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# DBMS Lab 2- Converting an ER Diagram into Relational Schema

# Relational Schema

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**Railways Management System - Schema Diagram**

```

    erDiagram
        TRAIN ||--o{ TICKET : "has"
        TRAIN ||--o{ PAYMENT_INFO : "has"
        TRAIN ||--o{ FARE_TABLE : "has"
        USER ||--o{ TICKET : "has"
        USER ||--o{ PAYMENT_INFO : "has"
        USER ||--o{ FARE_TABLE : "has"
        USER ||--o{ ROUTE_INFO : "has"
        COMPARTMENT ||--o{ TICKET : "has"
        COMPARTMENT ||--o{ FARE_TABLE : "has"
        CHECKS ||--o{ TICKET : "has"

        TRAIN {
            string Train_no PK
            string Train_type
            string Train_name
            string Source
            string Destination
            string Availability
        }
        TICKET {
            string Train_type FK
            string User_id FK
            string PNR PK
            string Name
            string Travel_date
            string Seat_No
            string Compartment_Name
            string Compartment_type
            string Train_No FK
            string Departure
            string Departure_time
            string Arrival
            string Arrival_time
        }
        PAYMENT_INFO {
            string PNR FK
            string Transaction_No PK
            string Price
            string Card_No
            string Bank
        }
        FARE_TABLE {
            string Train_Type FK
            string Compartment_Type FK
            string Fare_km PK
        }
        USER {
            string User_id PK
            string Name
            string DOB
            string Address
            string Age
            string Phone
        }
        COMPARTMENT {
            string Train_No FK
            string Compartment_No PK
            string Type
            string Capacity
            string Availability
        }
        ROUTE_INFO {
            string Train_no FK
            string Starting_Station_No PK
            string Starting_Station_Name
            string Final_Station_No
            string Final_station_name
            string Distance
        }
        CHECKS {
            string Train_No FK
            string User_id FK
            string Availability_Check PK
        }
  
```

The diagram illustrates the database schema for a Railways Management System. It consists of the following tables and their attributes:

- TRAIN** (Primary Key: Train\_no): Train\_type, Train\_name, Source, Destination, Availability.
- TICKET** (Primary Key: PNR): Train\_type (Foreign Key to TRAIN), User\_id (Foreign Key to USER), Name, Travel\_date, Seat\_No, Compartment\_Name, Compartment\_type, Train\_No (Foreign Key to COMPARTMENT), Departure, Departure\_time, Arrival, Arrival\_time.
- PAYMENT INFO** (Primary Key: Transaction\_No): PNR (Foreign Key to TICKET), Price, Card No., Bank.
- FARE TABLE** (Primary Key: Fare/km): Train Type (Foreign Key to TRAIN), Compartment Type (Foreign Key to COMPARTMENT).
- USER** (Primary Key: User\_id): Name, DOB, Address, Age, Phone.
- COMPARTMENT** (Primary Key: Compartment\_No): Train\_No (Foreign Key to TRAIN), Type, Capacity, Availability.
- ROUTE INFO** (Primary Key: Starting Station No): Train\_no (Foreign Key to TRAIN), Starting Station Name, Final Station No, Final station name, Distance.
- CHECKS** (Primary Key: Availability Check): Train No. (Foreign Key to COMPARTMENT), User\_id (Foreign Key to USER).

## ER diagram in consideration

