

# **INDIAN RAILWAY MANAGEMENT DATABASE**

Developed by:

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# **CREATION OF ER MODEL**

# List of entities:

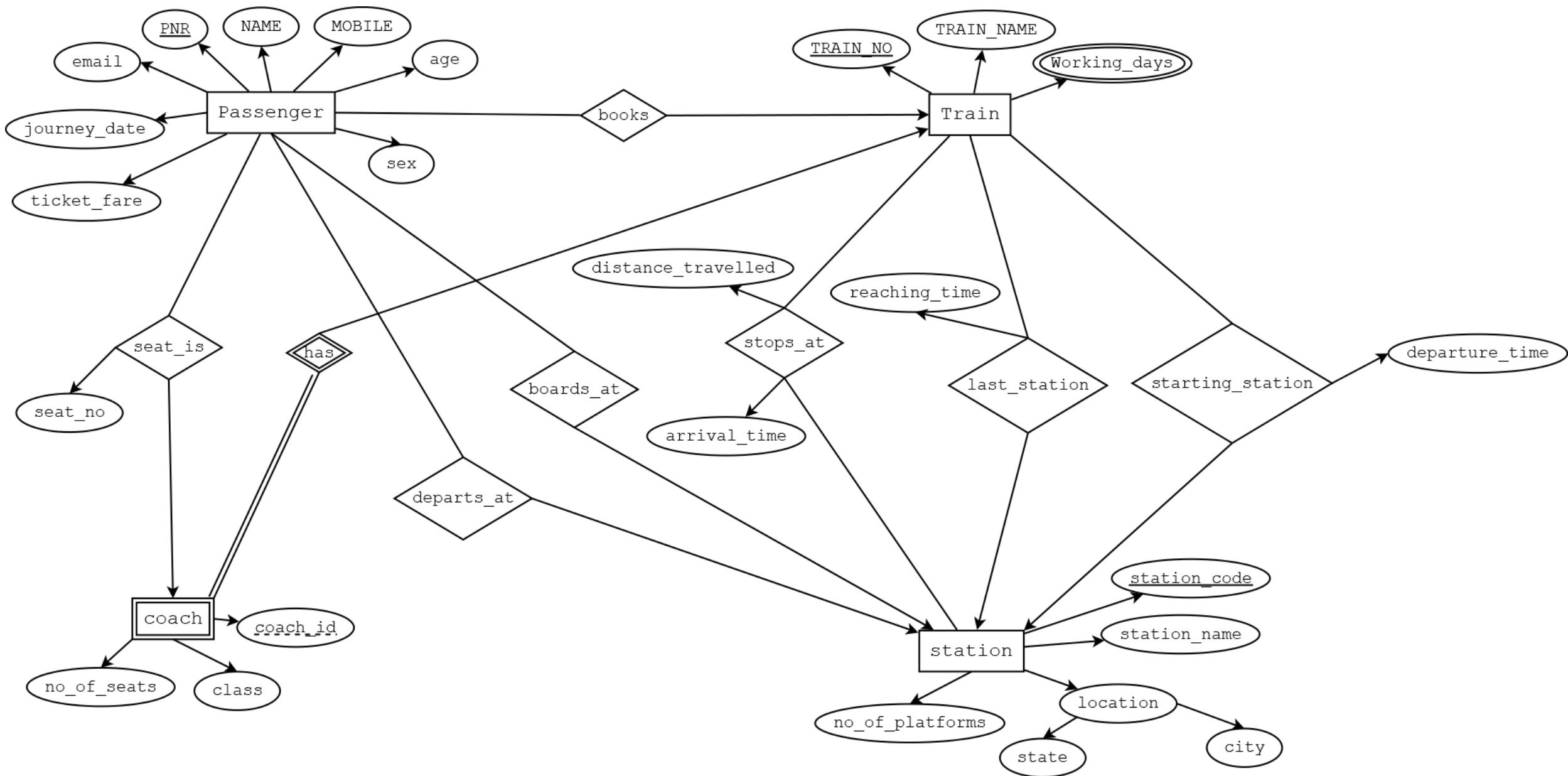
- 1)Passenger:
- **Attributes:** PNR, name, mobile, email, age, sex, journey\_date, ticket\_fare
- **Primary key:** PNR
- 2)Train:
- **Attributes:** Train\_no, Train\_name, working\_days
- **Primary key:** Train\_no
- **Multi-valued attribute:** working\_days
- 3)Station:
- **Attributes:** Station\_code, station\_name, location, no\_of\_platforms

- **Primary key:** station\_code
- **Compound Attribute:** location(subdivided into simple attributes state, city)
- 4) **Coach**(Weak entity set):
- **Attributes:** Coach\_id, class, no\_of\_seats
- **Discriminator:** Coach\_id
- **List of Relationships:**
  - 1) Passenger books train:
    - **Type:** Many to one
  - 2) passenger boards\_at station:
    - **Type:** Many to one

