A DATABASE DESIGN FOR METATRAVEL

by Dataverse:

RAZAN AL HAJJAR

CYNTHIA FRANCIS

AHMAD HUSSEIN

ALI SALMAN

Submitted to:

DR. RAMZI HARATY in partial fulfillment of the requirements for the course
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I. **<u>Table of Contents:</u>**

II. __Copyright Notice__

III. <u>**Introduction**</u>

As the world is evolving, technology has accelerated its pace and has integrated itself in humans' daily lives. To keep up with this pace and stay applicable, several companies have begun mapping out their futuristic plans. For instance, Meta – formerly known as Facebook – has announced its plan of creating a metaverse.

While the metaverse might seem like a relatively new concept, the idea of virtual reality is not. In fact, the term "metaverse" dates back to 1982 in Neil Stevenson's science fiction novel "Snow Crash." The characters from the novel escape from dystopian Los Angeles, plagued by hyperinflation, inequality, and illness, and immerse themselves into a virtual world called the "metaverse" as an escape from their crumbling society (Zenou, 2022).

Inspired by the novel, Meta's CEO, Mark Zuckerberg, announced his vision of people inhabiting digital environments during the company's rebranding event in October 2021 (Kelly, 2021). During that event, Meta shared its vision of building the metaverse, where users can (virtually) socialize, work, and even travel.

With the intention of bringing this vision to life, the Dataverse team was assigned to create a database for the company's metaverse travel agency, called "Metatravel." The agency's main role is to arrange users' travel inside the metaverse.

Ladies and gentlemen, on behalf of the co-captains, welcome onboard. Please make sure that your seat is comfortable, and your Meta-helmet is correctly fastened. Please turn off all personal electronic devices, including laptops and cell phones. The travel through the database design is about to begin. Hope you enjoy your trip with us.

IV.   <u>System Description and Constraints</u>

Metatravel is a virtual travel agency in the metaverse. The agency's mission statement is, "to inspire travelers – in air, space, on water, and land – all through their screens." Metatravel's role is to assist its customers with their travel arrangements and concerns.

The agency is spread across several branches in different locations. It is composed of various departments, each attending to our customers – whether it be on or behind the scenes. Well-trained travel agents are in direct contact with customers. Each user is assigned an agent to help them choose the destination, set a budget, purchase travel tickets, and book accommodations. Other employees, such as financial managers and accountants, work behind the scenes to ensure that all of the customer's needs are met. Employees are remunerated for their work in cryptocurrency, namely Bitcoin (BTC).

With Metatravel, users have the freedom to choose the mode of transportation that best suits them – flights, trains, cruises, or spaceships. Furthermore, through the dealerships established with partners, users are provided with tickets and/or accommodations at reduced costs. Some of the partners include Meta-Hotel, Meta-Airways, Meta-Railways, Meta-Cruises, and Meta-Space.
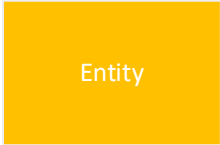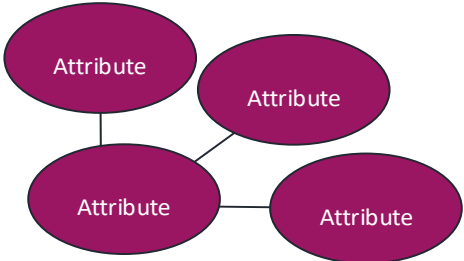
First, users contact a branch of the travel agency, providing it with their personal information - name, date of birth, passport ID, address, and emergency contact. In the interim, an employee drafts a contract for the user to sign with an expiration date.

Second, upon agreeing to the contract legalities, the user must electronically sign it. Some contracts may be refundable. Post-signing the binding contract, the customer settles fees and gains loyalty points for choosing Metatravel. According to purchase history and those loyalty points, discounts are applied with a certain formula. With every trip, the user gains five points; 35 points lead to 15% discount on the total cost; 70 points lead to 30% discount; 100 points lead to 50% discount. After that, the points are reset.

After purchasing the ticket, the user, with the agent's guidance, books the hotel room of their preference. In each hotel, miscellaneous meal plans are offered. For reference, star-rating is provided for every hotel as additional guidance for the user.

V.   ER Diagram Symbols

To ease your understanding of the ER diagram, ER diagram symbol annotation is inserted below.

Name	Symbol
Entity Type	Entity
Weak Entity Type	Weak Entity
Attribute	Attribute
Key Attribute	Attribute
Multivalued Key	Multivalued Attribute
Partial Key	Partial Key
Derived Attribute	Derived Attribute
Composite Attribute	Attribute Attribute Attribute Attribute

Relationship	Relationship
Identifying Relationship	Identifying Relationship
Total Participation	
Partial Participation	

VI.   ER Diagram for Metatravel[1]

VII.   <u>Entity Types</u>
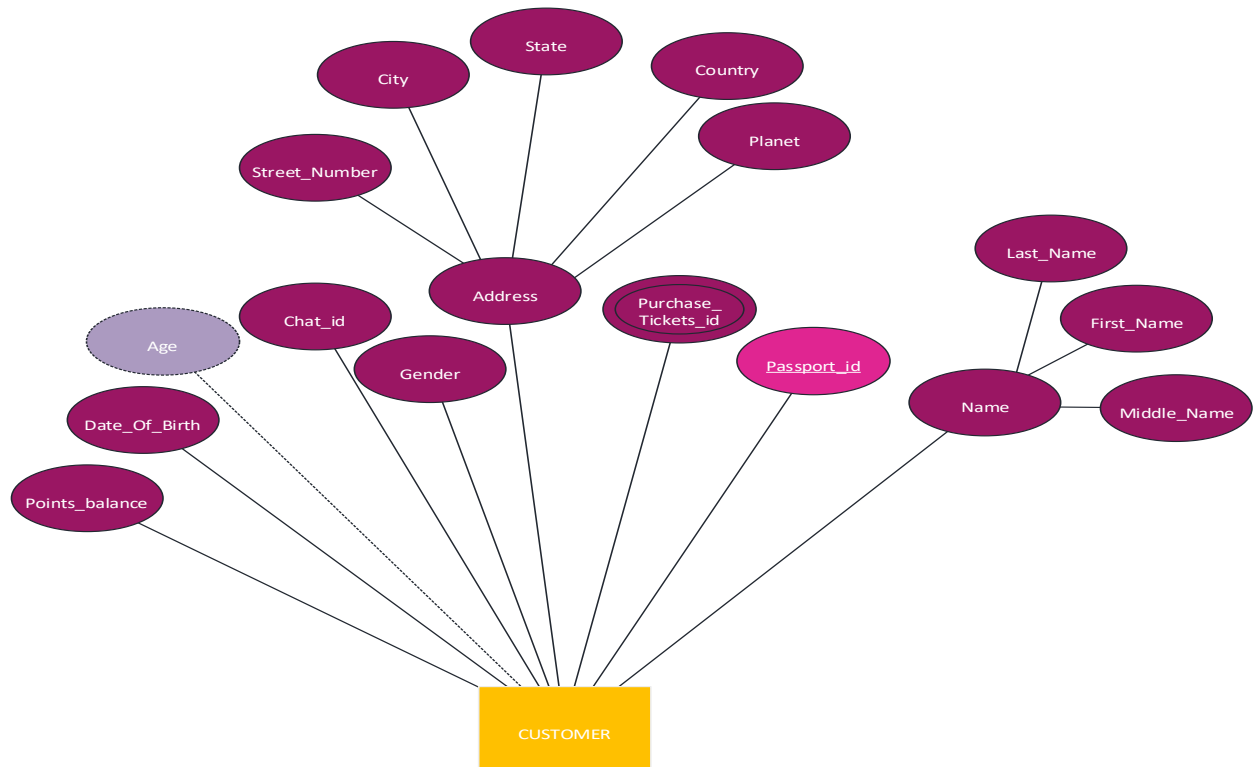
1. <u>Customer:</u>

The **CUSTOMER** is the metaverse user who plans on traveling. He or she **CONTACTS** a certain **BRANCH** of Meta-travel. The **CUSTOMER** **SIGNS** the **CONTRACT**, **BOOKS** a **TICKET**, **PAYS** the **BILL**, and **STAYS_AT** a **HOTEL**.

The **CUSTOMER**'s key attribute is his or her Passport_id. All of the **CUSTOMER**'s attributes are listed below:

- Passport_id: Consists of 9 digits.
- Name: Specifies the customer's name as a composite attribute consisting of the First_Name, Middle_Name, and Family_Name.
- Chat_id: Consists of the 8-digit number the customer uses to communicate
- Date_Of_Birth: Mentions the user's date of birth in the format: MM/DD/YYYY
- Age: Is a derived attribute from Date_Of_Birth.

- **Address:** Stores the user's address as a composite attribute consisting of the Street_Number, City, State, Country, and Planet.
- **Gender:** Specifies the user's gender.
- **Purchase_Tickets_id:** Stores the IDs of the customer's previously purchased tickets as a multivalued attribute.
- **Points_balance:** Shows the customer's loyalty points balance.

2. __Employee__
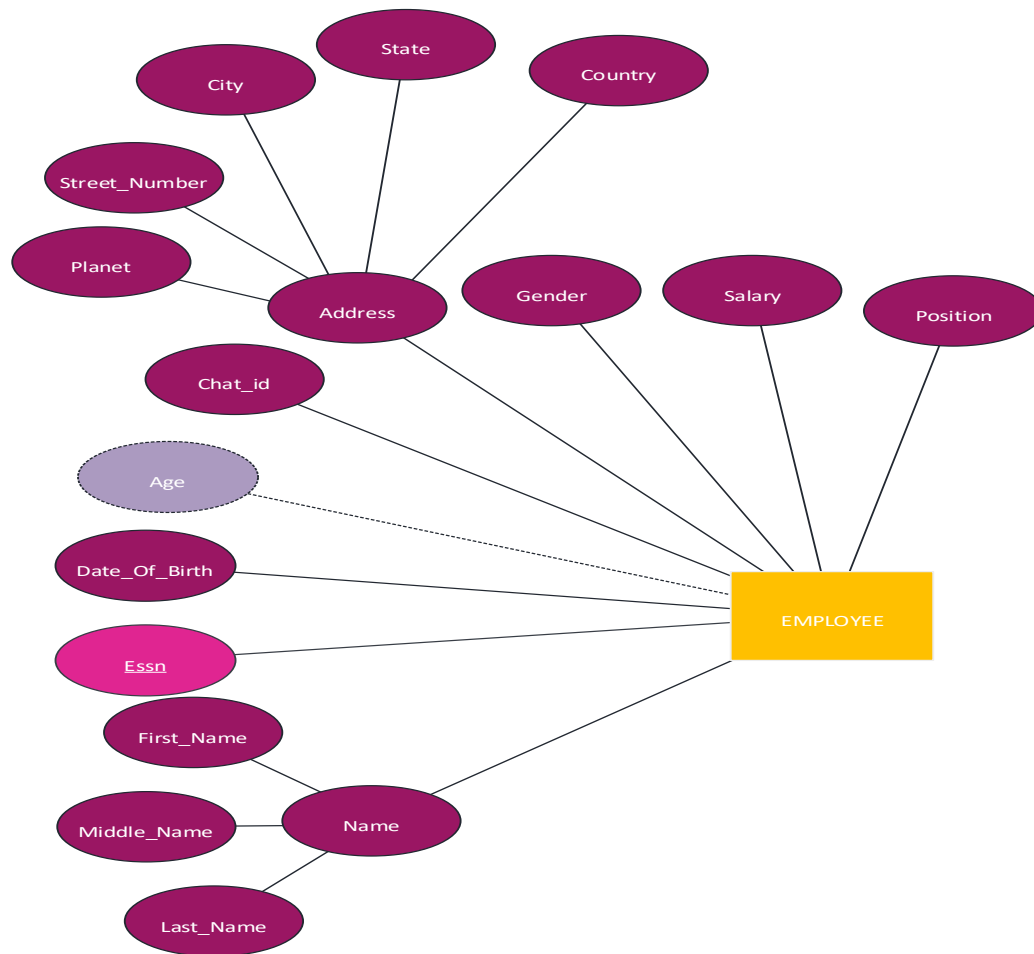
Each **EMPLOYEE MANAGES** a **CUSTOMER**. The **EMPLOYEE DRAFTS** a **CONTRACT**, **RECOMMENDS** a **HOTEL**, and **WORKS_FOR** a **DEPARTMENT**. An **EMPLOYEE** **SUPERVISES** another **EMPLOYEE** as a *recursive or self-referencing relationship type.*

The **EMPLOYEE**'s key attribute is his or her Essn. All of the **EMPLOYEE**'s attributes are listed below:

- Essn: Consists of the employee's social security number of 9 digits.
- Name: Specifies the employee's name as a composite attribute consisting of the First_Name, Middle_Name, and Family_Name.
- Chat_id: Consists of the 8-digit number the employee uses to communicate
- Date_Of_Birth: Mentions the employee's date of birth in the format: MM/DD/YYYY.
- Age: Is a derived attribute from Date_Of_Birth.
- Address: Stores the employee's address as a composite attribute consisting of the Street_Number, City, State, Country, and Planet.
- Gender: Specifies the employee's gender.
- Salary: Includes the employee's monthly salary in Bitcoin (BTC).
- Position: Identifies the employee's work position in the agency.

