

Bike Rental System

Project Overview:

In this project, we are going to design a database for a Bike Rental System. It enables the client to easily rent and make fast reservations online. It also allows the client to subscribe, make payment and penalties as per their usage. Additionally, a customer can promote ads at the dock stations.

Entity Profiles -

1. Customer - Customer is an entity who is interested in putting up an advertisement on Docks.
2. Client and Subscription – A Client is an entity who is interested in renting a bicycle from the dock for a specified duration. A client be an individual or a group based on his subscription taken.
3. Dock – Dock is an entity where a few bicycles are parked for the clients to rent them.
4. Rental – Rental entity contains the booking details of a client.
5. Bike and Bike Category - These entities contain all the bike details that can be rented.
6. Payment and Penalty - These entities include the final charges a user has incurred after renting the bicycle.
7. AD – AD is an entity that retains the Customer who puts the advertisement on multiple Dock stations

Business Rules -

1. The Bike Rental System helps client to rent a Bike from a dock.
Entities involved – BIKE, RENTAL, CLIENT, DOCK
2. The Bike Rental System contains all the information related to bicycles.
Entities involved – BIKE, BIKE CATEGORY
3. Customers have the option of advertising on the Docks.
Entities involved – CUSTOMER, AD, DOCK, DOCK GROUPING (Associate Entity)
4. Client payment information will be retained in the system.
Entities involved – CLIENT, PAYMENT, RENTAL

5. A penalty fee is added along with the regular payment if the time slot is exceeded, or the bicycle is damaged.

Entities involved – PAYMENT, PENALTY

6. Client has the option to opt for the subscription as per its need

Entities involved – CLIENT, SUBSCRIPTION

Entities Used -

1. Customer - **CustomerID**, Name, EmailID, Contact No, Address, Username, Password
2. Ad - **AdID** name, DockGroupid, Image, Description, Start date, endnote, Amount, CustomerID
3. DockGrouping - DockGroupID, DockID,
4. Dock - **DockID**, Name, Location
5. Subscription – **SubscriptionID**, SubscriptionName, Duration
6. Client - **Client ID**, Name, EmailID, ContactNo, Username, Password, Address, CardDetails
7. Rental - **Rental_ID**, ClientID, DockID, BikeID, PaymentID, StartDate, EndDate, Amount, Remark
8. Bike - **BikeID**, Name, Rent Price, Status
9. BikeCategory - **BikeCategoryID**, BikeDetail, BikeManufacturerName
10. Payment - **PaymentID**, PaymentStatus, RentalID
11. Penalty - **PenaltyID**, Amount, Description, PaymentID

Initial ER Diagram:

