Development of Data Mart using SQL

For organizations, or startup companies/websites to store all the important data they have whether data about clients, services, even staff in an organized manner, they need to choose from various tools we have today for the means of storing data. Such as excel spreadsheet, databases etc. However, in this project I see that databases are the best choice.
Databases is a very efficient way to store and organize data, because large volumes of data can be stored in one place and even allow multiple uses. The aim of this project is to create a sample database about customers, services, host users of a rental company such as Airbnb.

My approach will be by starting to build a data mart that can be used for data about clients, reservations, closed reservations, reservation history and customer's review. I will also be using MySQL to create my database after I completed the schema design through ER entity relationship model.
After going through Airbnb website, surfing about the system of rental work, I then designed an ER model that will be used as a background to design this database. And the method I will be using for ER diagram is UML class diagram. In the UML class diagram, I will be creating, it is observed that there are relationships between 20 tables in the UML diagram. These tables store much info about customers, staff, reservation systems etc.

Requirement analysis:

1. User must enter first name, last name, email, password, and date of birth to register in website.
2. User should choose one of two types of account to register for: host or guest when he/she register.
3. User page should have a box where user must fill it.
4. User can login to the site using Facebook or Twitter account.
5. User can issue a coupon for if he/she is hosting or receive a coupon if he/she is a guest.
6. User account should include account creation date, account modification date, and status of account.

7. The property page should have name, description, created by user, property type, room types, category and subcategory of property, country, state, city, currency, address, location based on latitude and longitude, number of bedrooms, number of beds, number of bathrooms, number of accommodates and so on.
8. The location of property must show the neighborhood and its type, also the location must show the city, state, and country.
9. City must have a name.
10. State must have name and code.
11. Country must have name and code.
12. Neighborhood must have name, description, latitude, longitude, tags, creation date, modified date, and status.
13. Neighborhood must have name, description, icon, creation date, modified date, and status.
14. There must be dispute for each property to resolve problems. It must include booking details, user info, property info, title, description, creation date, modified date, and status.
15. Room type must have name, icon, creation date, modified date, and status.
16. Booking is a process must show the following: user info, property info, transaction info, check in date, check out date, price per day, price for stay, tax, Airbnb fees, amount to be paid, refund policy, effective amount, booking date, creation date, modified date, and status.
17. Category and subcategory both must have name, description, creation date, modified date, and status.
18. Each property must have images gallery linked to file, each file must have creation date and status. It must also show who has added.

19. Property can have reviews, each review must show reviewer, comment, rating, creation date, modified date, and status.

Data Dictionary

Data dictionary consists of 21 tables which contain more details about columns, data types, typical data dictionaries have attributes such as field name, field title, field type, maximum length, default value, and perhaps even event handlers.

Table [1]: properties

Column	Data Type	Column Description
properties_id	int	artificial key
name	varchar	name of property
description	text	description of property
address	text	address of property
latitude	varchar	latitude of property
logitude	varchar	longitude of property
bedroom_count	int	number of bedrooms
bed_count	int	number of beds
bathroom_count	int	number of bathrooms
accomodates_count	int	number of accommodates
availability_type	tinyint	type of availability: 1: night 2: week 3:month
start_date	datetime	starting date
end_date	datetime	ending date
price	decimal	price for property per night/week/month
price_type	tinyint	type of price
minimum_stay	int	minimum period of stay
minimum_stay_type	tinyint	stay type: night, week, or month
refund_type	int	refund type
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of property
user_id	int	
cities_id	int	
states_id	int	
countries_id	int	
room_type_id	int	
catogaries_id	int	
subcategries_id	int	
property_type_id	int	
currencies_id	int	

Table [2]: users

Column	Data Type	Column Description
user_id	int	artificial key
first_name	varchar	first name of user
last_name	varchar	last name of user
email	varchar	email of user
password	varchar	password of user
user_type	tinyint	specifies user type
date_of_birth	datetime	birth date of user
login_with	tinyint	method of login in example Facebook or Twitter
facebook_id	varchar	user's Facebook account ID
twitter_id	varchar	user's twitter account ID
about	text	provide more info about the user
recieve_coupon	tinyint	provides info if user has received coupon
user_created	datetime	creation date
user_modified	datetime	modification date
status	tinyint	status of user

Table [3]: property_images

Column	Data Type	Column Description
property_images_id	int	artificial key
added_by_user	int	This is foreign key rolled by user_id
image	varchar	link for image
created	datetime	creation date
status	tinyint	status of property images
properties_id	int	