3. Ticket
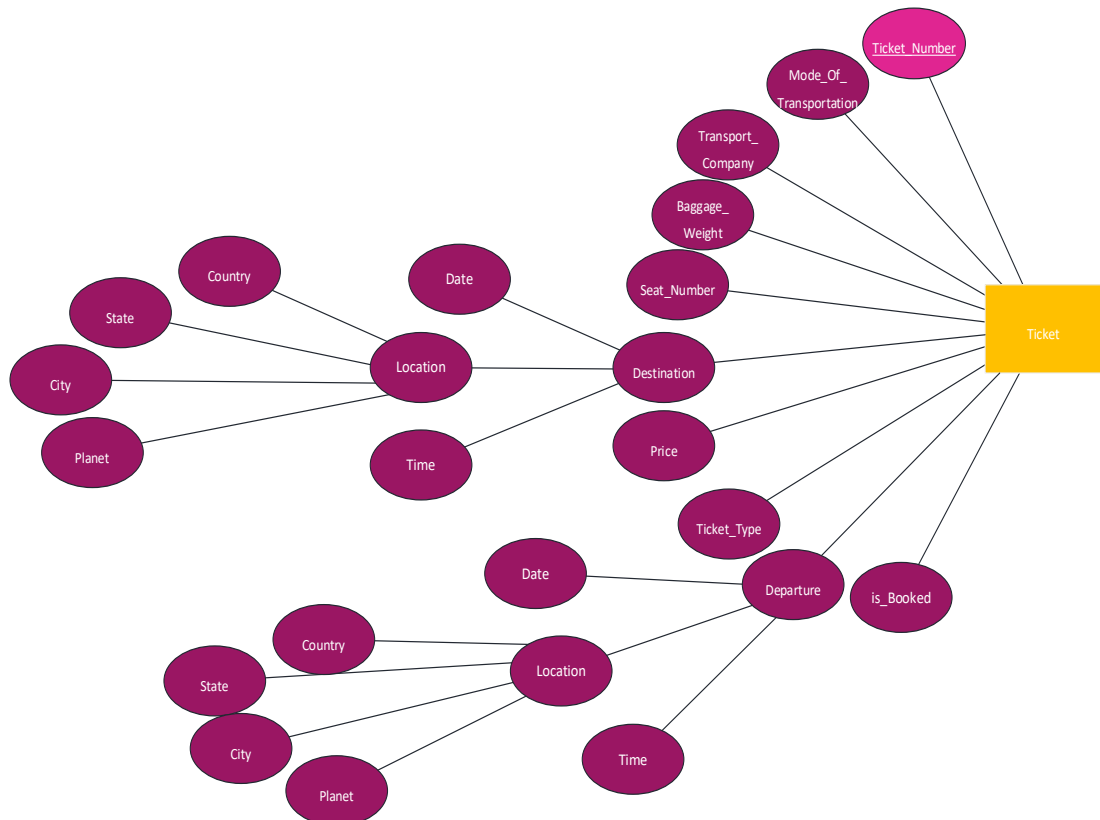
After the **PARTNER PROVIDES** the **TICKET**, the **CUSTOMER BOOKS** the **TICKET** as a form of verification for travelling. A **TICKET CONNECTS TO** another **TICKET** as a *recursive or self-referencing relationship type.* Each relationship instance relates two distinct **TICKETs** in the case of connecting tickets. Sometimes, the **CUSTOMER** might not be able to reach destination in a single trip. This gap is filled by connecting **TICKETs**.

The **TICKET**'s key attribute is the Ticket_number. All of the **TICKET**'s attributes are listed below:

- Ticket_number: Consists of the unique 7-digit number corresponding to each ticket purchased.
- Mode_Of_Transportation: Includes the mode of transportation chosen.
- Transport_Company: Mentions the name of the company providing the transportation service. Every transport company provides only one mode of transportation.
- Baggage_Weight: Specifies the maximum permitted weight of the baggage.
- Seat_Number: Stores the seat number given to the customer.
- Departure: Is a composite attribute composed of the departure date, time and location [as a composite attribute of the City, State, Country, Planet].
- Destination: Is a composite attribute composed of the arrival date, time and location [as a composite attribute of the City, State, Country, Planet].
- Price: States the ticket's price in Bitcoin (BTC).
- Ticket_Type: Describes whether the ticket is one-way or round-trip.
- Is_Booked: Specifies whether the ticket is the booked status or not.

4. <u>Hotel</u>
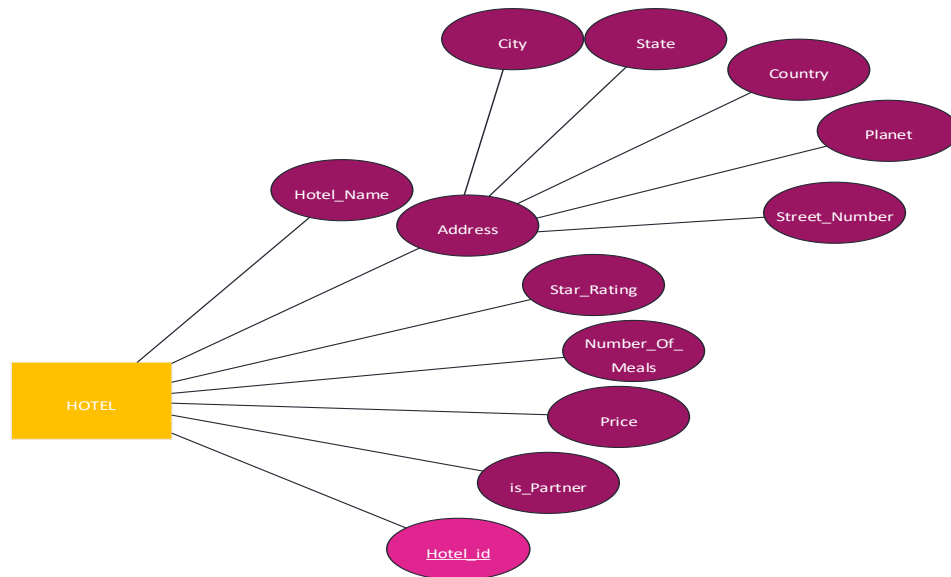
The **HOTEL** is the accommodation the **EMPLOYEE RECOMMENDS**, and the **CUSTOMER** chooses to **STAY_AT.**

The **HOTEL**'s key attribute is the <u>Hotel_id</u>. All of the **HOTEL**'s attributes are listed below:

- <u>Hotel_id:</u> Consists of the unique id for each hotel.
- Hotel_Name: Mentions the hotel's name.
- Address: Stores the hotel's address as a composite attribute consisting of the Street_Number, City, State, Country, and Planet.
- Star_Rating: Specifies the number of star rating given to the hotel.
- Number_Of_Meals: Includes the number of meals provided per day.
- Price: States the hotel's price per night in Bitcoin (BTC).
- Is_Partner: Mentions whether the hotel is a partner of Metatravel agency or not.

5. <u>Room</u>
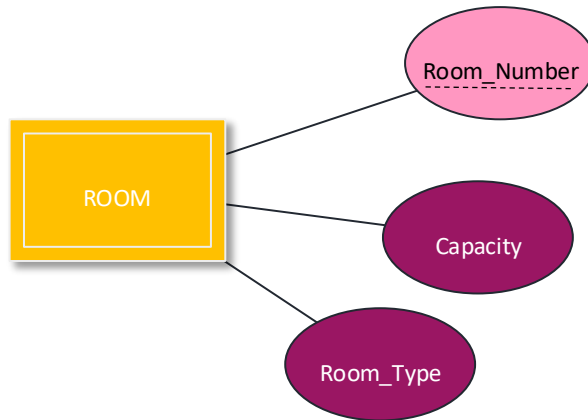
The entity **ROOM** is a weak entity type that is identification-dependent on the identifying entity **HOTEL**. The partial key of **ROOM** is the Room_Number. All of the **ROOM**'s attributes are listed below:

- Room_Number: Specifies the room number in the hotel booked.
- Capacity: Includes the maximum number of people permitted per room.
- Room_Type: Describes whether the room is single-bed, double-bed, triple-bed, king-sized bed, queen-sized bed, or a suite.

6. <u>Companion</u>
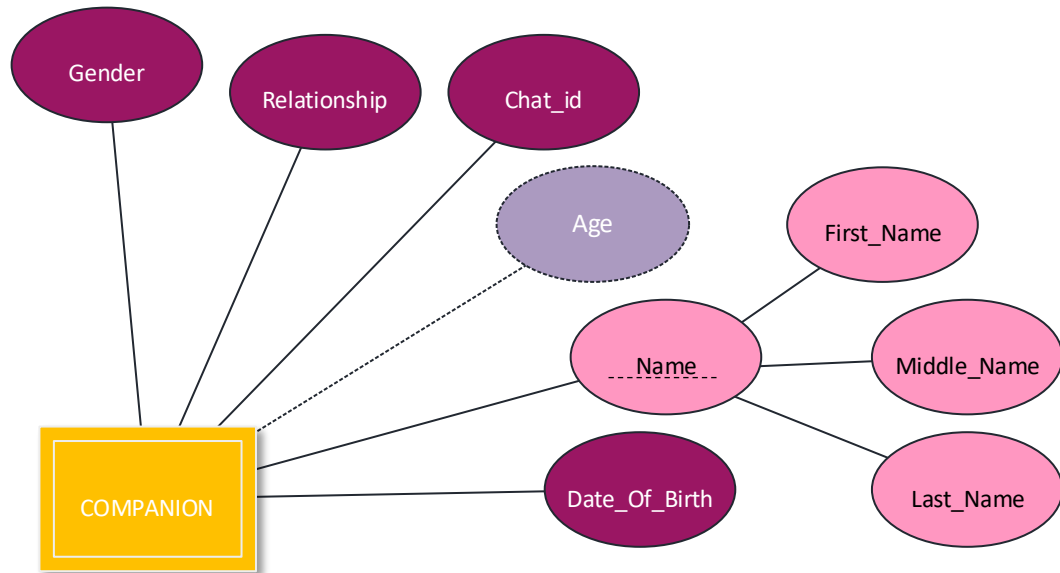
The entity **COMPANION** is a weak entity type that is identification-dependent on the identifying entity **CUSTOMER**. The **COMPANION ACCOMPANIES** the **CUSTOMER**. The partial key of **COMPANION** is the Name. All of the **COMPANION**'s attributes are listed below:

- Name: Specifies the companion's name as a composite attribute consisting of the First_Name, Middle_Name, and Family_Name.
- Chat_id: Consists of the 8-digit number the companion uses to communicate
- Date_Of_Birth: Mentions the companion's date of birth in the format: MM/DD/YYYY.
- Age: Is a derived attribute from Date_Of_Birth.
- Gender: Specifies the companion's gender.
- Relationship: Includes the relationship between the companion and customer.

7. **Contract**
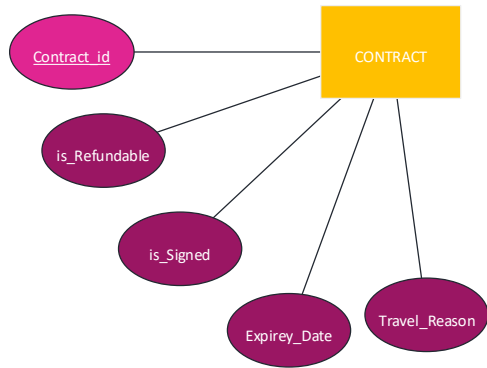
The **EMPLOYEE DRAFTS** the **CONTRACT** and the **CUSTOMER SIGNS** it, thereby formalizing the relationship between the agency and the customer, outlining the various legal obligations each party owes to the other, and finalizing payments.

The **CONTRACT**'s key attribute is the Contract_id. All of the **CONTRACT**'s attributes are listed below:

- Contract_id: Consists of the unique id for each contract.
- Is_Refundable: Mentions whether refund for the payment is applicable.
- Is_Signed: Indicates whether the customer signed the contract.
- Expiry_Date: Specifies the date wherein the contract ends.
- Travel_Reason: Specifies the reason the customer wants to visit a specific location.

7. **Bill**
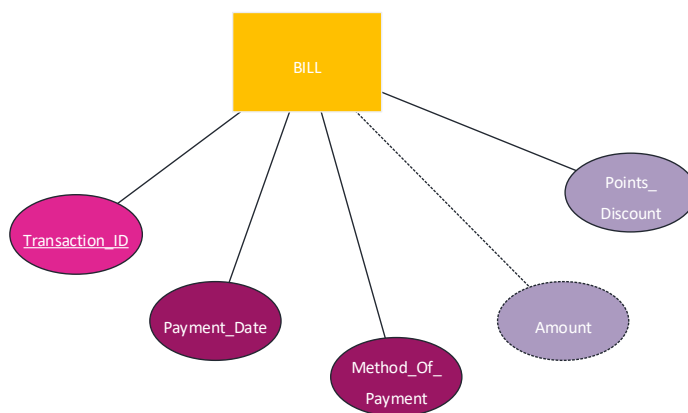
The **CUSTOMER PAYS** the **BILL**. The **BILL**'s key attribute is the Transaction_id. All of the **CONTRACT**'s attributes are listed below:

- Transaction_ID: Consists of the unique id for each transaction.
- Payment_Date: Indicates the date in which the final payment is made, and no further exchanges will occur.
- Method_Of_payment: Specifies the payment method.
- Amount: Is a derived attribute from TICKET and HOTEL price.
- Points_Discount: Determines the amount of money deducted from the payment. It is a derived attribute from the CUSTOMER's Points_balance.