- 3)Passenger departs\_at station:
- **Type**: Many to one
- 4)Passenger seat\_is coach:
- **Attributes**: seat\_no
- **Type**: Many to one
- 5)Train has coach:
- **Type**: One to many
- 6)Train starting\_station station:
- **Attributes**: departure\_time
- **Type**: Many to one
- 7)Train last\_station station:
- **Attributes**: reaching\_time
- **Type**: Many to one

- 8) Train stops\_at station:
- **Attributes:** distance\_travelled, arrival\_time
- **Type:** Many to many

## ER Diagram



# **Conversion of ER Model to Relational Model**

# Relations:

- **Passenger(R1)=**{PNR, name, mobile, email, age, sex, journey\_date, ticket\_fare, booked\_train\_no, boarding\_station\_code, destination\_station\_code, allotted\_coach\_id, allotted\_seat\_no}
- **Primary Key:** PNR
- **Foreign Key:** booked\_train\_no(references train\_no in Train), boarding\_station\_code(references to station\_code in Station), destination\_station\_code(references to station\_code in Station), booked\_train\_no, allotted\_coach\_id(references to train\_no, coach\_id in coach)
- **Train(R2)=**{train\_no, train\_name, start\_station\_code, last\_station\_code, departure\_time, reaching\_time}
- **Primary Key:** train\_no
- **Foreign Key:** start\_station\_code(references to station\_code in Station), last\_station\_code(references to station\_code in Station)

- **Train\_stops\_at\_stations(R3)**= $\{train\_no, stop\_station\_code, distance\_travelled, arrival\_time\}$
- **Primary Key:** train\_no,stop\_station\_code
- **Foreign Key:** train\_no(references to train\_no in Train), stop\_station\_code(references to station\_code in Station)
- **Train\_working\_days(R4)**= $\{train\_no, working\_days\}$
- A separate table is formed since working\_days is a multi-valued attribute.
- **Primary Key:** train\_no,working\_days
- **Foreign key:** train\_no(references to train\_no in Train)
- **Station(R5)**= $\{station\_code \rightarrow station\_name, state, city, no\_of\_platforms\}$
- **Primary key:** station\_code
- **Coach(R6)**= $\{train\_no, coach\_id, class, no\_of\_seats\}$
- **Primary key:** train\_no,coach\_id
- **Foreign key:** train\_no

# Functional dependencies:

- **F1**(corresponding to R1)={ $\text{PNR} \rightarrow \text{name, mobile, email, age, sex, journey\_date, ticket\_fare, booked\_train\_no, boarding\_station\_code, destination\_station\_code, allotted\_coach\_id, allotted\_seat\_no}$ ,  $\text{mobile} \rightarrow \text{name, email, age, sex}$ ,  $\text{email} \rightarrow \text{name, mobile, age, sex}$ }
- **F2**(corresponding to R2)={ $\text{train\_no} \rightarrow \text{train\_name, start\_station\_code, last\_station\_code, departure\_time, reaching\_time}$ ,  $\text{train\_name} \rightarrow \text{train\_no, start\_station\_code, last\_station\_code, departure\_time, reaching\_time}$ }
- **F3**(corresponding to R3)={ $\text{train\_no, stop\_station\_id} \rightarrow \text{distance\_travelled, arrival\_time}$ }
- **F4**={} (No FD's)
- **F5**={ $\text{station\_code} \rightarrow \text{station\_name, state, city, no\_of\_platforms}$ }
- **F6**={ $\text{train\_no, coach\_id} \rightarrow \text{class, no\_of\_seats}$ ,  $\text{coach\_id} \rightarrow \text{class}$ }

# **Normalization**

## Normalization

R1:

$(\gamma_{1a}) (\gamma_{1b}) (\gamma_{1c}) (\gamma_{1d}) (\gamma_{1e}) (\gamma_{1f}) (\gamma_{1g}) @ (\gamma_{1h}) . . . (\gamma_{1i})$   
 $F1 = \{ PNR \rightarrow name, mobile, email, age, sex, journey\_date, ticket\_fare, booked\_train$   
 $-no, boarding\_station\_code, destination\_station\_code, allotted\_coach\_id,$   
 $(\gamma_{1j}) (\gamma_{1k}) . . . (\gamma_{1l})$   
 $allotted\_seat\_no,$   
 $(\gamma_{1m}) \quad \text{mobile} \rightarrow name, email, age, sex ,$   
 $(\gamma_{1c}) (\gamma_{1b}) (\gamma_{1d}) (\gamma_{1e}) (\gamma_{1f})$   
 $email \rightarrow name, mobile, age, sex \}$

