**3. MAPPING OF ERD TO RELATIONAL MODEL**

**Step 1:MAPPING OF STRONG ENTITY TYPE**

|  |  |  |
| --- | --- | --- |
| **S.no** | **Entity Type** | **Relation** |
| 1 | User | User (Email\_ID, username, gender, age, mobile, Password) |
| 2 | Passenger | Passenger (PNR ,Gender, Passenger\_name, Age,Booked\_By) |
| 3 | Train | Train (Train\_id, Train\_name, Days\_available, Train\_type) |
| 4 | Station | Station (Station\_ID, Station\_name) |

**Step 2: MAPPING OF WEAK ENTITY TYPE**

|  |  |  |
| --- | --- | --- |
| **S.no** | **Entity Type** | **Relation** |
| 1 | Route | Route(Train\_ID, Stop\_number ,Source\_distance, Arrival\_time, Departure\_time) |
| 2 | Train Status | Train\_status(Train\_ID, Available\_Date, Booked\_seats1, Waiting\_seats1, Available\_seats1, Booked\_seats2, Waiting\_seats2, Available\_seats2, Booked\_seats3, Waiting\_seats3, Available\_seats3) |

**Step 3: MAPPING OF 1:M RELATIONSHIP**

|  |  |  |  |
| --- | --- | --- | --- |
| **Relation** | **Entities** | **Approach** | **Relation** |
| Starts From | Train,Station | Foreign Key | Train(Train\_ID,Train\_name,Days\_available, Train\_type,Fare\_class1, Fare\_class2, Fare\_class3, Seats\_class1, Seats\_class2, Seats\_class3) |
| Ends at | Train, Station | Foreign key | Train(Train\_ID,Train\_name,Days\_available, Train\_type,Fare\_class1, Fare\_class2, Fare\_class3, Seats\_class1, Seats\_class2, Seats\_class3) |
| Show Source | Station, Passenger | Foreign Key | Passenger (PNR, Seat\_number, Class, Name, Age, Gender, Fare , Source\_ ID) |
| Show Destination | Station, Passenger | Foreign Key | Passenger (PNR, Seat\_number, Class, Name, Age, Gender, Fare , Destination\_ ID) |

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**Step 4: MAPPING OF M:N RELATIONSHIP**

|  |  |  |  |
| --- | --- | --- | --- |
| **Relation** | **Entities** | **Approach** | **Relation** |
| Consists of | Station, Route | Cross-reference | Route\_HAS\_Station(Station\_ID,Train\_ID, Stop\_number) |

**Step 5: MAPPING OF N-ARY RELATIONSHIP**

|  |  |  |  |
| --- | --- | --- | --- |
| **Relation)** | **Entities** | **Approach** | **Relation** |
| Books | User, Passenger, Train\_status | Cross-reference | Books(EmailID, PNR , Train\_ID, Available\_Date, Reservation\_Date, Reservation\_status |

**NO 1:1 RELATIONSHIP,AND ALSO MULTIVALUED ATTRIBUTES**

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**5.REFERENCES**

**1. ELMARSI AND NAVATHE : FUNDAMENTAL OF DATABASE SYSTEMS**

**2.ER diagrams examples from Google .**

**3.REFERRED TO** [**www.indianrail.gov.in**](http://www.indianrail.gov.in) **and** [**www.irctc.co.in**](http://www.irctc.co.in)

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