8. **Department**
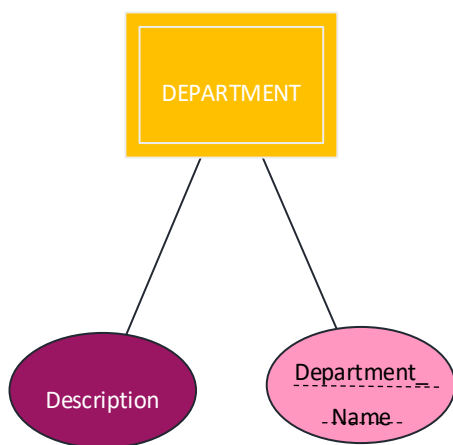
The **EMPLOYEE WORKS FOR** a specific **DEPARTMENT**, and a **BRANCH HAS_A** a **DEPARTMENT**. **DEPARTMENT** a weak entity type that is identification-dependent on the identifying entity **BRANCH**. The **DEPARTMENT**'s partial key is the Department_Name. All of the **DEPARTMENT**'s attributes are listed below:

- Department_Name: Indicates the name of the department.
- Description: Describes the department' function.

9. **Emergency_Contact**
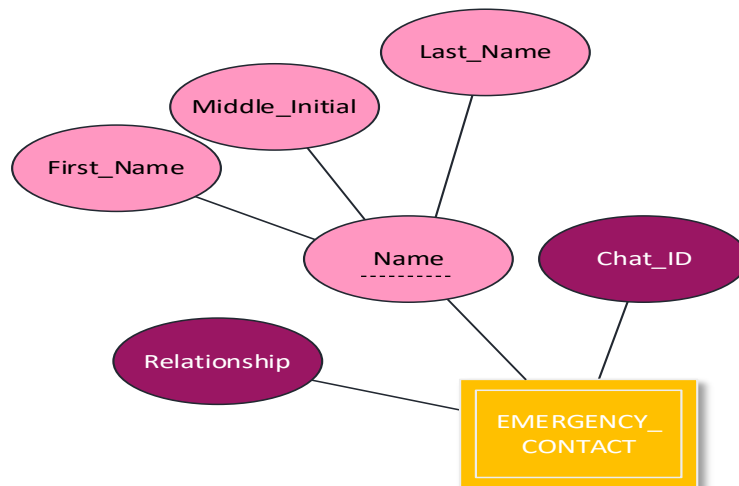
The **CUSTOMER**/**EMPLOYEE HAS_AN EMERGENCY_CONTACT**. The entity
EMERGENCY_CONTACT is a weak entity type that is identification-dependent on the
identifying entities **CUSTOMER** and **EMPLOYEE**. The partial key for
EMERGENCY_CONTACT is the Name: All of the **EMERGENCY_CONTACT**'s attributes
are listed below:

- Name: Specifies the emergency contact's name as a composite attribute consisting of the
First_Name, Middle_Name, and Family_Name.
- Chat_id: Consists of the 8-digit number the companion uses to communicate
- Relationship: Includes the relationship between the emergency contact and customer.

10. **Branch**
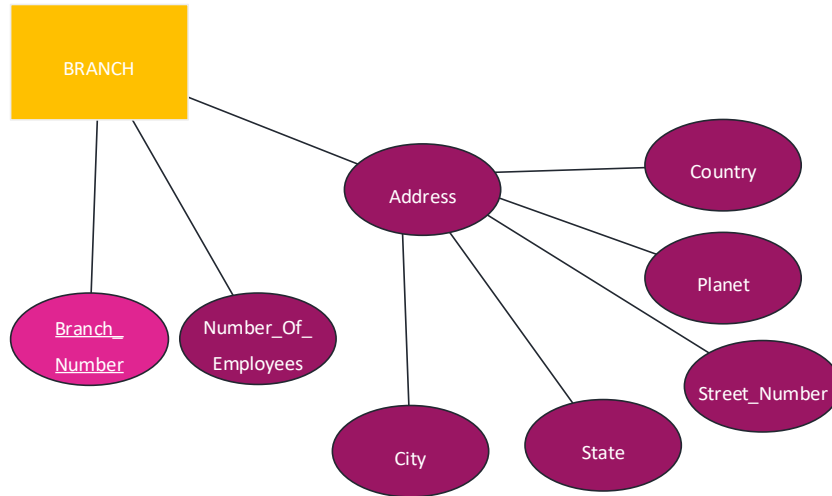
The **CUSTOMER CONTACTS** a specific **BRANCH**. Moreover, each **BRANCH HAS_A DEPARTMENT**. The **BRANCH**'s key attribute is the Branch_Number. All of the **BRANCH**'s attributes are listed below:

- Branch_Number: Consists of the 5-digit number that indicates the specific branch of the department.
- Address: Stores the branch's address as a composite attribute consisting of the Street_Number, City, State, Country, and Planet.
- Number_Of_Employees: Specifies the number of employees in the branch.

11. Partner
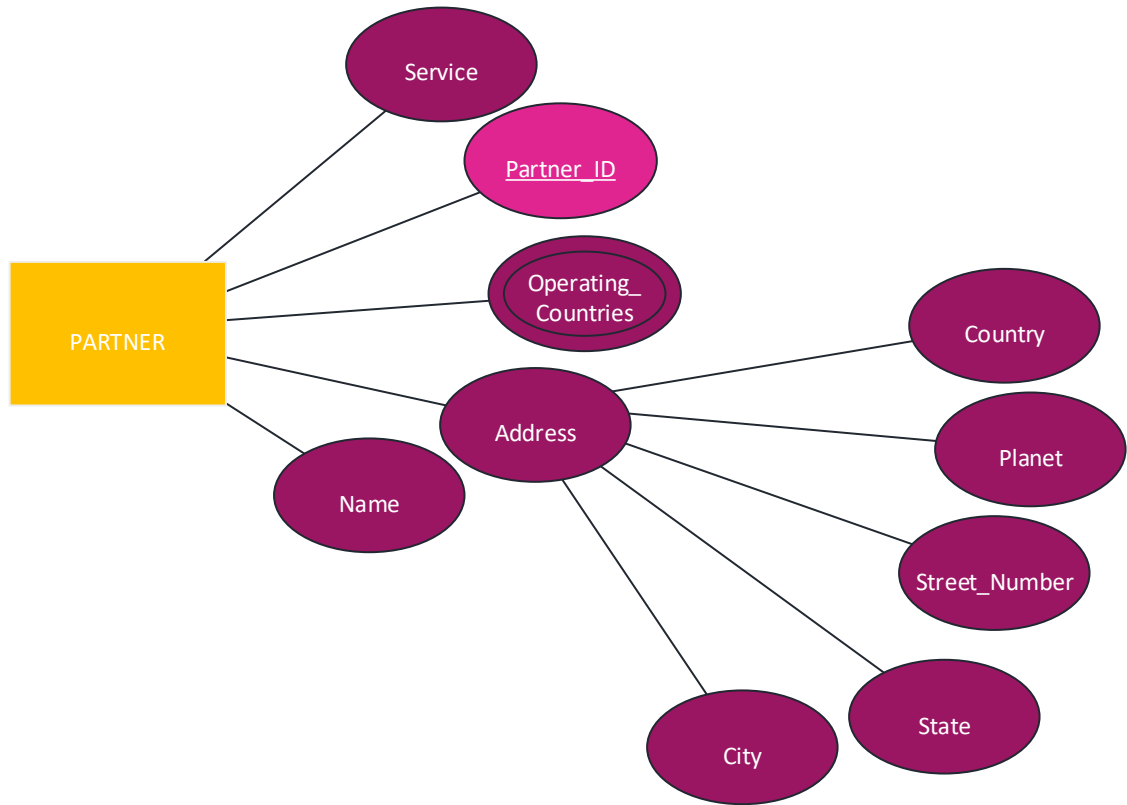
Dealerships between **PARTNERs** and the agency are established in order to benefit customers. A **PARTNER** **PROVIDES** a **TICKET** at reduced costs. The **PARTNER**'s key attribute is the Partner_ID. All of the **PARTNER**'s attributes are listed below:

- Partner_ID: Specifies the partner's unique id number.
- Name: Includes the partner's name.
- Address: Stores the partner's address as a composite attribute consisting of the Street_Number, City, State, Country, and Planet.
- Service: Describes the service provided by the partner.
- Operating_Countries: Is a multivalued attribute which states the countries in which the partner operates.

VIII.   Relationships

1. <u>Manages</u>

The **MANAGES** relationship exists between **EMPLOYEE** and **CUSTOMER**. The relationship is *many-to-many (M:N)*; An **EMPLOYEE** may **MANAGE** many **CUSTOMERS**, and a **CUSTOMER** may be managed by many **EMPLOYEES**.

The participation constraint is partial for the **EMPLOYEE** entity type since not each **EMPLOYEE MANAGES** a **CUSTOMER**. However, the participation constraint is total for the **CUSTOMER** entity type since each **CUSTOMER** must be managed by at least one **EMPLOYEE**.

2. <u>Supervises</u>
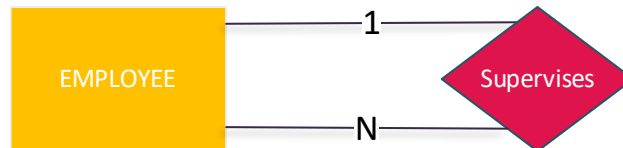
The **SUPERVISES** relationship is a self-referencing relationship between an **EMPLOYEE** and another **EMPLOYEE**. The relationship is *one-to-many (1:N)*. One **EMPLOYEE SUPERVISES** many **EMPLOYEEs**, and an **EMPLOYEE** is **SUPERVISED** by one **EMPLOYEE.**

The participation constraint is partial on both sides for the **EMPLOYEE** entity types since not every **EMPLOYEE** necessarily **SUPERVISES** another one, and not every **EMPLOYEE**, namely the CEO, is **SUPERVISED** by another one.

3. <u>Drafts</u>

The **DRAFTS** relationship exists between an **EMPLOYEE** and a **CONTRACT**. The relationship is *one-to-many (1:N)*; An **EMPLOYEE** may **DRAFT** several **CONTRACTs**, but a **CONTRACT** is **DRAFTED** by only one **EMPLOYEE**.

The participation constraint is partial on the **EMPLOYEE** entity side since not every **EMPLOYEE** necessarily **DRAFTS** a **CONTRACT**. On the other hand, the participation is constraint is total on the **CONTRACT** entity side since every **CONTRACT** is **DRAFTED** by an **EMPLOYEE**.

4. Recommends
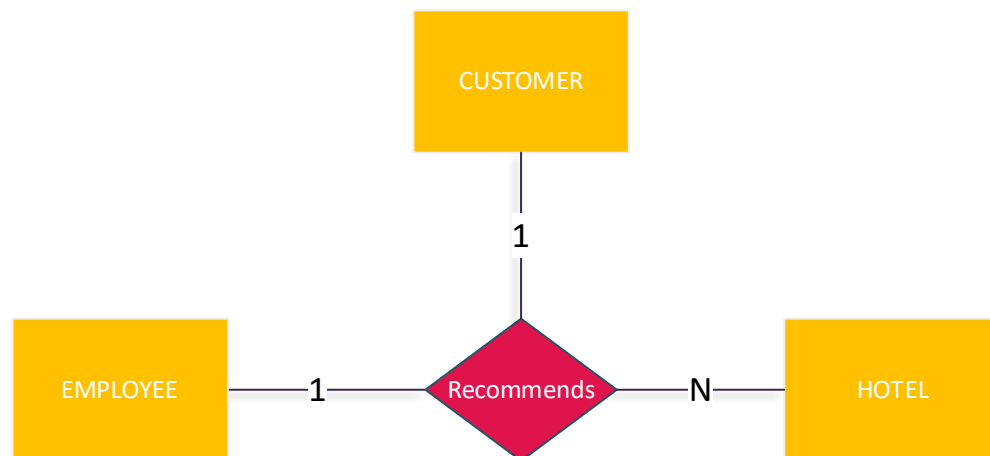
RECOMMENDS is a ternary relationship between an **EMPLOYEE**, a **HOTEL**, and a **CUSTOMER** since the **EMPLOYEE** **RECOMMENDS** the **HOTEL** to the **CUSTOMER**. The relationship is *one-to-one-to-many (1:1:N)*; An **EMPLOYEE** may **RECOMMEND** several **HOTELs** to a single **CUSTOMER** according to their need, but a **HOTEL** is **RECOMMENDed** by only one **EMPLOYEE**.

The participation constraint is partial on the **EMPLOYEE** entity side since not every **EMPLOYEE** necessarily **RECOMMENDS** a **HOTEL**. Moreover, the participation is partial on the **HOTEL** entity side since not every **HOTEL** is **RECOMMENDED** by an **EMPLOYEE**.

The participation constraint is also partial on the **CUSTOMER** entity side since not every **CUSTOMER** is necessarily **RECOMMENDED** a **HOTEL**

5. <u>Works_For</u>

The **WORKS_FOR** relationship exists between an **EMPLOYEE** and a **DEPARTMENT**. The relationship is *many-to-one (N:1)*; Many **EMPLOYEEs WORK_FOR** one **DEPARTMENT**.

The participation constraint is total on the **EMPLOYEE** and **DEPARTMENT** entity sides since every **EMPLOYEE WORKS_FOR** a **DEPARTMENT**, and every **DEPARTMENT** has **EMPLOYEEs** who **WORK_FOR** it.

6. <u>Contains</u>

The **CONTAINS** relationship exists between a **BRANCH** and a **DEPARTMENT**. The relationship is *one-to-many (1:N)*; A **BRANCH CONTAINS** many **DEPARTMENTs**, but a **DEPARTMENT** is only **CONTAINED** in one **BRANCH**.

The participation constraint is total on the **BRANCH** and **DEPARTMENT** entity sides since every **BRANCH CONTAINS** a **DEPARTMENT**, and every **DEPARTMENT** is **CONTAINED** in a **BRANCH**.