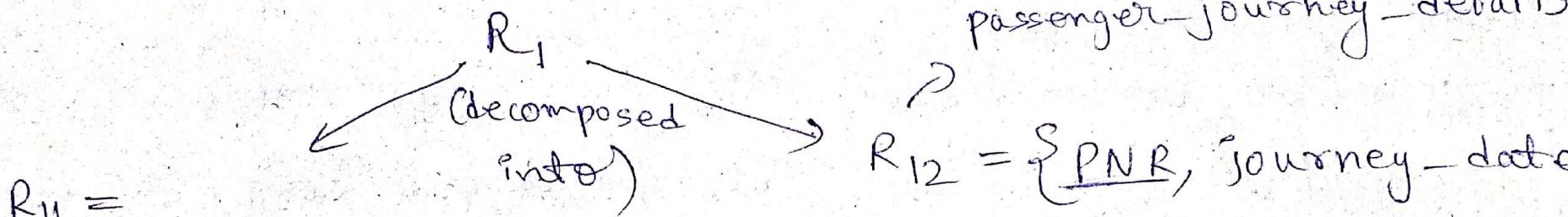
$(\gamma_{1d}) (\gamma_{1b}) (\gamma_{1c}) (\gamma_{1e}) (\gamma_{1f})$  prime attribute =  $PNR(\gamma_{1a})$

$(PNR)^+ = \text{all attributes of R1.} \therefore PNR \rightarrow \text{candidate key of R1.}$

$\therefore R1$  is in 2NF.  $\{\because \text{Partial dependency not possible}\}$ .

But mobile  $\rightarrow \gamma_{1b}, \gamma_{1d}, \gamma_{1e}, \gamma_{1f}$  are transitive  
 $(\gamma_{1c})$   
dependencies.  $\therefore R_1$  isn't in 3NF, we have to decompose.

$$(mobile)^+ = \{mobile, name, email, age, sex\}$$



$R_{11} = \{mobile, name, email, age, sex\}$

passenger-personal-info



candidate key = mobile, email

prime attributes =

mobile, (Foreign-Key)  
email

FK

candidate key = PNR (Primary Key)

passenger-journey-details

$R_{12} = \{PNR, journey-date,  
ticket-fare, booked-train-no,  
boarding-station-code,  
destination-station-code,  
allotted-coach-id, allotted-seat-no,  
mobile\}$

$F_{11} = \{ \text{mobile} \rightarrow \text{name}, \text{email}, \text{age}, \text{sex},$   
 $\quad \text{email} \rightarrow \text{mobile}, \text{name}, \text{age}, \text{sex} \}$

$F_{12} = \{ x_{1a} \rightarrow x_{1g}, x_{1h}, x_{1i}, x_{1j},$   
 $\quad x_{1k}, x_{1l}, x_{1m} \}$

no partial dependencies in  $F_{11}, F_{12}$   
(P.D's)

∴  $R_{11}, R_{12}$  in 2NF

no non-prime → non-prime in  $F_{11}, F_{12}$   
(Transitive dependencies (T.D's))

∴  $R_{11}, R_{12}$  are in 3NF

mobile, email are super-keys  
of  $R_{11}$

PNR is super key  
in  $R_{12}$ .

∴  $R_{11}$  is in BCNF.

∴  $R_{12}$  is in BCNF.

R<sub>2</sub>:

$r_{2a}$        $r_{2b}$        $r_{2c}$        $r_{2d}$   
 $F_2 = \{ \text{train\_no} \rightarrow \text{train\_name}, \text{start\_station\_code}, \text{last\_station\_code},$   
 $\text{departure\_time}, \text{reaching\_time} \}, r_{2b} \rightarrow r_{2a}, r_{2c}, r_{2d}$   
 $r_{2e}$        $r_{2f}$   
 $\{ r_{2e}, r_{2f} \}$ .

Candidate key: train\_no, train\_name

prime attributes: train\_no, train\_name.

No P.D's.  $\therefore R_2$  is in 2.NF.

No non-prime  $\rightarrow$  non-prime F.P's present.

$\therefore R_2$  is in 3.NF.

train\_no, train\_name are super keys.  $\therefore R_2$  is in BCNF.

R3: F3 = { train-no, stop-station-id. → distance-travelled, arrival time }

Candidate keys : train-no + stop station - Id

No P.D's, T.D's, Only super key is on L.H.S of F.D's.

$\therefore R_3$  is also in BCNF.

R4% → { train\_no, working - days }

$F_4 = \{3\}$  (NO F-D's) so  $R_4$  is also in BCNF.

R5: RS = {station\_code → station\_name, state, city, no-of-platforms  
 (r<sub>5a</sub>) (r<sub>5b</sub>) (r<sub>5c</sub>) (r<sub>5d</sub>) (r<sub>5e</sub>)}

Candidate key : station code

No P.D's, T.D's, station - code is super key of RS.  
∴ RS is in BCNF

R6

$F_6 = \{ \text{train-no}, \text{coach-id} \rightarrow \text{class}, \text{no-of-seats}, \text{coach-id}$   
 $\rightarrow \text{class} \}$

||

$= \{ \text{train-no}, \text{coach-id} \rightarrow \text{no-of-seats}, \text{coach-id} \rightarrow \text{class} \}$

Candidate key = train-no + coach-id.

coach-id  $\rightarrow$  subset of candidate key

$\therefore$  coach-id  $\rightarrow$  class is partial dependency.

$$(coach\_id)^+ = \{coach\_id, class\}$$

coach-class  
 $\uparrow$   
 $R_{61}$   
 $= \{coach\_id, class\}$

$$R_6 \xrightarrow{\text{(decomposition)}} R_{62}$$

coach-map  
 $\uparrow$   
 $R_{62}$   
 $= \{train\_no, no\_of\_seats, coach\_id\}$

$$F_{61} = \{coach\_id \rightarrow class\}$$

candidate key: coach\_id

no P.D's, T.D's, coach\_id is

super key  $\therefore R_{61}$  is in BCNF.

$$F_{62} = \{train\_no, coach\_id \rightarrow no\_of\_seats\}$$

candidate key: train-no

coach\_id

no P.D's, T.D's, L.H.S is super key in all F.D's  $\therefore R_{62}$  is in BCNF.