Table [4]: property_reviews

Column	Data Type	Column Description
property_reviews_id	int	artificial key
review_by_user	int	This is foreign key rolled by user_id
booking_id	int	
comment	text	comment by users
rating	varchar	rating by users
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of the review
properties_id	int	

Table [5]: transactions

Column	Data Type	Column Description
transactions_id	int	artificial key
site_fees	decimal	fees required by site
amount	decimal	amount to be paid
transfer_on	datetime	date of transfer
discount_amt	decimal	amount of discount
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of transaction
promo_codes_id	int	
currencies_id	int	
properties_id	int	
reciever_id	int	This is foreign key rolled by user_id to show who is the receiver
payee_id	int	This is foreign key rolled by user_id to show who is the payee

Table [6]: bookings

Column	Data Type	Column Description
booking_id	int	artificial key
check_in_date	datetime	provides check in date
Check_out_date	datetime	provides check out date
price_per_day	decimal	shows price per day
price_for_stay	decimal	shows price per stay
tax_paid	decimal	the amount of tax to be paid
site_fees	decimal	site fees
amount_paid	decimal	amount to be paid
is_refund	bit	shows if refunding is possible or not
cancel_date	datetime	cancelation date of user
refund_paid	datetime	shows date of refunding
effective_amount	decimal	shows the effective amount
booking_date	datetime	shows booking date
created	datetime	creation date
modified	datetime	modification date
status	tinyint	shows status of booking
properties_id	int	
user_id	int	
transactions_id	int	

Table [7]: room_type

Column	Data Type	Column Description
room_type_id	int	artificial key
name	varchar	name of room type
icon_image	varchar	link of image
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of the room type

Table [8]: property_amenities

Column	Data Type	Column Description
property_amenities_id	int	artificial key
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of the property's amenities
amenity_id	int	
properties_id	int	

Table [9]: promo_codes

Column	Data Type	Column Description
promo_codes_id	int	artificial key
title	varchar	title of promo
description	text	description for promo
code	varchar	code for promotion
discount	decimal	discount applied by promo
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status

Table [10]: disputes

Column	Data Type	Column Description
disputes_id	int	artificial key
user_id	int	
booking_id	int	
title	varchar	Title for dispute
description	text	Description of the dispute
created	datetime	creation date
modified	datetime	modification date
properties_id	int	
status	tinyint	status of the dispute

Table [11]: cities

Column	Data Type	Column Description
cities_id	int	Artificial key
name	varchar	name of city
states_id	int	

Table [12]: states

Column	Data Type	Column Description
states_id	int	artificial key
name	varchar	name of state
code	varchar	code of state
countries_id	int	

Table [13]: countries

Column	Data Type	Column Description
countries_id	int	Artificial key
name	varchar	name of country
code	varchar	code of country

Table [14]: categories

Column	Data Type	Column Description
catogaries_id	int	Artificial key
name	varchar	Name of category
description	text	Description for category
created	datetime	Date of creation
modified	datetime	Date of modification
status	tinyint	Shows the status

Table [15]: subcategories

Column	Data Type	Column Description
subcategries_id	int	artificial key
name	varchar	name of subcategory
description	text	description of name
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of subcategory
catogaries_id	int	

Table [16]: property_type

Column	Data Type	Column Description
property_type_id	int	artificial key
name	varchar	description of property type
icon_image	varchar	link of image
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of the property type

Table [17]: room_type

Column	Data Type	Column Description
room_type_id	int	artificial key
name	varchar	name of room type
icon_image	varchar	link of image
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of the room type

Table [18]: neighbour_type

Column	Data Type	Column Description
neighbourhood_type_id	int	artificial key
name	varchar	name of the neighour type
description	text	description of the neighbour type
icon	varchar	link of image
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of the neighbour type

Table [19]: neighbourhood

Column	Data Type	Column Description
neighbourhood_type_id	int	
name	varchar	name of neighborhood
description	text	description of neighborhood
latitude	varchar	latitude of neighborhood
longitude	varchar	longitude of neighborhood
tags	text	tags
created	datetime	creation date
modified	datetime	modification date
status	tinyint	status of neighborhood
added_by_user	int	This is foreign key rolled by user_id
neighbourhood_id	int	

Table [20]: amenities

Column	Data Type	Column Description
name	varchar	Name of amenity
icon_image	varchar	Link for icon image
created	datetime	The date of creation
modified	datetime	The date of modification
status	tinyint	The status of amenity
amenity_id	int	Artificial Key

UML Diagram of the Rental Database.