7. <u>Books</u>
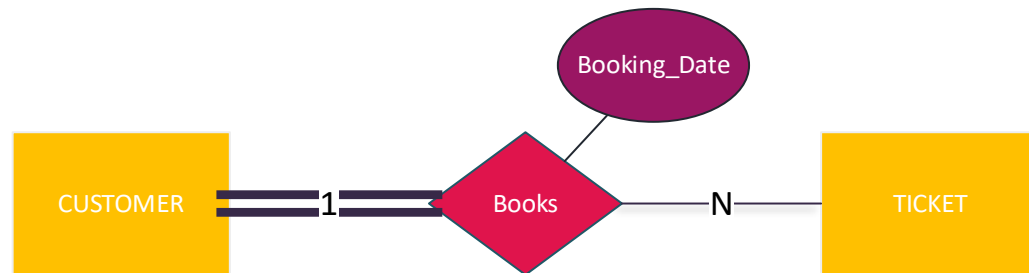
The **BOOKS** relationship exists between as **CUSTOMER** and a **TICKET**. The relationship is *one-to-many (1:N)*; A **CUSTOMER** may **BOOK** many **TICKETs**, but a **TICKET** may be **BOOKED** by a single **CUSTOMER**.

The participation constraint is total on the **CUSTOMER** entity side since every **CUSTOMER** **BOOKS** a **TICKET**. However, the participation constraint is partial on the **TICKET** entity side since not every **TICKET** is **BOOKED** by a **CUSTOMER**.

This relationship has as attribute the Booking_Date which states the date in which the **CUSTOMER** **BOOKED** TICKET(s).

8. Stays_At
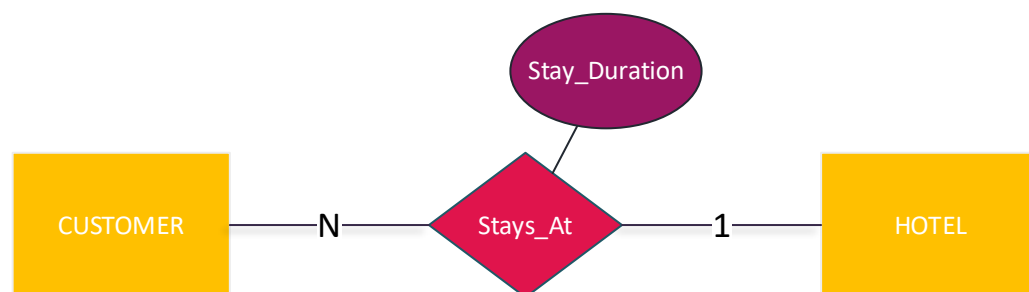
The **STAYS_AT** relationship exists between as **CUSTOMER** and a **HOTEL**. The relationship is *many-to-one (N:1)*; A **HOTEL** may have many **CUSTOMERs** **STAY_AT** it, and **CUSTOMER** only **STAYS_AT** one **HOTEL**.

The participation constraint is partial on the **CUSTOMER** and a **HOTEL** entity sides since not every **CUSTOMER** might **STAY_AT** a **HOTEL**, and not every **HOTEL** may have a **CUSTOMER** **STAY_AT** it.

This relationship has as attribute the Stay_Duration which states the period of time the **CUSTOMER** will be **STAYING_AT** the **HOTEL**.

9. Accompanies

The **ACCOMPANIES** relationship exists between a **CUSTOMER** and a **COMPANION**. The relationship is *one-to-many (1:N)*; A **CUSTOMER** may have several **COMPANIONs** **ACCOMPANYING** them, but a **COMPANION** only **ACCOMPANIES** one **CUSTOMER**.

The participation constraint is partial on the **CUSTOMER** side since not every **CUSTOMER** might be **ACCOMPANIED** by a **COMPANION**. On the other hand, the participation constraint is total on the **COMPANION** side since every **COMPANION** **is ACCOMPANIED** by a **CUSTOMER**.

10. Signs

The **SIGNS** relationship exists between a **CUSTOMER** and a **CONTRACT**. The relationship is *many-to-one (N:1)*; A **CUSTOMER** may **SIGN** many **CONTRACTs**, but a **CONTRACT** is only **SIGNED** by one **CUSTOMER**.

The participation constraint is total on the **CUSTOMER** entity side since every **CUSTOMER** **SIGNS** a **CONTRACT**. Furthermore, the participation constraint is partial on the **CONTRACT** entity side since not every **CONTRACT IS SIGNED** by a **CUSTOMER**.

11. Pays

The **PAYS** relationship exists between a **CUSTOMER** and a **BILL**. The relationship is *many-to-one (N:1)*; A **CUSTOMER** may **PAY** many **BILLs**, but a **BILL** is only **PAID** by one **CUSTOMER**.

The participation constraint is total on both the **CUSTOMER** and **BILL** entity sides since every **CUSTOMER PAYS** a **BILL**, and every **BILL IS PAID** by a **CUSTOMER** after signing the contract.

12. Contacts

The **CONTACTS** relationship exists between a **CUSTOMER** and a **BRANCH**. The relationship is *many-to-one (N:1)*; A **CUSTOMER CONTACTS** only one **BRANCH**, but a **BRANCH** may be **CONTACTed** by many **CUSTOMERs**.

The participation constraint is total on both the **CUSTOMER** and **BRANCH** entity sides since not every **CUSTOMER CONTACTS** a **BRANCH**, and every **BRANCH IS CONTACTED** by a **CUSTOMER**.

13. Prepares

The **PREPARES** relationship exists between a **HOTEL** and a **ROOM**. The relationship is *one-to-many (1:N)*; A **HOTEL PREPARES** several **ROOMS**, but a **ROOM** is **PREPARED** in one **HOTEL**.

The participation constraint is total on **ROOM** entity side since every **ROOM** is **PREPARED** by. The participation constraint is partial on the **HOTEL** entity side since every **HOTEL PREPARES** a **ROOM**.

14. Provides

The **PROVIDES** relationship exists between a **PARTNER** and a **TICKET**. The relationship is *one-to-many (1:N)*; A **PARTNER PROVIDES** several **TICKETs**, but a **TICKET** is **PROVIDEd** by one **PARTNER**.

The participation constraint is partial on the **PARTNER** entity side since not every **PARTNER**, for instance a **HOTEL**, **PROVIDES** a **TICKET**. In contrast, the participation constraint is total **TICKET** entity side since every **TICKET** is **PROVIDED** by a **PARTNER**.

15. Connects With
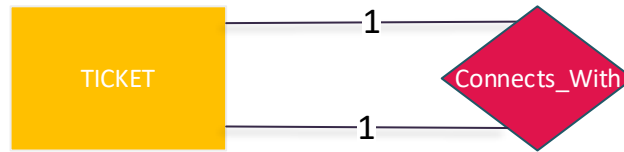
The **CONNECTS_WITH** relationship exists between a **TICKET** and another **TICKET**. The relationship is *one-to-one (1:1)*; A **TICKET CONNECTS_WITH** one **TICKET**, and a **TICKET** is **CONNECTED_WITH** one **TICKET**.

The participation constraint is partial on both the **TICKET** entity sides since not every **TICKET CONNECTS_WITH** another **TICKET**, and not every **TICKET** is **CONNECTED_WITH** a **TICKET**.

16. Has_An1

The **HAS_AN** relationship exists between a **CUSTOMER** and an **EMERGENCY_CONTACT**. The relationship is *one-to-many (1:N)*; A **CUSTOMER** may **HAVE** many **EMERGENCY_CONTACT**, and an **EMERGENCY_CONTACT** may only be used for one **CUSTOMER**.

The participation constraint is total on both the **CUSTOMER** and **EMERGENCY_CONTACT** entity sides since every **CUSTOMER HAS_AN EMERGENCY_CONTACT** and every **EMERGENCY_CONTACT** is used for a **CUSTOMER**.

17. Has_An2

The **HAS_AN** relationship exists between an **EMPLOYEE** and an **EMERGENCY_CONTACT**. The relationship is *one-to-many (1:N)*; An **EMPLOYEE** may **HAVE** many **EMERGENCY_CONTACT**, and an **EMERGENCY_CONTACT** may only be used for one **EMPLOYEE**.

The participation constraint is total on both the **EMPLOYEE** and **EMERGENCY_CONTACT** entity sides since every **EMPLOYEE HAS_AN EMERGENCY_CONTACT**, and every **EMERGENCY_CONTACT** is used for an **EMPLOYEE.**

IX.   <u>ER to Relational Mapping Algorithms</u>

After designing the ER diagram and creating attributes, entities, and relationships, we will translate the ER diagram to a relational database design. A seven-step algorithm will be used to do the mapping of the ER diagram to a relational database design. The steps are as follows:

<u>STEP 1: Mapping of Regular Entity Types</u>

1. <u>CUSTOMER</u>

<u>Passport_id</u>	First_Name	Middle_Name	Last_Name	Chat_id	Date_of_Birth

Street_Number	City	State	Country	Planet	Gender	Points_balance

The **CUSTOMER** entity contains simple, derived, composite and multivalued attributes. The derived attribute Age and the multivalued attribute Purchased_Tickets_id are not represented in this relation. This relation solely consists of simple attributes and the primary key ID which is underlined. The **CUSTOMER** entity has Name and Address as composite attributes. The simple attributes First_Name, Last_Name, and Middle_Name that compose Name are included in this relation. Equivalently, Street_Number, City, State, Country, and Planet that compose Address are included in this relation.

2. <u>EMPLOYEE</u>

<u>Essn</u>	First_Name	Middle_Name	Last_Name	Chat_id	Date_of_Birth	Street_Number	City	State

Country	Planet	Gender	Salary	Position

The **EMPLOYEE** entity contains simple, derived, and composite attributes. The derived attribute Age is not represented in this relation. This relation solely consists of simple attributes and the primary key ID which is underlined. The **EMPLOYEE** entity has Name and Address as composite attributes. The simple attributes First_Name, Last_Name, and Middle_Name that compose Name are included in this relation. Equivalently, Street_Number, City, State, Country, and Planet that compose Address are included in this relation.

3. <u>TICKET</u>

<u>Ticket_number</u>	Mode_of_Transportation	Transport_company	Baggage_weight	Seat_number	Destination_City	Destination_State

Destination_Country	Destination_Planet	Departure_City	Departure_State	Departure_Country	Departure_Planet	Price	Ticket_type	Is_booked

Destination_Time	Destination_Date	Departure_Time	Departure_Date

The **TICKET** entity contains simple and composite attributes. This relation solely consists of simple attributes and the primary key ID which is underlined. The **TICKET** entity has Destination, of which Location is composite, and Departure, of which Location is composite, as composite attributes. The simple attributes Destination_Date and Destination_Time that compose Destination are included in this relation. Destination_City, Destination_State, Destination_Country, and Destination_Planet that compose Location are included in this relation. The simple attributes Departure_Date and Departure_Time that compose Departure are included in this relation. Departure_City, Departure_State, Departure_Country, and Departure_Planet that compose Location are included in this relation.

4. <u>HOTEL</u>

<u>Hotel_id</u>	Hotel_name	Street_Number	City	State	Country	Planet

Star_rating	Number_of_Meals	Price	is_Partner

The **HOTEL** entity contains simple and composite attributes. This relation solely consists of simple attributes and the primary key ID which is underlined. The **HOTEL** entity has Address as composite attribute. The simple attributes Street_Number, City, State, Country, and Planet that compose Address are included in this relation.

5. CONTRACT

Contract_id	is_Refundable	is_Signed	Expiry_date	Travel_reason

The **CONTRACT** entity contains simple attributes. This relation solely consists of simple attributes and the primary key ID which is underlined.

6. BILL

Transaction_id	Payment_date	Method_of_Payment

The **BILL** entity contains simple and derived attributes. The derived attributes Amount and Points_Discount are not represented in this relation. This relation solely consists of simple attributes and the primary key ID which is underlined.

7. BRANCH

Branch_Number	Street_Number	City	State	Country	Planet

The **BRANCH** entity contains simple and composite attributes. This relation solely consists of simple attributes and the primary key ID which is underlined. The **BRANCH** entity has Address as a composite attribute. The simple attributes Street_Number, City, State, Country, and Planet that compose Address are represented in this relation.

8. PARTNER

Partner_id	Name	City	State	Country	Planet	Service	Street_Number

The **PARTNER** entity contains simple, composite and multivalued attributes. The multivalued attribute Operating_Countries are not represented in this relation. This relation solely consists of simple attributes

and the primary key ID which is underlined. The **PARTNER** entity has Address as a composite attribute. The simple attributes Street_Number, City, State, Country, and Planet that compose Address are represented in this relation.

STEP 2: Mapping of Weak Entity Types

1. ROOM

Room_Number	H_id	Capacity	Room_Type

The weak entity **ROOM** contains only simple attributes. The weak entity does not have any derived, multivalued, or composite attributes. Moreover, the H_id, the primary of the owner entity **HOTEL**, is included. H_id and the partial key Room_Number are combined to represent the primary key of this relation.

2. COMPANION

First_Name	Middle_Name	Last_Name	P_id	Chat_id	Date_of_Birth	Gender	Relationship

The **COMPANION** entity contains simple, derived, and composite attributes. The derived attribute Age is not represented in this relation. This relation solely consists of simple attributes. The **COMPANION** entity has Name as composite attribute. The simple attributes First_Name, Last_Name, and Middle_Name that compose Name are included in this relation. Moreover, the P_id, the primary key of the owner entity **CUSTOMER**, is included. P_id and the partial keys First_Name, Last_Name, and Middle_Name are combined to represent the primary key of this relation.