# Final Relations after Normalization:

- **Passenger\_personal\_info(R11)**={mobile, name, email, age, sex}
- **Primary Key**:mobile
- **Passenger\_journey\_details(R12)**={PNR, journey\_date, ticket\_fare, booked\_train\_no, boarding\_station\_code, destination\_station\_code, allotted\_coach\_id, allotted\_seat\_no, mobile}
- **Primary Key**:PNR
- **Foreign Key**:booked\_train\_no(references to train\_no in Train)
- boarding\_station\_code(references to station\_code in Station)
- destination\_station\_code(references to station\_code in Station)
- booked\_train\_no+allotted\_coach\_id(references to train\_no+coach\_id in Coach)
- mobile(references to mobile in Passenger\_personal\_info)

- **Train(R2)**= {train\_no, train\_name, start\_station\_code, last\_station\_code, departure\_time, reaching\_time}
- **Primary Key**: train\_no
- **Foreign Key**: start\_station\_code (references to station\_code in Station)
- last\_station\_code (references to station\_code in Station)
- **Train\_stops\_at\_stations(R3)**= {train\_no, stop\_station\_code, distance\_travelled, arrival\_time}
- **Primary Key**: train\_no+stop\_station\_code
- **Foreign Key**: train\_no (references to train\_no in Train), stop\_station\_code (references to station\_code in Station)
- **Train\_working\_days(R4)**= {train\_no, working\_days}
- **Primary Key**: train\_no+working\_days
- **Foreign Key**: train\_no (references to train\_no in Train)

- **Station(R5)**= {station\_code->station\_name, state, city, no\_of\_platforms}
- **Primary key**: station\_code
- **Coach\_class(R61)**= {coach\_id, class}
- **Primary key**: coach\_id
- **Coach\_map(R62)**= {train\_no, coach\_id, no\_of\_seats}
- **Primary key**: train\_no+coach\_id
- **Foreign key**: train\_no(references to train\_no in Train), coach\_id(references to coach\_id in Coach\_class)

# **SQL Queries to Create Tables and Insert Data**

## Creation of Tables:

```
CREATE TABLE Passenger_personal_info(
    mobile INT,
    name VARCHAR(25),
    email VARCHAR(25),
    age INT,
    sex VARCHAR(10),
    PRIMARY KEY (mobile)
);
DESC Passenger_personal_info;
CREATE TABLE Station(
    station_code VARCHAR(6),
    station_name VARCHAR(30),
    state VARCHAR(25),
    city VARCHAR(25),
    no_of_platforms INT,
    PRIMARY KEY (station_code)
);
DESC Station;
CREATE TABLE Train(
    train_no INT,
    train_name VARCHAR(35),
    start_station_code VARCHAR(6),
    last_station_code VARCHAR(6),
    departure_time DATETIME,
    reaching_time DATETIME,
    PRIMARY KEY (train_no),
    FOREIGN KEY (start_station_code) references Station(station_code),
    FOREIGN KEY (last_station_code) references Station(station_code)
);
DESC Train;
CREATE TABLE Train_stops_at_stations(
    train_no INT,
    stop_station_code VARCHAR(6),
    distance_travelled INT,
    arrival_time DATETIME,
    PRIMARY KEY (train_no,stop_station_code),
    FOREIGN KEY (train_no) references Train(train_no),
    FOREIGN KEY (stop_station_code) references Station(station_code)
);
DESC Train_stops_at_stations;
CREATE TABLE Train_working_days(
    train_no INT,
    working_days VARCHAR(10),
    PRIMARY KEY (train_no,working_days),
    FOREIGN KEY (train_no) references Train(train_no)
);
DESC Train_working_days;
```

```
CREATE TABLE Coach_class(
    coach_id VARCHAR(5),
    class VARCHAR(15),
    PRIMARY KEY (coach_id)
);
DESC Coach_class;
CREATE TABLE Coach_map(
    train_no INT,
    coach_id VARCHAR(5),
    no_of_seats INT,
    PRIMARY KEY (train_no,coach_id),
    FOREIGN KEY (train_no) REFERENCES Train(train_no),
    FOREIGN KEY (coach_id) REFERENCES Coach_class(coach_id)
);
DESC Coach_map;
CREATE TABLE Passenger_journey_details(
    PNR INT,
    mobile INT,
    journey_date DATE,
    ticket_fare FLOAT,
    booked_train_no INT,
    boarding_station_code VARCHAR(6),
    destination_station_code VARCHAR(6),
    allotted_coach_id VARCHAR(5),
    allotted_seat_no INT,
    PRIMARY KEY (PNR),
    FOREIGN KEY (booked_train_no) REFERENCES Train(train_no),
    FOREIGN KEY (boarding_station_code) REFERENCES Station(station_code),
    FOREIGN KEY (destination_station_code) REFERENCES Station(station_code),
    FOREIGN KEY (booked_train_no,allotted_coach_id) REFERENCES Coach_map(train_no,coach_id),
    FOREIGN KEY (mobile) REFERENCES Passenger_personal_info(mobile)
);
DESC Passenger_journey_details;
```

