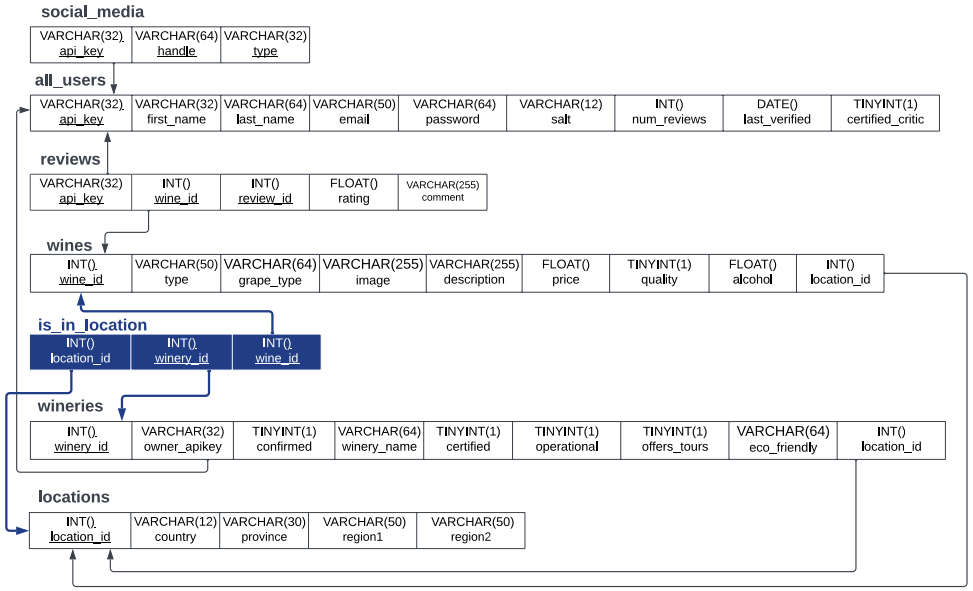
INT() winery_id	VARCHAR(32) owner_apikey	TINYINT(1) confirmed	VARCHAR(64) winery_name	TINYINT(1) certified	TINYINT(1) operational	TINYINT(1) offers_tours	VARCHAR(64) eco_friendly	INT() location_id

locations

INT() location_id	VARCHAR(12) country	VARCHAR(30) province	VARCHAR(50) region1	VARCHAR(50) region2

Step 7: Mapping N-ary relationships





Step 8: Mapping Specialization and generalization

N/A No specialization/generalization needed to be mapped