3. DEPARTMENT

Department_Name	Branch_Nb	Description

The weak entity **DEPARTMENT** contains only simple attributes. The weak entity does not have any derived, multivalued, or composite attributes. Moreover, the Branch_Nb, the primary of the owner entity **BRANCH**, is included. Branch_Nb and the partial key Department_Name are combined to represent the primary key of this relation.

4. EMERGENCY_CONTACT1

First_Name	Middle_Name	Last_Name	P_id	Chat_id	Relationship

The **EMERGENCY_CONTACT1** entity contains simple and composite attributes. This relation solely consists of simple attributes. The **EMERGENCY_CONTACT1** entity has Name as composite attribute. The simple attributes First_Name, Last_Name, and Middle_Name that compose Name are included in this relation. Moreover, the P_id, the primary key of the owner entity **CUSTOMER**, is included. P_id and the partial keys First_Name, Last_Name, and Middle_Name are combined to represent the primary key of this relation.

5. EMERGENCY_CONTACT2

First_Name	Middle_Name	Last_Name	essn	Chat_id	Relationship

The **EMERGENCY_CONTACT2** entity contains simple and composite attributes. This relation solely consists of simple attributes. The **EMERGENCY_CONTACT2** entity has Name as composite attribute. The simple attributes First_Name, Last_Name, and Middle_Name that compose Name are included in this relation. Moreover, the essn, the primary key of the owner entity **EMPLOYEE,** is included. Essn and the partial keys First_Name, Last_Name, and Middle_Name are combined to represent the primary key of this relation.

STEP 3: Mapping of Binary 1:1 Relation Types

1. CONNECTS_WITH (TICKET)

Ticket_number	Mode_of_Transportation	Transport_company	Baggage_weight	Seat_number	Destination_City	Destination_State

Destination_Country	Destination_Planet	Departure_City	Departure_State	Departure_Country	Departure_Planet	Price	Ticket_type	Is_booked

Destination_Time	Destination_Date	Departure_Time	Departure_Date	Connection_number

The **CONNECTS_WITH** relationship is a self-referencing relationship between two **TICKETs.**
Thus, to the **TICKET** table, we add as foreign key the Ticket_number of the connecting ticket, named
Connection_number.

STEP 4: Mapping of Binary 1:N Relation Types

1. SUPERVISES (EMPLOYEE)

Employee_ssn	First_Name	Middle_Name	Last_Name	Chat_id	Date_of_Birth	Street_Number	City	State

Country	Planet	Gender	Salary	Position	Supervisor_ssn

The **SUPERVISES** relationship is a self-referencing relationship that links two **EMPLOYEEs.**
Thus, to the **EMPLOYEE** table, we add as foreign key Supervisor_ssn.

2. DRAFTS (CONTRACT)

Contract_id	is_Refundable	is_Signed	Expiry_date	Travel_reason	Employee_ssn

The **DRAFTS** relationship links the **EMPLOYEE** to the **CONTRACT.** Since the **CONTRACT**
has the N-side, we add to it, as foreign key, the primary key of **EMPLOYEE** - Employee_ssn.

3. WORKS_FOR (EMPLOYEE)

Employee_ssn	First_Name	Middle_Name	Last_Name	Chat_id	Date_of_Birth	Street_Number	City	State

Country	Planet	Gender	Salary	Position	Supervisor_ssn	Branch_nb	Dept_name

The **WORKS_FOR** relationship links the **EMPLOYEE** to **DEPARTMENT.** Thus, Since the **EMPLOYEE** has the N-side, we add to it, as foreign key, the primary key of **DEPARTMENT** - Branch_nb and Dept_name combined.

4. CONTAINS (DEPARTMENT)

Department_Name	Branch_Nb	Description

The **CONTAINS** relationship is the identifying relationship between **BRANCH** and the weak entity type **DEPARTMENT**. Thus, to the **DEPARTMENT** table, we add the primary key of **BRANCH**, Branch_Nb, as foreign key. However, it has already been added in STEP 2: Mapping of Weak Entity Types, and it is included as part of the primary key of **DEPARTMENT**, along with Department_Name.

5. BOOKS (TICKET)

Ticket_number	Mode_of_Transportation	Transport_company	Baggage_weight	Seat_number	Destination_City	Destination_State

Destination_Country	Destination_Planet	Departure_City	Departure_State	Departure_Country	Departure_Planet	Price	Ticket_type	Is_booked

Destination_Time	Destination_Date	Departure_Time	Departure_Date	Connection_number	Booking_Date	Psprt_id

The **BOOKS** relationship links the **CUSTOMER** to the **TICKET.** The Booking_Date attribute is an attribute for the relationship **BOOKS,** so it is added to the table. Moreover, since the **TICKET** has the N-side, we add to it, as foreign key, the primary key of **CUSTOMER** - Psprt_nb.

6. STAYS_AT (CUSTOMER)

Passport_id	First_Name	Middle_Name	Last_Name	Chat_id	Date_of_Birth

Street_Number	City	State	Country	Planet	Gender	Points_balance	Stay_Duration	Hotel_id

The **STAYS_AT** relationship links the **CUSTOMER** to the **HOTEL.** The Stay_Duration attribute is an attribute for the relationship **STAYS_AT,** so it is added to the table. Moreover, since the **CUSTOMER** has the N-side, we add to it, as foreign key, the primary key of **CUSTOMER** - Psprt_nb.

7. PAYS (BILL)

Transaction_id	Payment_date	Method_of_Payment	Psprt_id

The **PAYS** relationship links the **CUSTOMER** to the **BILL.** Since the **BILL** has the N-side, we add to it, as foreign key, the primary key of **CUSTOMER** - Psprt_nb.

8. CONTACTS (CUSTOMER)

Passport_id	First_Name	Middle_Name	Last_Name	Chat_id	Date_of_Birth

Street_Number	City	State	Country	Planet	Gender	Points_balance	Stay_Duration	Hotel_id	Brnch_nb

The **CONTACT** relationship links the **CUSTOMER** to the **BRANCH.** Since the **CUSTOMER** has the N-side, we add to it as, foreign key, the primary key of **BRANCH** - Brnch_nb.

9. PREPARES (ROOM)

Room_Number	H_id	Capacity	Room_Type

The **PREPARES** relationship is the identifying relationship between a **HOTEL** and the weak entity type **ROOM**. Thus, to the **ROOM** table, we add the primary key of **HOTEL** which is H_id as foreign key. However, it has already been added in STEP 2: Mapping of Weak Entity Types, and it is included as part of the primary key of **ROOM,** along with Room_Number.

10. SIGNS(CONTRACT)

Contract_id	is_Refundable	is_Signed	Expiry_date	Travel_reason	Employee_ssn	Psprt_id

11. PROVIDES (TICKET)

Ticket_number	Mode_of_Transportation	Transport_company	Baggage_weight	Seat_number	Destination_City	Destination_State

Destination_Country	Destination_Planet	Departure_City	Departure_State	Departure_Country	Departure_Planet	Price	Ticket_type	Is_booked

Destination_Time	Departure_Time	Connection_number	Booking_Date	Psprt_id	Prtnr_id

The **PROVIDES** relationship links the **PARTNER** to the **TICKET.** Since the **TICKET** has the N-side, we add to it, as foreign key, the primary key of **PARTNER** - Prtnr_id.

12. Accompanies(Companion)

First_Name	Middle_Name	Last_Name	P_id	Chat_id	Date_of_Birth	Gender	Relationship

The **ACCOMPANIES** relationship is the identifying relationship between a **CUSTOMER** and the weak entity type **COMPANION**. Thus, to the **COMPANION** table, we add the primary key of **CUSTOMER** which is P_id as foreign key. However, it has already been added in STEP 2: Mapping of Weak Entity

Types, and it is included as part of the primary key of **COMPANION**, along with First_Name, Middle_Name, and Last_Name.

13. HAS_AN1 (EMERGENCY_CONTACT1)

First_Name	Middle_Name	Last_Name	P_id	Chat_id	Relationship

The **HAS_AN1** relationship is the identifying relationship between a **CUSTOMER** and the weak entity type **EMERGENCY_CONTACT1**. Thus, to the **EMERGENCY_CONTACT1** table, we add the primary key of **CUSTOMER,** which is P_id as foreign key. However, it has already been added in STEP 2: Mapping of Weak Entity Types, and it is included as part of the primary key of **EMERGENCY_CONTACT1,** along with First_Name, Middle_Name, and Last_Name.

14. HAS_AN2 (EMERGENCY_CONTAC2)

First_Name	Middle_Name	Last_Name	essn	Chat_id	Relationship

The **HAS_AN2** relationship is the identifying relationship between an **EMPLOYEE** and the weak entity type **EMERGENCY_CONTACT2**. Thus, to the **EMERGENCY_CONTACT2** table, we add the primary key of **EMPLOYEE,** which is essn as foreign key. However, it has already been added in STEP 2: Mapping of Weak Entity Types, and it is included as part of the primary key of **EMERGENCY_CONTACT2,** along with First_Name, Middle_Name, and Last_Name.

STEP 5: Mapping of Binary M:N Relation Types

1. MANAGES

Employee_ssn	Psprt_id

The **MANAGES** relationship links the **EMPLOYEE** to the **CUSTOMER**. Since it is of type M:N, we create a new relation (table). The primary key is a combination of the primary keys of **EMPLOYEE** and **CUSTOMER**, namely Employee_ssn and Psprt_id.

STEP 6: Mapping of Multivalued Attributes

1. CUSTOMER_PURCHASE_HISTORY

Purchased_Tickets_id	Psprt_id

The Purchased_Tickets_id is a multivalued attribute for the **CUSTOMER**. We create a new relation (table) named **CUSTOMER_PURCHASE_HISTORY** for it. The primary key is a combination of the primary key of **CUSTOMER**, namely Psprt_id and Purchased_Tickets_id.

2. PARTNER_OPERATING_COUNTRIES

Country	Prtnr_id

The Operating_Countries is a multivalued attribute for the **PARTNER**. We create a new relation (table) named **PARTNER_OPERATING_COUNTRIES** for it. The primary key is a combination of the primary key of **PARTNER**, namely Prtnr_id, and Country.

STEP 7: Mapping of N-ary Relationships

1. RECOMMENDS

Employee_ssn	Psprt_id	Htl_id

The **RECOMMENDS** relationship is a ternary relationship linking the **EMPLOYEE** to the **HOTEL** to the **CUSTOMER**. Thus, we create a new relation (table) for it. The primary key is a combination of the primary keys of **EMPLOYEE**, **HOTEL**, and **CUSTOMER**, namely Employee_ssn, Psprt_id, and Htl_id.

X. **Mapping Result**

1. **Customer**

Passport_id	First_Name	Middle_Name	Last_Name	Chat_id	Date_of_Birth

Street_Number	City	State	Country	Planet	Gender	Points_balance	Stay_Duration	Hotel_id	Brnch_nb

2. **Employee**

Employee_ssn	First_Name	Middle_Name	Last_Name	Chat_id	Date_of_Birth	Street_Number	City	State

Country	Planet	Gender	Salary	Position	Supervisor_ssn	Branch_nb	Dept_name

3. **Ticket**

Ticket_number	Mode_of_Transportation	Transport_company	Baggage_weight	Seat_number	Destination_City	Destination_State

Destination_Country	Destination_Planet	Departure_City	Departure_State	Departure_Country	Departure_Planet	Price	Ticket_type	Is_booked

Destination_Time	Departure_Time	Connection_number	Booking_Date	Psprt_id	Prtnr_id

4. **Hotel**

Hotel_id	Hotel_name	Street_Number	City	State	Country	Planet

Star_rating	Number_of_Meals	Price	is_Partner

5. <u>Room</u>

Room_Number	H_id	Capacity	Room_Type

6. **Contract**

Contract_id	is_Refundable	is_Signed	Expiry_date	Travel_reason	Employee_ssn	Psprt_id

7. **Companion**

First_Name	Middle_Name	Last_Name	P_id	Chat_id	Date_of_Birth	Gender	Relationship

8. <u>Bill</u>

Transaction_id	Payment_date	Method_of_Payment	Psprt_id

9. **Department**

Department_Name	Branch_Nb	Description

10. **Emergency_Contact1**

First_Name	Middle_Name	Last_Name	P_id	Chat_id	Relationship

11. **Emergency_Contact2**

First_Name	Middle_Name	Last_Name	essn	Chat_id	Relationship

12. **Branch**

Branch_Number	Street_Number	City	State	Country	Planet

13.Partner

Partner_id	Name	City	State	Country	Planet	Service	Street_Number

14.Customer_Purchase_History

Purchased_Tickets_id	Psprt_id

15.Partner_Operating_Countries

Country	Prtnr_id

16.Recommends

Employee_ssn	Psprt_id	Htl_id

17.Manages

Employee_ssn	Psprt_id

XI. SQL Queries and Oracle Server

After designing the ER diagram for Metatravel and mapping this diagram into relational database design, it is time to start creating the tables for our database on the Oracle Database Server.