## Insertion of Data:

```
INSERT INTO Station VALUES(
    'SC','Secunderabad Junction','Telangana','Secunderabad',10
);
INSERT INTO Station VALUES(
    'KZJ','Kazipet Junction','Telangana','Kazipet',6
);
INSERT INTO Station VALUES(
    'KMT','Khammam Railway Station','Telangana','Khammam',3
);
INSERT INTO Station VALUES(
    'BZA','Vijayawada Junction','Andhra Pradesh','Vijayawada',10
);
INSERT INTO Station VALUES(
    'OGL','Ongole Railway Station','Andhra Pradesh','Ongole',3
);
INSERT INTO Station VALUES(
    'GDR','Gudur Junction','Andhra Pradesh','Gudur',4
);
INSERT INTO Station VALUES(
    'RU','Renigunta Junction','Andhra Pradesh','Renigunta',8
);
INSERT INTO Station VALUES(
    'TPTY','Tirupati Railway Station','Andhra Pradesh','Tirupati',5
);
INSERT INTO Station VALUES(
    'SKZR','Sirpur Kaghaznagar Railway Station','Telangana','Sirpur Kaghaznagar',3
);
INSERT INTO Station VALUES(
    'PDPL','Peddapalli Junction','Telangana','Peddapalli',3
);
INSERT INTO Station VALUES(
    'ALER','Aler Railway Station','Telangana','Aler',2
);
INSERT INTO Station VALUES(
    'VKB','Vikarabad Junction','Telangana','Vikarabad',3
);
INSERT INTO Station VALUES(
    'BIDR','Bidar Railway Station','Karnataka','Bidar',3
);
INSERT INTO Station VALUES(
    'NLR','Nellore Railway Station','Andhra Pradesh','Nellore',4
);
INSERT INTO Station VALUES(
    'GNT','Guntur Junction','Andhra Pradesh','Guntur',9
);
INSERT INTO Station VALUES(
    'MRGA','Miryalaguda Railway Station','Telangana','Miryalaguda',3
```

```

);
INSERT INTO Station VALUES(
    'NLDA','Nalgonda Railway Station','Telangana','Nalgonda',3
);
SELECT * FROM Station;
INSERT INTO Train VALUES(
    12764,'Padmavathi SF Express','SC','TPTY','18:40','7:15'
);
INSERT INTO Train VALUES(
    12763,'Padmavathi SF Express','SC','TPTY','16:55','5:55'
);
DELETE FROM Train where train_no=12763;
INSERT INTO Train VALUES(
    12758,'Kaghaznagar SF Express','SKZR','SC','14:50','20:20'
);
INSERT INTO Train VALUES(
    12757,'Kaghaznagar SF Express','SC','SKZR','8:20','13:40'
);
INSERT INTO Train VALUES(
    17012,'Bidar Express','SKZR','BIDR','11:55','22:15'
);
INSERT INTO Train VALUES(
    20702,'Secunderabad Vande Bharat Express','TPTY','SC','15:15','23:30'
);
INSERT INTO Train VALUES(
    20701,'Tirupati Vande Bharat Express','SC','TPTY','6:15','14:34'
);
SELECT * FROM Train;
INSERT INTO Train_stops_at_stations VALUES(
    12764,'SC',0,'18:40'
);
INSERT INTO Train_stops_at_stations VALUES(
    12764,'KZJ',131,'20:28'
);
INSERT INTO Train_stops_at_stations VALUES(
    12764,'KMT',249,'22:19'
);
INSERT INTO Train_stops_at_stations VALUES(
    12764,'BZA',348,'00:15'
);
INSERT INTO Train_stops_at_stations VALUES(
    12764,'OGL',486,'2:38'
);
INSERT INTO Train_stops_at_stations VALUES(
    12764,'GDR',642,'4:45'
);
INSERT INTO Train_stops_at_stations VALUES(
    12764,'RU',725,'6:23'
);
INSERT INTO Train_stops_at_stations VALUES(
    12764,'TPTY',735,'7:15'
);

INSERT INTO Train_stops_at_stations VALUES(

