

Database Project Management

Hotel Reservation Management

Project Content : ERD , Normalization, Constraints

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DATABASE TERMINOLOGY

➤ Database

Database is an organized collection of structured data or the information. **Database** help to store and retrieve data in more efficient manner.

➤ Entity

Entity is an object in the database that exists.

➤ Attribute

Attribute refers to a database component, such as a table.

➤ Mandatory Attributes

Mandatory Attributes are the attributes that are required for the table to function and must be contained in the table.

➤ Optional Attributes

Optional Attributes are the attributes that are not essential in the table to function but add some meaning to the table.

➤ Cardinality

Cardinality can be defined as the set of elements arranged in tables and rows.

➤ Datatypes

A data type is an attribute associated with a piece of data that tells a computer system how to interpret its value. Data types mainly classified into three categories for every database.

- **String Data types**
- **Numeric Data types**
- **Date and time Data types**

➤ Constraint

In SQL, a constraint is any rule applied to a column or table that limits what data can be entered into it. Some of Important Constraint are:

➤ Primary Key

A primary key is a unique identifier for each record in a database table.

➤ **Foreign Key**

A foreign key is a column or a set of columns in one table that references the primary key columns in another table.

➤ **NOT NULL**

NOT NULL is use to specify that a column in a database table must contain a value.

➤ **Unique Key**

A unique key is a constraint that ensures the values within a column or group of columns are unique across all rows in a table

➤ **Candidate Key**

A candidate key is a set of one or more columns in a database table that can uniquely identify each record (row) within that table.

➤ **ERD / Entity Relationship Digram**

A is a visual representation of the entities, their attributes, and the relationships among them within a database or information system.

➤ **Column Level Constraint**

The Constraint that is implement in the column is known as column level constraint. It is done while creating the table.

➤ **Table Level Constraint**

The constraint that is implement in the whole table level is known as Table level Constraint. It can be implement into the table. Atler is use for table level constraint.

Entity Table

Entities	Required Attributes	Datatype	Optional Attribute	Data Type
Room	<u>Room_Number</u> Room_Type Room_availability Maximum_occupancy Room_rate Bed_Type	Int Varchar(50) Varchar(50) Varchar(50) Varchar(50) Varchar(50)		
Booking	<u>Booking_id</u> Room_Number Customer_id Number_of_Guest Date_of_arrival Date_of_Depature	Int Varchar(50) Int Varchar(50) Date Date		
Customer	<u>Customer_id</u> Customer_Name Customer_Number Email_address Address Nationality Payment_id	Int Varchar(50) Varchar(50) Varchar(50) Varchar(50) Int	Booking_history Membership_status	Varchar(10) Varchar(10)
Reservation	<u>Reservation_id</u> Customer_Id Reservation_Time Reservation_date Payment_id	Int Int Varchar(50) Date Int		
Payment Method	Payment_id Payment_type Payment_status	Int Varchar(50) Varchar(50) Date		

	Payment_date Card_details	Varchar(50)		
Room Inventory	RoomInventory_id Room_Number Inventory_id Room_Quantity	Int Varchar(50) Int Varchar(50)		
Supplier	Supplier_id Supplier_Name Supplier_Address Supplier_Contact Product_type	Int Varchar(50) Varchar(50) Varchar(50) Varchar(50)		
Inventory	Inventory_id Inventory_Name Inventory_rate Inventory_Quantity Inventory_description Purchased_date Supplier_id Inventory_Cost Purchased_date	Int Varchar(50) Varchar(50) Varchar(50) Varchar(50) Date Int Varchar(50) Date		
Department	<u>Department_id</u> Department_Name	Int Varchar(50)		
Staff_Member	<u>Staff_id</u> Staff_Name Staff_address Staff_contact Staff_hours Department_id	Int Varchar(50) Varchar(50) Varchar(50) Varchar(50) Int		
Feedback	<u>Feedback_id</u> Customer_ID	Int Int Varchar(50)		

	Room_Number	Varchar(50)		
	Comment	Varchar(50)		
	Rating			

ERD BEFORE NORMALIZATION