1. Customer:

```sql
CREATE TABLE CUSTOMER
        (
          Passport_id CHAR(9) PRIMARY KEY ,
          First_Name VARCHAR(15) NOT NULL ,
          Middle_Name VARCHAR(15) NOT NULL ,
          Last_Name VARCHAR(15) NOT NULL,
          Chat_id VARCHAR(8) NOT NULL ,
          Date_of_Birth DATE NOT NULL ,
          Street_Number VARCHAR(5) ,
          City VARCHAR(10) ,
          State VARCHAR(10) ,
          Country VARCHAR(15) ,
          Planet VARCHAR(15) ,
          Gender CHAR(1)CHECK(GENDER IN('M','F')) ,
          Points_balance INT NOT NULL ,
          Hotel_id CHAR(9) ,
          Brnch_nb VARCHAR(5) ,
          FOREIGN KEY(Hotel_id) REFERENCES HOTEL(HOTEL_ID) ,
          FOREIGN KEY(Brnch_nb) REFERENCES BRANCH(BRANCH_NUMBER)
        );
```

2. Employee:

```sql
CREATE TABLE EMPLOYEE

 (

    Employee_ssn CHAR(9) PRIMARY KEY,

    First_Name VARCHAR(15) NOT NULL ,

    Middle_Name VARCHAR(15) NOT NULL ,

    Last_Name VARCHAR(15) NOT NULL,

    Chat_id VARCHAR(8) NOT NULL ,

    Date_of_Birth DATE NOT NULL ,

    Street_Number VARCHAR(5) ,

    City VARCHAR(10) ,

    State VARCHAR(10) ,

    Country VARCHAR(15) ,

    Planet VARCHAR(15) ,

    Gender CHAR(1)CHECK(GENDER IN('M','F')),

    Salary NUMERIC(6,2),
```

```sql
        Position VARCHAR(30),

        Supervisor_ssn CHAR(9),

        Branch_num VARCHAR(5),

        FOREIGN KEY(Supervisor_ssn) REFERENCES EMPLOYEE(EMPLOYEE_SSN),

        FOREIGN KEY(Branch_num) REFERENCES BRANCH(BRANCH_NUMBER)


    );
```

3. Ticket:

```sql
CREATE TABLE TICKET
    (

    Ticket_Number CHAR(7) PRIMARY KEY ,
    Mode_Of_Transportation VARCHAR(20) NOT NULL ,
    Transport_Company VARCHAR(20) NOT NULL ,
    Baggage_Weight NUMERIC(2,2) ,
    Seat_Number INT NOT NULL ,
    Destination_City VARCHAR(10) NOT NULL,
    Destination_State VARCHAR(10) NOT NULL,
    Destination_Country VARCHAR(15) NOT NULL ,
    Destination_Planet VARCHAR(15) NOT NULL,
    Destination_Time TIMESTAMP NOT NULL,
    Price NUMERIC(3,2) NOT NULL ,
    Ticket_Type VARCHAR(20) CHECK(TICKET_TYPE IN('One-Way','Round-
    Trip')) NOT NULL ,
    Is_Booked NUMBER(1) NOT NULL CHECK(Is_Booked IN(0,1)),
    Departure_City VARCHAR(10) NOT NULL,
    Departure_State VARCHAR(10) NOT NULL,
    Departure_Country VARCHAR(15) NOT NULL,
    Departure_Planet VARCHAR(15) NOT NULL,
    Departure_Time TIMESTAMP NOT NULL,
    Connection_Number CHAR(7),
    Psprt_id CHAR(9),
    Prtnr_id CHAR(9),
    Booking_Date DATE,
    FOREIGN KEY(Connection_Number) REFERENCES TICKET(Ticket_Number),
    FOREIGN KEY(Psprt_id) REFERENCES CUSTOMER(Passport_id),
    FOREIGN KEY(Prtnr_id) REFERENCES PARTNER(Partner_id)  );
```

4. Hotel:

```sql
CREATE TABLE  HOTEL
    (
        HOTEL_ID CHAR(9) PRIMARY KEY ,
        HOTEL_NAME VARCHAR(20) NOT NULL,
        STREET_NUMBER VARCHAR(5) ,
        CITY VARCHAR(10) ,
        STATE VARCHAR(10) ,
        COUNTRY VARCHAR(15) ,
        PLANET VARCHAR(15) ,
        STAR_RATING VARCHAR(1),
        NUMBER_OF_MEALS VARCHAR(4),
        PRICE VARCHAR(5) ,
        IS_PARTNER CHAR(1) CHECK(IS_PARTNER IN ('Y','N'))
    );
```

5. Room:

```sql
CREATE TABLE ROOM
 (
    H_id CHAR(9) ,
    Room_Number CHAR(3) ,
    Capacity INT ,
    Room_Type VARCHAR(15) CHECK(ROOM_TYPE IN('Single
    Bed','Double Bed','Triple Bed','King-Sized Bed','Queen-
    Sized Bed','Suite')) ,
    FOREIGN KEY (H_id) REFERENCES HOTEL(HOTEL_ID),
    PRIMARY KEY(H_id, Room_Number)
 );
```

6. Contract:

```sql
CREATE TABLE CONTRACT
(
    CONTRACT_ID CHAR(7) PRIMARY KEY,
    is_Refundable CHAR(1) CHECK(is_Refundable IN ('Y','N')) NOT NULL,
    is_Signed CHAR(1) CHECK(is_Signed IN ('Y','N')) NOT NULL,
    Expiry_Date Date NOT NULL,
    Travel_Reason VARCHAR(20) NOT NULL,
    essn CHAR(9) NOT NULL,
    Psprt_id CHAR(9),
    FOREIGN KEY (essn) REFERENCES EMPLOYEE(Employee_ssn),
    FOREIGN KEY (Psprt_id) REFERENCES CUSTOMER(Passport_id)
);
```

7. Companion:

```sql
CREATE TABLE COMPANION
(
    First_Name VARCHAR(15) NOT NULL ,
    Middle_Name VARCHAR(15) NOT NULL,
    Last_Name VARCHAR(15) NOT NULL,
    P_id CHAR(9) ,
    Chat_id VARCHAR(8) NOT NULL ,
    Date_Of_Birth DATE ,
    Gender CHAR(1) CHECK(GENDER IN('M','F')) ,
    Relationship VARCHAR(20) NOT NULL ,
    FOREIGN KEY (P_id) REFERENCES CUSTOMER(Passport_id) ,
    PRIMARY KEY(First_Name,Middle_Name,Last_Name,P_id)
);
```

8. Bill:

```sql
CREATE TABLE BILL
(
    Transaction_id VARCHAR(15) PRIMARY KEY ,
    Payment_date DATE NOT NULL ,
    Method_Of_Payment VARCHAR(20) NOT NULL ,
    Psprt_id CHAR(9) ,
    FOREIGN KEY(Psprt_id)REFERENCES CUSTOMER(Passport_id)
);
```

9. Department:

```sql
CREATE TABLE DEPARTMENT
  (
      Branch_Nb VARCHAR(5) NOT NULL ,
      Department_Name VARCHAR(30) NOT NULL ,
      Description VARCHAR(100) NOT NULL ,
      FOREIGN KEY (Branch_Nb) REFERENCES BRANCH(BRANCH_NUMBER) ,
      PRIMARY KEY(Branch_Nb,Department_Name)
  );
```

10. EMERGENCY_CONTACT1

```sql
CREATE TABLE EMERGENCY_CONTACT1
(
    First_Name VARCHAR(15) NOT NULL,
    Middle_Name VARCHAR(15),
    Last_Name VARCHAR(15) NOT NULL,
    Chat_id VARCHAR(8) NOT NULL,
    Relatioship VARCHAR(10),
    p_id CHAR(9),
    PRIMARY KEY(First_Name, Middle_Name, Last_Name, p_id),
    FOREIGN KEY(p_id) REFERENCES CUSTOMER(Passport_id)
);
```

11. EMERGENCY_CONTACT2

```sql
CREATE TABLE EMERGENCY_CONTACT2
 (
    First_Name VARCHAR(15) NOT NULL,
    Middle_Name VARCHAR(15),
    Last_Name VARCHAR(15) NOT NULL,
    Chat_id VARCHAR(8) NOT NULL,
    Relatioship VARCHAR(10),
    essn CHAR(9),
    PRIMARY KEY(First_Name, Middle_Name, Last_Name, essn),
    FOREIGN KEY(essn) REFERENCES EMPLOYEE(EMPLOYEE_SSN)
 );
```

12.BRANCH

```sql
CREATE TABLE BRANCH
 (
         Branch_Number VARCHAR(5)PRIMARY KEY,
         Street_Number VARCHAR(5),
         City VARCHAR(10),
         State VARCHAR(10),
         Country VARCHAR(15),
         Planet VARCHAR(15)
    );
```

13.PARTNER

```sql
CREATE TABLE PARTNER
(
     Partner_id CHAR(9) PRIMARY KEY,
     Name VARCHAR(20) NOT NULL,
     City VARCHAR(15),
     State VARCHAR(10),
     Country VARCHAR(15),
     Planet VARCHAR(15),
     Service VARCHAR(15) NOT NULL,
     Street_Number VARCHAR(6)
);
```

14.CUSTOMER_PURCHASE_HISTORY

```sql
CREATE TABLE CUSTOMER_PURCHASED_HISTORY
(

     Purchase_Tickets_id CHAR(9),

     Psprt_id CHAR(9),

     PRIMARY KEY (Purchase_Tickets_id, Psprt_id),

     FOREIGN KEY(Purchase_Tickets_id) REFERENCES
TICKET(Ticket_Number),

     FOREIGN KEY(Psprt_id) REFERENCES CUSTOMER(Passport_id)

);
```

15.PARTNER_OPERATING_COUNTRIES

```sql
CREATE TABLE PARTNER_OPERATING_COUNTRIES
(

     Country VARCHAR(15)  ,

     Prtnr_id CHAR(9),

     PRIMARY KEY (Country ,Prtnr_id),

     FOREIGN KEY(Prtnr_id) REFERENCES PARTNER(Partner_id)

);
```

16.RECOMMENDS

```
CREATE TABLE RECOMMENDS
(
     Employee_ssn CHAR(9),
     Psprt_id CHAR(9),
     Htl_id CHAR(9),
     PRIMARY KEY (Employee_ssn,psprt_id,htl_id),
     FOREIGN KEY(Employee_ssn) REFERENCES EMPLOYEE(Employee_ssn),
     FOREIGN KEY(Psprt_id) REFERENCES CUSTOMER(Passport_id),
     FOREIGN KEY(Htl_id) REFERENCES HOTEL(Hotel_id)
);
```

17.MANAGES

```
CREATE TABLE MANAGES
(
     Employee_ssn CHAR(9),
     Psprt_id CHAR(9),
     PRIMARY KEY (Employee_ssn,psprt_id),
     FOREIGN KEY(Employee_ssn) REFERENCES EMPLOYEE(Employee_ssn),
     FOREIGN KEY(Psprt_id) REFERENCES CUSTOMER(Passport_id));
```

XII.   Table Descriptions

After creating the tables on the Oracle Database Server, we are going to list the names of all our entities. Then, we are going to view description of each table created.

List of Tables: Query + Result

- **Query:**

  SELECT DISTINCT OBJECT_NAME

  FROM USER_OBJECTS

  WHERE OBJECT_TYPE = 'TABLE';

- **Result:**

CUSTOMER
EMPLOYEE
TICKET
HOTEL
ROOM
COMPANION
BILL
DEPARTMENT
EMERGENCY_CONTACT
EMERGENCY_CONTACT2
BRANCH
PARTNER
CUSTOMER_PURCHASE_HISTORY
RECOMENDS
PARTNER_OPERATING_COUNTRIES

1. **CUSTOMER Description:**

SQL> DESC CUSTOMER

COLUMN NAME	DATA TYPE	NULLABLE
PASSPORT_ID [P1]	CHAR(9)	No
FIRST_NAME	VARCHAR2(15)	No
MIDDLE_NAME	VARCHAR2(15)	No
LAST_NAME	VARCHAR2(15)	No
CHAT_ID	VARCHAR2(8)	No
DATE_OF_BIRTH	DATE	No
STREET_NUMBER	VARCHAR2(5)	Yes
CITY	VARCHAR2(15)	Yes
STATE	VARCHAR2(15)	Yes
COUNTRY	VARCHAR2(15)	Yes
PLANET	VARCHAR2(15)	Yes
GENDER	CHAR(1)	Yes
POINTS_BALANCE	NUMBER	No
HOTEL_ID	CHAR(9)	Yes
BRNCH_NB	VARCHAR2(5)	Yes

2. <u>EMPLOYEE Description:</u>

SQL>DESC EMPLOYEE

COLUMN NAME	DATA TYPE	NULLABLE
EMPLOYEE_SSN [P1]	CHAR(9)	No
FIRST_NAME	VARCHAR2(15)	No
MIDDLE_NAME	VARCHAR2(15)	No
LAST_NAME	VARCHAR2(15)	No
CHAT_ID	VARCHAR2(8)	No
DATE_OF_BIRTH	DATE	No
STREET_NUMBER	VARCHAR2(5)	Yes
CITY	VARCHAR2(15)	Yes
STATE	VARCHAR2(15)	Yes
COUNTRY	VARCHAR2(15)	Yes
PLANET	VARCHAR2(15)	Yes
GENDER	CHAR(1)	Yes
SALARY	NUMBER(6,2)	Yes
POSITION	VARCHAR2(30)	Yes
SUPERVISOR_SSN	CHAR(9)	Yes
BRANCH_NUM	VARCHAR2(5)	Yes

3. <u>TICKET Description:</u>

SQL>DESC TICKET

COLUMN NAME	DATA TYPE	NULLABLE
TICKET_NUMBER	CHAR(7)	No
MODE_OF_TRANSPORTATION	VARCHAR2(20)	No
TRANSPORT_COMPANY	VARCHAR2(20)	No
BAGGAGE_WEIGHT	NUMBER(4,2)	Yes
SEAT_NUMBER	NUMBER	No
DESTINATION_CITY	VARCHAR2(10)	No
DESTINATION_STATE	VARCHAR2(10)	No
DESTINATION_COUNTRY	VARCHAR2(15)	No
DESTINATION_PLANET	VARCHAR2(15)	No
DESTINATION_TIME	TIMESTAMP(6)	No
PRICE	NUMBER(3,2)	No