```

```
    12763, 'TPTY', 0, '16:55'
);
INSERT INTO Train_stops_at_stations VALUES(
    12763, 'GDR', 93, '18:43'
);
INSERT INTO Train_stops_at_stations VALUES(
    12763, 'OGL', 248, '20:58'
);
INSERT INTO Train_stops_at_stations VALUES(
    12763, 'BZA', 386, '23:15'
);
INSERT INTO Train_stops_at_stations VALUES(
    12763, 'KMT', 485, '00:44'
);
INSERT INTO Train_stops_at_stations VALUES(
    12763, 'KZJ', 603, '2:43'
);
INSERT INTO Train_stops_at_stations VALUES(
    12758, 'SKZR', 0, '14:50'
);
INSERT INTO Train_stops_at_stations VALUES(
    12758, 'PDPL', 89, '15:58'
);
INSERT INTO Train_stops_at_stations VALUES(
    12758, 'KZJ', 165, '17:04'
);
INSERT INTO Train_stops_at_stations VALUES(
    12758, 'ALER', 227, '18:03'
);
INSERT INTO Train_stops_at_stations VALUES(
    12758, 'SC', 296, '20:20'
);
INSERT INTO Train_stops_at_stations VALUES(
    12757, 'SC', 0, '8:20'
);
INSERT INTO Train_stops_at_stations VALUES(
    12757, 'ALER', 69, '9:04'
);
INSERT INTO Train_stops_at_stations VALUES(
    12757, 'KZJ', 131, '10:08'
);
INSERT INTO Train_stops_at_stations VALUES(
    12757, 'PDPL', 207, '11:29'
);
INSERT INTO Train_stops_at_stations VALUES(
    12757, 'SKZR', 296, '13:40'
);
INSERT INTO Train_stops_at_stations VALUES(
    17012, 'SKZR', 0, '11:55'
);
INSERT INTO Train_stops_at_stations VALUES(
    17012, 'PDPL', 89, '13:11'
);
INSERT INTO Train_stops_at_stations VALUES(
```

```
    17012,'KZJ',165,'14:58'
);
INSERT INTO Train_stops_at_stations VALUES(
    17012,'SC',296,'18:05'
);
INSERT INTO Train_stops_at_stations VALUES(
    17012,'VKB',368,'19:44'
);
INSERT INTO Train_stops_at_stations VALUES(
    17012,'BIDR',460,'22:15'
);
INSERT INTO Train_stops_at_stations VALUES(
    20701,'SC',0,'6:15'
);
INSERT INTO Train_stops_at_stations VALUES(
    20701,'NLDA',109,'7:29'
);
INSERT INTO Train_stops_at_stations VALUES(
    20701,'MRGA',147,'7:49'
);
INSERT INTO Train_stops_at_stations VALUES(
    20701,'GNT',281,'9:35'
);
INSERT INTO Train_stops_at_stations VALUES(
    20701,'OGL',413,'11:13'
);
INSERT INTO Train_stops_at_stations VALUES(
    20701,'NLR',530,'12:34'
);
INSERT INTO Train_stops_at_stations VALUES(
    20701,'TPTY',662,'14:34'
);
INSERT INTO Train_stops_at_stations VALUES(
    20702,'TPTY',0,'15:15'
);
INSERT INTO Train_stops_at_stations VALUES(
    20702,'NLR',131,'16:44'
);
INSERT INTO Train_stops_at_stations VALUES(
    20702,'OGL',248,'17:58'
);
INSERT INTO Train_stops_at_stations VALUES(
    20702,'GNT',380,'19:45'
);
INSERT INTO Train_stops_at_stations VALUES(
    20702,'MRGA',514,'21:17'
);
INSERT INTO Train_stops_at_stations VALUES(
    20702,'NLDA',552,'21:49'
);
INSERT INTO Train_stops_at_stations VALUES(
    20702,'SC',662,'23:30'
);
SELECT * FROM Train_stops_at_stations;
```

```
INSERT INTO Train_working_days VALUES(
    12764, 'MON'
);
INSERT INTO Train_working_days VALUES(
    12764, 'TUE'
);
INSERT INTO Train_working_days VALUES(
    12764, 'THU'
);
INSERT INTO Train_working_days VALUES(
    12764, 'FRI'
);
INSERT INTO Train_working_days VALUES(
    12764, 'SUN'
);
INSERT INTO Train_working_days VALUES(
    12763, 'MON'
);
INSERT INTO Train_working_days VALUES(
    12763, 'TUE'
);
INSERT INTO Train_working_days VALUES(
    12763, 'WED'
);
INSERT INTO Train_working_days VALUES(
    12763, 'FRI'
);
INSERT INTO Train_working_days VALUES(
    12763, 'SAT'
);
INSERT INTO Train_working_days VALUES(
    12758, 'MON'
);
INSERT INTO Train_working_days VALUES(
    12758, 'TUE'
);
INSERT INTO Train_working_days VALUES(
    12758, 'WED'
);
INSERT INTO Train_working_days VALUES(
    12758, 'THU'
);
INSERT INTO Train_working_days VALUES(
    12758, 'FRI'
);
INSERT INTO Train_working_days VALUES(
    12758, 'SAT'
);
INSERT INTO Train_working_days VALUES(
    12758, 'SUN'
);
INSERT INTO Train_working_days VALUES(
    12757, 'MON'
```

```
);  
INSERT INTO Train_working_days VALUES(  
    12757, 'TUE'  
);  
INSERT INTO Train_working_days VALUES(  
    12757, 'WED'  
);  
INSERT INTO Train_working_days VALUES(  
    12757, 'THU'  
);  
INSERT INTO Train_working_days VALUES(  
    12757, 'FRI'  
);  
INSERT INTO Train_working_days VALUES(  
    12757, 'SAT'  
);  
INSERT INTO Train_working_days VALUES(  
    12757, 'SUN'  
);  
INSERT INTO Train_working_days VALUES(  
    17012, 'MON'  
);  
INSERT INTO Train_working_days VALUES(  
    17012, 'TUE'  
);  
INSERT INTO Train_working_days VALUES(  
    17012, 'WED'  
);  
INSERT INTO Train_working_days VALUES(  
    17012, 'THU'  
);  
INSERT INTO Train_working_days VALUES(  
    17012, 'FRI'  
);  
INSERT INTO Train_working_days VALUES(  
    17012, 'SAT'  
);  
INSERT INTO Train_working_days VALUES(  
    17012, 'SUN'  
);  
INSERT INTO Train_working_days VALUES(  
    20701, 'MON'  
);  
INSERT INTO Train_working_days VALUES(  
    20701, 'WED'  
);  
INSERT INTO Train_working_days VALUES(  
    20701, 'THU'  
);  
INSERT INTO Train_working_days VALUES(  
    20701, 'FRI'  
);  
INSERT INTO Train_working_days VALUES(  
    20701, 'SAT'
```

```
);  
INSERT INTO Train_working_days VALUES(  
    20701,'SUN'  
);  
INSERT INTO Train_working_days VALUES(  
    20702,'MON'  
);  
INSERT INTO Train_working_days VALUES(  
    20702,'WED'  
);  
INSERT INTO Train_working_days VALUES(  
    20702,'THU'  
);  
INSERT INTO Train_working_days VALUES(  
    20702,'FRI'  
);  
INSERT INTO Train_working_days VALUES(  
    20702,'SAT'  
);  
INSERT INTO Train_working_days VALUES(  
    20702,'SUN'  
);  
SELECT * FROM Train_working_days;  
INSERT INTO Coach_class VALUES(  
    'H1','First Class AC'  
);  
INSERT INTO Coach_class VALUES(  
    'A1','AC 2-Tier'  
);  
INSERT INTO Coach_class VALUES(  
    'B1','AC 3-Tier'  
);  
INSERT INTO Coach_class VALUES(  
    'B2','AC 3-Tier'  
);  
INSERT INTO Coach_class VALUES(  
    'B3','AC 3-Tier'  
);  
INSERT INTO Coach_class VALUES(  
    'B4','AC 3-Tier'  
);  
INSERT INTO Coach_class VALUES(  
    'S1','Sleeper'  
);  
INSERT INTO Coach_class VALUES(  
    'S2','Sleeper'  
);  
INSERT INTO Coach_class VALUES(  
    'S3','Sleeper'  
);  
INSERT INTO Coach_class VALUES(  
    'S4','Sleeper'  
);  
INSERT INTO Coach class VALUES(  
    'S5','Sleeper'  
);  
SELECT * FROM Coach_class;
```

```
'S5','Sleeper'
);
INSERT INTO Coach_class VALUES(
'S6','Sleeper'
);
INSERT INTO Coach_class VALUES(
'C1','AC Chair Car'
);
INSERT INTO Coach_class VALUES(
'C2','AC Chair Car'
);
INSERT INTO Coach_class VALUES(
'C3','AC Chair Car'
);
INSERT INTO Coach_class VALUES(
'C4','AC Chair Car'
);
INSERT INTO Coach_class VALUES(
'C5','AC Chair Car'
);
INSERT INTO Coach_class VALUES(
'C6','AC Chair Car'
);
INSERT INTO Coach_class VALUES(
'D1','Second Sitting'
);
INSERT INTO Coach_class VALUES(
'D2','Second Sitting'
);
INSERT INTO Coach_class VALUES(
'D3','Second Sitting'
);
INSERT INTO Coach_class VALUES(
'E1','Executive Chair Car'
);
INSERT INTO Coach_class VALUES(
'E2','Executive Chair Car'
);
SELECT * FROM Coach_class;
INSERT INTO Coach_map VALUES(
12764,'H1',24
);
INSERT INTO Coach_map VALUES(
12764,'A1',48
);
INSERT INTO Coach_map VALUES(
12764,'B1',64
);
INSERT INTO Coach_map VALUES(
12764,'B2',64
);
INSERT INTO Coach_map VALUES(
12764,'B3',64
);
```

```
INSERT INTO Coach_map VALUES(
    12764, 'S1',72
);
INSERT INTO Coach_map VALUES(
    12764, 'S2',72
);
INSERT INTO Coach_map VALUES(
    12764, 'S3',72
);
INSERT INTO Coach_map VALUES(
    12764, 'S4',72
);