TICKET_TYPE	VARCHAR2(20)	No
IS_BOOKED	NUMBER(1,0)	No
DEPARTURE_CITY	VARCHAR2(10)	No
DEPARTURE_STATE	VARCHAR2(10)	No
DEPARTURE_COUNTRY	VARCHAR2(15)	No
DEPARTURE_PLANET	VARCHAR2(15)	No
DEPARTURE_TIME	TIMESTAMP(6)	No
CONNECTION_NUMBER	CHAR(7)	Yes
PSPRT_ID	CHAR(9)	Yes
PRTNR_ID	CHAR(9)	Yes
BOOKING_DATE	DATE	Yes

4. <u>HOTEL Description:</u>

SQL>DESC HOTEL

COLUMN NAME	DATA TYPE	NULLABLE
HOTEL_ID [P1]	CHAR(9)	No
HOTEL_NAME	VARCHAR2(20)	No
STREET_NUMBER	VARCHAR2(5)	Yes
CITY	VARCHAR2(10)	Yes
STATE	VARCHAR2(10)	Yes
COUNTRY	VARCHAR2(15)	Yes
PLANET	VARCHAR2(15)	Yes
STAR_RATING	VARCHAR2(1)	Yes
NUMBER_OF_MEALS	VARCHAR2(4)	Yes
PRICE	VARCHAR2(5)	Yes
IS_PARTNER	CHAR(1)	Yes

5. <u>ROOM Description:</u>

SQL>DESC ROOM

COLUMN NAME	DATA TYPE	NULLABLE
H_ID	CHAR(9)	No
ROOM_NUMBER	CHAR(3)	No
CAPACITY	NUMBER	Yes
ROOM_TYPE	VARCHAR2(15)	Yes

6. <u>CONTRACT Description:</u>

COLUMN NAME	DATA TYPE	NULLABLE
CONTRACT_ID	CHAR(7)	No
IS_REFUNDABLE	CHAR(1)	No
IS_SIGNED	CHAR(1)	No
EXPIRY_DATE	DATE	No
TRAVEL_REASON	VARCHAR2(20)	No
ESSN	CHAR(9)	No
PSPRT_ID	CHAR(9)	Yes

7. <u>**COMPANION** Description:</u>

SQL>DESC COMPANION

COLUMN NAME	DATA TYPE	NULLABLE
FIRST_NAME [P1]	VARCHAR2(15)	No
MIDDLE_NAME [P2]	VARCHAR2(15)	No
LAST_NAME [P3]	VARCHAR2(15)	No
P_ID [P4]	CHAR(9)	No
CHAT_ID	VARCHAR2(8)	No
DATE_OF_BIRTH	DATE	Yes
GENDER	CHAR(1)	Yes
RELATIONSHIP	VARCHAR2(20)	No

8. <u>**BILL** Description:</u>

SQL>DESC BILL

COLUMN NAME	DATA TYPE	NULLABLE

TRANSACTION_ID [P1]	VARCHAR2(15)	No
PAYMENT_DATE	DATE	No
METHOD_OF_PAYMENT	VARCHAR2(20)	No
PSPRT_ID	CHAR(9)	Yes

9. <u>DEPARTMENT Description</u>

SQL>DESC DEPARTMENT

COLUMN NAME	DATA TYPE	NULLABLE
BRANCH_NB [P1]	VARCHAR2(5)	No
DEPARTMENT_NAME [P2]	VARCHAR2(30)	No
DESCRIPTION	VARCHAR2(100)	No

10. <u>EMERGENCY CONTACT1 Description:</u>

SQL>DESC EMERGENCY_CONTACT

COLUMN NAME	DATA TYPE	NULLABLE
FIRST_NAME [P1]	VARCHAR2(15)	No
MIDDLE_NAME [P2]	VARCHAR2(15)	Yes
LAST_NAME [P3]	VARCHAR2(15)	No
CHAT_ID	VARCHAR2(8)	No
RELATIOSHIP	VARCHAR2(10)	Yes
P_ID [P4]	CHAR(9)	Yes

11. **EMERGENCY CONTACT2 Description:**

SQL>DESC EMERGENCY_CONTACT2

COLUMN NAME	DATA TYPE	NULLABLE
FIRST_NAME [P1]	VARCHAR2(15)	No
MIDDLE_NAME [P2]	VARCHAR2(15)	Yes
LAST_NAME [P3]	VARCHAR2(15)	No
CHAT_ID	VARCHAR2(8)	No
RELATIOSHIP	VARCHAR2(10)	Yes
ESSN [P4]	CHAR(9)	Yes

12. **BRANCH Description:**

SQL>DESC BRANCH

COLUMN NAME	DATA TYPE	NULLABLE
BRANCH_NUMBER [P1]	VARCHAR2(5)	No
STREET_NUMBER	VARCHAR2(5)	Yes
CITY	VARCHAR2(10)	Yes
STATE	VARCHAR2(10)	Yes
COUNTRY	VARCHAR2(15)	Yes
PLANET	VARCHAR2(15)	Yes

13. **PARTNER Description:**

SQL>DESC PARTNER

COLUMN NAME	DATA TYPE	NULLABLE
PARTNER_ID [P1]	CHAR(9)	No
NAME	VARCHAR2(20)	No
CITY	VARCHAR2(15)	Yes
STATE	VARCHAR2(10)	Yes
COUNTRY	VARCHAR2(15)	Yes
PLANET	VARCHAR2(15)	Yes
SERVICE	VARCHAR2(15)	No
STREET_NUMBER	VARCHAR2(6)	Yes

14. __CUSTOMER PURCHASE HISTORY Description:__

SQL>DESC CUSTOMER_PURCHASE_HISTORY

COLUMN NAME	DATA TYPE	NULLABLE
PURCHASE_TICKETS_ID [P1]	CHAR(9)	No
PSPRT_ID [P2]	CHAR(9)	No

15. __PARTNER OPERATING COUNTRIES Description:__

SQL>DESC PARTNER_OPERATING_COUNTRIES

COLUMN NAME	DATA TYPE	NULLABLE
COUNTRY [P1]	VARCHAR2(20)	No
PRTNR_ID [P2]	CHAR(9)	No

16. __RECOMMENDS Description:__

SQL>DESC RECOMMENDS

COLUMN NAME	DATA TYPE	NULLABLE
EMPLOYEE_SSN [P1]	CHAR(9)	No
PSPRT_ID [P2]	CHAR(9)	No
HTL_ID [P3]	CHAR(9)	No

17. <u>MANAGES Description:</u>

SQL>DESC RECOMMENDS

COLUMN NAME	DATA TYPE	NULLABLE
EMPLOYEE_SSN	CHAR(9)	No
PSPRT_ID	CHAR(9)	No

XIII.   <u>Inserting Data</u>

1. <u>CUSTOMER:</u>

i.   INSERT INTO CUSTOMER VALUES('127362306', 'Peter', 'Austin', 'McCallister', '85764399', TO_DATE('1978-03-07','YYYY-MM-DD'), ' 60093', 'Chicago', 'Illinois', 'United States', 'Earth', 'M', 4, '754125479', '00001');

ii.   INSERT INTO CUSTOMER VALUES('781457987', 'Harry', 'James', 'Potter', '14787614', TO_DATE('1980-07-31','YYYY-MM-DD'),'20741', 'London', NULL, 'England', 'Earth', 'M', 2, '125227690', '00016');

iii.   INSERT INTO CUSTOMER VALUES('984230491', 'Pete', 'Michael', 'Davidson', '72838172', TO_DATE('1993-11-16','YYYY-MM-DD'), '62549', 'Staten Island', 'New York', 'United States', 'Earth', 'M', 12, '620390011', '00030');

iv.   INSERT INTO CUSTOMER VALUES('721230456', 'Thomas', 'Stanley', 'Holland', '29145713', TO_DATE('1996-06-01','YYYY-MM-DD'), '62549', 'Kingston', DEFAULT, 'England', 'Earth', 'M', 10, '620390011', '00030');

v.   INSERT INTO CUSTOMER VALUES('644578149', 'Ryan', 'Rodney', 'Reynolds', '23781639', TO_DATE('1976-10-23','YYYY-MM-DD'), '58172', 'Vancouver', DEFAULT, 'Canada', 'Earth', 'M', 8, '620390011', '00030');

vi.   INSERT INTO CUSTOMER VALUES('432779156', 'Michael', 'Lee', 'Taylor', '81928265', TO_DATE('1960-04-04','YYYY-MM-DD'), '79144', 'Boston', 'Massachusetts', 'United States', 'Earth', 'M', 14, NULL, '00088');

vii.   INSERT INTO CUSTOMER VALUES('432779157', 'Peter', 'Matthew', 'Taylor', '81928266', TO_DATE('1992-05-23','YYYY-MM-DD'), '79144', 'Boston', 'Massachusetts', 'United States', 'Earth', 'M', 14, NULL, '00088');

viii.   INSERT INTO CUSTOMER VALUES('601928374', 'Anton', 'Oleg', 'Lavrov', '81928267', TO_DATE('1991-04-23','YYYY-MM-DD'), '79144', 'Boston', NULL, 'Moscow', 'Earth', 'M', 13, NULL, '00066');

ix.   INSERT INTO CUSTOMER VALUES('601928375', 'Ilya', 'Aleksandr', 'Pavlov', '81928268', TO_DATE('1992-05-18','YYYY-MM-DD'), '79144', 'Moscow', NULL, 'Moscow', 'Earth', 'M', 7, NULL, '00066');

x.   INSERT INTO CUSTOMER VALUES('700192018', 'Andrea', 'Sofia', 'Rossi', '81920918', TO_DATE('2001-09-21', 'YYYY-MM-DD'), '84521', 'Milan', DEFAULT, 'Italy', 'Earth', 'F', 20, '720901923', '00044');

xi.   INSERT INTO CUSTOMER VALUES('149823934', 'Kumar', 'Aarav' , 'Patil', '13457309', TO_DATE('1998-02-25', 'YYYY-MM-DD'), '15612', 'New Delhi', DEFAULT, 'India', 'Earth', 'M', 100, NULL, '00099');

xii. INSERT INTO CUSTOMER VALUES('556891162', 'Ibrahim', 'Rabih' , 'Ammar', '37810825', TO_DATE('1995-04-19', 'YYYY-MM-DD'), '67138', 'Beirut', DEFAULT, 'Lebanon', 'Earth', 'M', 41, '43023817', '00022');

2. <u>EMPLOYEE:</u>

i.   INSERT INTO EMPLOYEE VALUES('889928456', 'James', 'Harold', 'Maddison', '71817135', TO_DATE('1989-07-15','YYYY-MM-DD'),'61728', 'Chicago', 'Illinois', 'United States', 'Earth', 'M', 6.02, 'Travel Agent', 61229982, '00001');

ii. INSERT INTO EMPLOYEE VALUES('61229982', 'John', 'Michael', 'Smith', '71817123', TO_DATE('1986-04-25','YYYY-MM-DD'), ' 61721', 'Chicago', 'Illinois', 'United States', 'Earth', 'M', 7.02, 'Manager', DEFAULT, '00001');

iii. INSERT INTO EMPLOYEE VALUES('439088731', 'Simon', 'Ethan', 'Williams', '71817119', TO_DATE('1988-08-11','YYYY-MM-DD'),'43128', 'London', DEFAULT, 'England', 'Earth', 'M', 6.02, 'Travel Agent', 420885610, '00016');

iv. INSERT INTO EMPLOYEE VALUES('420885610', 'Faith', 'Lena', 'Allen', '71817578', TO_DATE(' 1985-01-12','YYYY-MM-DD'),'43131', 'London', DEFAULT, 'England', 'Earth', 'F', 7.02, 'Manager', DEFAULT, '00016');

v.   INSERT INTO EMPLOYEE VALUES('439088732', 'Elizabeth', 'Olivia', 'Coleman', '63391035', TO_DATE('1985-05-13','YYYY-MM-DD'),'91023', 'Fort Worth', 'Texas', 'United States', 'Earth', 'F', 6.02, 'Travel Agent', '910284334', '00030');

vi. INSERT INTO EMPLOYEE VALUES('910284334', 'Grace', 'Amelia', 'Robert', '81093581', TO_DATE(' 1980-08-19','YYYY-MM-DD'),'91029', 'Fort Worth', 'Texas', 'United States', 'Earth', 'F', 7.02, 'Manager', DEFAULT, '00030');

vii. INSERT INTO EMPLOYEE VALUES('819026609', 'Akira', 'Hiroshi', 'Kiyama', '81093582', TO_DATE(' 1979-01-02','YYYY-MM-DD'),'17284', 'Osaka', NULL, 'Japan', 'Earth', 'M', 6.02, 'Travel Agent', 819026608, '00088');

viii. INSERT INTO EMPLOYEE VALUES('819026608', 'Izumi', 'Sora', 'Sakai', '81093583', TO_DATE(' 1976-03-19','YYYY-MM-DD'),'45665', 'Osaka', NULL, 'Japan', 'Earth', 'F', 7.02, 'Manager', DEFAULT, '00088');

ix. INSERT INTO EMPLOYEE VALUES('611209182', 'Blessing', 'Abigail', 'Egbe', '65128090', TO_DATE(' 1974-02-19','YYYY-MM-DD'),'56710', 'Lagos', NULL, 'Nigeria', 'Earth', 'F', 8.02, 'Researcher', '611209181', '00055');