INSERT INTO Coach_map VALUES(
    12764, 'S5',72
);
INSERT INTO Coach_map VALUES(
    12763, 'H1',24
);
INSERT INTO Coach_map VALUES(
    12763, 'A1',48
);
INSERT INTO Coach_map VALUES(
    12763, 'B1',64
);
INSERT INTO Coach_map VALUES(
    12763, 'B2',64
);
INSERT INTO Coach_map VALUES(
    12763, 'B3',64
);
INSERT INTO Coach_map VALUES(
    12763, 'S1',72
);
INSERT INTO Coach_map VALUES(
    12763, 'S2',72
);
INSERT INTO Coach_map VALUES(
    12763, 'S3',72
);
INSERT INTO Coach_map VALUES(
    12763, 'S4',72
);
INSERT INTO Coach_map VALUES(
    12763, 'S5',72
);
INSERT INTO Coach_map VALUES(
    12763, 'S5',72
);
INSERT INTO Coach_map VALUES(
    12758, 'C1',73
);
INSERT INTO Coach_map VALUES(
    12758, 'D1',108
);
```

```
INSERT INTO Coach_map VALUES(
    12758, 'D2',108
);
INSERT INTO Coach_map VALUES(
    12757, 'C1',73
);
INSERT INTO Coach_map VALUES(
    12757, 'D1',108
);
INSERT INTO Coach_map VALUES(
    12757, 'D2',108
);
INSERT INTO Coach_map VALUES(
    17012, 'C1',73
);
INSERT INTO Coach_map VALUES(
    17012, 'D1',108
);
INSERT INTO Coach_map VALUES(
    17012, 'D2',108
);
INSERT INTO Coach_map VALUES(
    17012, 'D3',108
);
INSERT INTO Coach_map VALUES(
    20701, 'C1',78
);
INSERT INTO Coach_map VALUES(
    20701, 'C2',78
);
INSERT INTO Coach_map VALUES(
    20701, 'C3',78
);
INSERT INTO Coach_map VALUES(
    20701, 'C4',78
);
INSERT INTO Coach_map VALUES(
    20701, 'C5',78
);
INSERT INTO Coach_map VALUES(
    20701, 'E1',56
);
INSERT INTO Coach_map VALUES(
    20701, 'E2',56
);
INSERT INTO Coach_map VALUES(
    20702, 'C1',78
);
INSERT INTO Coach_map VALUES(
    20702, 'C2',78
);
INSERT INTO Coach_map VALUES(
    20702, 'C3',78
);
```

```

INSERT INTO Coach_map VALUES(
    20702, 'C4',78
);
INSERT INTO Coach_map VALUES(
    20702, 'C5',78
);
INSERT INTO Coach_map VALUES(
    20702, 'E1',56
);
INSERT INTO Coach_map VALUES(
    20702, 'E2',56
);
SELECT * FROM Coach_map;
INSERT INTO Passenger_personal_info VALUES(
    1234567890,'R.Sai Kartik','rsk@gmail.com',19,'Male'
);
INSERT INTO Passenger_personal_info VALUES(
    1203456789,'K.Manideep','km@gmail.com',19,'Male'
);
INSERT INTO Passenger_personal_info VALUES(
    1023456789,'R.Divija','rd@gmail.com',20,'Female'
);
INSERT INTO Passenger_personal_info VALUES(
    1234506789,'R.Manohar','rmn@gmail.com',54,'Male'
);
INSERT INTO Passenger_personal_info VALUES(
    1267890345,'R.Gaja Lakshmi','rg@gmail.com',50,'Female'
);
INSERT INTO Passenger_personal_info VALUES(
    1234890567,'R.Hemanth','rh@gmail.com',40,'Male'
);
INSERT INTO Passenger_personal_info VALUES(
    1672348905,'K.Manasa','km@gmail.com',22,'Female'
);
SELECT * FROM Passenger_personal_info;
INSERT INTO Passenger_journey_details VALUES(
    '876543210',1234567890,'2024-03-31',187.25,12764,'SC','KZJ','S2',70
);
INSERT INTO Passenger_journey_details VALUES(
    '876543211',1203456789,'2024-03-31',187.25,12764,'SC','KZJ','S2',69
);
INSERT INTO Passenger_journey_details VALUES(
    '876543212',1023456789,'2024-03-31',187.25,12764,'SC','KZJ','S2',68
);
INSERT INTO Passenger_journey_details VALUES(
    '876543213',1234567890,'2024-04-05',87.25,17012,'KZJ','SC','D2',103
);
INSERT INTO Passenger_journey_details VALUES(
    '876543214',1234506789,'2024-04-05',1375.85,20701,'SC','TPTY','C3',75
);
INSERT INTO Passenger_journey_details VALUES(
    '876543215',1267890345,'2024-04-03',3315.85,20702,'TPTY','SC','E1',47
);
INSERT INTO Passenger_journey_details VALUES(

```

```
'876543216',1234890567,'2024-04-14',102.25,17012,'KZJ','SC','D1',17
);
INSERT INTO Passenger_journey_details VALUES(
  '876543217',1672348905,'2024-04-14',312.25,12757,'SC','KZJ','C1',32
);
SELECT * FROM Passenger_journey_details;
```