x.   INSERT INTO EMPLOYEE VALUES('611209181', 'Chinara', 'Abebi', 'Okoye', '65128090', TO_DATE(' 1970-10-29','YYYY-MM-DD'),'61092', 'Lagos', NULL, 'Nigeria', 'Earth', 'F', 9.02, 'Research Manager', DEFAULT, '00055');

xi.   INSERT INTO EMPLOYEE VALUES('344309012', 'Natasha', 'Anastasia', 'Smirnov', '65128091', TO_DATE(' 1997-11-26','YYYY-MM-DD'),'33801', 'Moscow', NULL, 'Russia', 'Earth', 'F', 5.02, 'Travel Agent Manager', NULL, '00066');

xii. INSERT INTO EMPLOYEE VALUES('344309013', 'Ivan', 'Dimitri', 'Orlov', '65128092', TO_DATE('1995-12-03','YYYY-MM-DD'),'61092', 'Moscow', NULL, 'Russia', 'Earth', 'M', 7.02, 'HR Manager', DEFAULT, '00066');

xiii. INSERT INTO EMPLOYEE VALUES('301928371', 'Eduardo', 'Antonio', 'Bruno', '99817134', TO_DATE('1990-08-05'), '56527', 'Milan', DEFAULT, 'Italy', 'Earth', 'M', 6.02, 'Travel Agent', '301928372', '00044');

xiv. INSERT INTO EMPLOYEE VALUES('301928372', 'Alice', 'Chiara', 'Greco', '99817133', TO_DATE('1990-08-05', 'YYYY-MM-DD'), '56527', 'Milan', DEFAULT, 'Italy', 'Earth', 'F', 7.02, 'Travel Agent Manager', DEFAULT, '00044');

xv.   INSERT INTO EMPLOYEE VALUES('491022860', 'Viraj', 'Rohan', 'Sharma', '99817134', TO_DATE('1991-03-11', 'YYYY-MM-DD'), '56528', 'New Delhi', DEFAULT, 'India', 'Earth', 'M', 6.02, 'Travel Agent', '301928372', '00099');

xvi. INSERT INTO EMPLOYEE VALUES('491022861', 'Kiaan', 'Advik', 'Singh', '99817135', TO_DATE('1988-08-06', 'YYYY-MM-DD'), '56529', 'New Delhi', DEFAULT, 'India', 'Earth', 'M', 7.02, 'Travel Agent Manager', DEFAULT, '00099');

xvii. INSERT INTO EMPLOYEE VALUES('801927541', 'Ghada', 'Maria', 'Saad', '99817136', TO_DATE('1986-03-06', 'YYYY-MM-DD'), '56320', 'Beirut', DEFAULT, 'Lebanon', 'Earth', 'F', 6.02, 'Travel Agent','801927542', '00022');

xviii. INSERT INTO EMPLOYEE VALUES('801927542', 'Sarah', 'Hala', 'Mrad', '99817137', TO_DATE('1981-08-18', 'YYYY-MM-DD'), ' 56457', 'Beirut', DEFAULT, 'Lebanon', 'Earth', 'F', 7.02, 'Travel Agent Manager', DEFAULT, '00022');

3. TICKET:

i.   INSERT INTO TICKET VALUES('1457855','Plane', 'American Airlines', 64, 58, 'New York', 'New York', 'United States', 'Earth', TO_TIMESTAMP('2021-12-24 10:05:00', 'YYYY-MM-DD HH:MI:SS'),0.07, 'Round-Trip', 1, 'Chicago', 'Illinois' , 'United States', 'Earth', TO_TIMESTAMP('2021-12-24 8:05:00', 'YYYY-MM-DD HH:MI:SS'), NULL, '127362306', '376180927', TO_DATE('2021-11-24', 'YYYY-MM-DD'));

ii. INSERT INTO TICKET VALUES('1588511', 'Train', 'Hogwarts Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland', 'Earth', TO_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT, 'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00', 'YYYY-MM-DD HH:MI:SS'), NULL, '781457987',' 541180927', TO_DATE('2021-09-04', 'YYYY-MM-DD'));

iii. INSERT INTO TICKET VALUES('1588512', 'Train', 'Hogwarts Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland', 'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT,

```
                  'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00',
                  'YYYY-MM-DD HH:MI:SS'), NULL, '781457987',' 541180927',
                  TO_DATE('2021-09-04', 'YYYY-MM-DD'));
```

iv.　**INSERT INTO TICKET VALUES**('1588513', 'Train', 'Hogwarts
Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland',
'Earth', 'TO_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-
DD HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT,
'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '781457987',' 541180927',
TO_DATE('2021-09-04', 'YYYY-MM-DD'));

v.　**INSERT INTO TICKET VALUES**('1588514', 'Train', 'Hogwarts
Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland',
'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD
HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT,
'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '781457987',' 541180927',
TO_DATE('2021-09-04', 'YYYY-MM-DD'));

vi.　**INSERT INTO TICKET VALUES**('1588515', 'Train', 'Hogwarts
Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland',
'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD
HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT,
'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '781457987',' 541180927',
TO_DATE('2021-09-04', 'YYYY-MM-DD'));

vii.　**INSERT INTO TICKET VALUES**('1588516', 'Train', 'Hogwarts
Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland',
'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD
HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT,
'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '781457987',' 541180927',
TO_DATE('2021-09-04', 'YYYY-MM-DD'));

viii.　**INSERT INTO TICKET VALUES**('1288511', 'Train', 'Hogwarts
Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland',
'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD
HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT,
'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, NULL,' 541180927', NULL)

ix.　**INSERT INTO TICKET VALUES**('1288512', 'Train', 'Hogwarts
Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland',
'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD
HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT,
'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, NULL,' 541180927', NULL)

x.　**INSERT INTO TICKET VALUES**('1288513', 'Train', 'Hogwarts
Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland',
'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD
HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT,
'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, NULL,' 541180927', NULL)

xi. **INSERT INTO TICKET VALUES**('1288514', 'Train', 'Hogwarts Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland', 'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT, 'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00', 'YYYY-MM-DD HH:MI:SS'), NULL, NULL,' 541180927', NULL)

xii. **INSERT INTO TICKET VALUES**('1288515', 'Train', 'Hogwarts Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland', 'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT, 'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00', 'YYYY-MM-DD HH:MI:SS'), NULL, NULL,' 541180927', NULL)

xiii. **INSERT INTO TICKET VALUES**('1288516', 'Train', 'Hogwarts Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland', 'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT, 'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00', 'YYYY-MM-DD HH:MI:SS'), NULL, NULL,' 541180927', NULL)

xiv. **INSERT INTO TICKET VALUES**('1288517', 'Train', 'Hogwarts Express', 40, 45, 'Hogwarts', DEFAULT, 'Scotland', 'Earth', To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.01, 'One-Way', 1, 'London', DEFAULT, 'England', 'Earth', TO_TIMESTAMP('2021-10-04 11:30:00', 'YYYY-MM-DD HH:MI:SS'), NULL, NULL,' 541180927', NULL)

xv. **INSERT INTO TICKET VALUES**('8192002', 'Spaceship', 'SpaceX', 60, 67, 'Nuwa', DEFAULT, 'Tempe Mensa', 'Mars', To_TIMESTAMP('2022-02-05 9:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.1, 'Round-Trip', 1, 'Fort Worth', 'Texas', 'United States', 'Earth', TO_TIMESTAMP('2022-10-04 1:30:00', 'YYYY-MM-DD HH:MI:SS'), NULL, '984230491','810091665', TO_DATE('2021-07-02', 'YYYY-MM-DD'));

xvi. **INSERT INTO TICKET VALUES**('8192003', 'Spaceship', 'SpaceX', 60, 67, 'Nuwa', DEFAULT, 'Tempe Mensa', 'Mars', To_TIMESTAMP('2022-02-05 9:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.1, 'Round-Trip', 1, 'Fort Worth', 'Texas', 'United States', 'Earth', TO_TIMESTAMP('2022-10-04 1:30:00', 'YYYY-MM-DD HH:MI:SS'), NULL, '721230456','810091665', TO_DATE('2021-07-02', 'YYYY-MM-DD'));

xvii. **INSERT INTO TICKET VALUES**('8192004', 'Spaceship', 'SpaceX', 60, 67, 'Nuwa', DEFAULT, 'Tempe Mensa', 'Mars', To_TIMESTAMP('2022-02-05 9:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.1, 'Round-Trip', 1, 'Fort Worth', 'Texas', 'United States', 'Earth', TO_TIMESTAMP('2022-10-04 1:30:00', 'YYYY-MM-DD HH:MI:SS'), NULL, '644578149','810091665', TO_DATE('2021-07-02', 'YYYY-MM-DD'));

xviii. **INSERT INTO TICKET VALUES**('6651001', 'Train', 'Japan Railways', 65, 71, 'Tokyo', DEFAULT, 'Japan', 'Earth', To_TIMESTAMP('2022-02-05 9:30:00', 'YYYY-MM-DD HH:MI:SS'), 0.1, 'One-Way', 1, 'Osaka', 'DEFAULT', 'Japan', 'Earth', TO_TIMESTAMP('2022-02-05 7:30:00',

'YYYY-MM-DD HH:MI:SS'), NULL, '432779156','810091661',
TO_DATE('2022-02-05', 'YYYY-MM-DD'));

xix.   INSERT INTO TICKET VALUES('6651002', 'Train', 'Japan
Railways', 65, 71, 'Tokyo', DEFAULT, 'Japan', 'Earth',
To_TIMESTAMP('2022-02-05 9:30:00', 'YYYY-MM-DD
HH:MI:SS'), 0.1, 'One-Way', 1, 'Osaka', 'DEFAULT',
'Japan', 'Earth', TO_TIMESTAMP('2022-02-05 7:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '432779157','810091661',
TO_DATE('2022-02-05', 'YYYY-MM-DD'));

xx.   INSERT INTO TICKET VALUES('6651003', 'Plane', 'Japan
Airlines', 65, 71, 'Beirut', DEFAULT, 'Lebanon',
'Earth', To_TIMESTAMP('2022-02-05 20:30:00', 'YYYY-MM-DD
HH24:MI:SS'), 0.1, 'One-Way', 1, 'Osaka', 'DEFAULT',
'Japan', 'Earth', TO_TIMESTAMP('2022-02-05 12:30:00',
'YYYY-MM-DD HH:MI:SS'), '6651001',
'432779156','810091662', TO_DATE('2021-01-03', 'YYYY-MM-
DD'));

xxi.   INSERT INTO TICKET VALUES('6651004', 'Plane', 'Japan
Airlines', 65, 71, 'Beirut', DEFAULT, 'Lebanon',
'Earth', To_TIMESTAMP('2022-02-05 20:30:00', 'YYYY-MM-DD
HH24:MI:SS'), 0.1, 'One-Way', 1, 'Osaka', 'DEFAULT',
'Japan', 'Earth', TO_TIMESTAMP('2022-02-05 12:30:00',
'YYYY-MM-DD HH:MI:SS'), '6651002',
'432779157','810091662', TO_DATE('2021-01-03', 'YYYY-MM-
DD'));

xxii.   INSERT INTO TICKET VALUES('7001920', 'Plane',
'Aeroitalia', 60, 78, 'Copenhagen', DEFAULT, 'Denmark',
'Earth', To_TIMESTAMP('2022-05-11 15:25:00', 'YYYY-MM-DD
HH24:MI:SS'), 0.1, 'One-Way', 1, 'Milan', 'DEFAULT',
'Italy', 'Earth', TO_TIMESTAMP('2022-05-11 13:25:00',
'YYYY-MM-DD HH24:MI:SS'), NULL, '700192018','690192010',
TO_DATE('2022-04-03', 'YYYY-MM-DD'));

xxiii.   INSERT INTO TICKET VALUES('6701921', 'Plane', 'Middle
East Airline', 60, 79, 'Paris', DEFAULT, 'France',
'Earth', To_TIMESTAMP('2022-07-22 13:35:00', 'YYYY-MM-DD
HH24:MI:SS'), 0.1, 'One-Way', 1, 'Beirut', 'DEFAULT',
'Lebanon', 'Earth', TO_TIMESTAMP('2022-07-22 09:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '556891162','187102918',
TO_DATE('2022-04-01', 'YYYY-MM-DD'));

xxiv.   INSERT INTO TICKET VALUES('6701922', 'Plane', 'Middle
East Airline', 60, 79, 'Paris', DEFAULT, 'France',
'Earth', To_TIMESTAMP('2022-07-22 13:35:00', 'YYYY-MM-DD
HH24:MI:SS'), 0.1, 'One-Way', 1, 'Beirut', 'DEFAULT',
'Lebanon', 'Earth', TO_TIMESTAMP('2022-07-22 09:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '556891162','187102918',
TO_DATE('2022-04-01', 'YYYY-MM-DD'));

xxv.   INSERT INTO TICKET VALUES('6701923', 'Plane', 'Middle
East Airline', 60, 79, 'Paris', DEFAULT, 'France',
'Earth', To_TIMESTAMP('2022-07-22 13:35:00', 'YYYY-MM-DD
HH24:MI:SS'), 0.1, 'One-Way', 1, 'Beirut', 'DEFAULT',
'Lebanon', 'Earth', TO_TIMESTAMP('2022-07-22 09:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '556891162','187102918',
TO_DATE('2022-04-01', 'YYYY-MM-DD'));

xxvi.   INSERT INTO TICKET VALUES('6701924', 'Plane', 'Middle
East Airline', 60, 79, 'Paris', DEFAULT, 'France',
'Earth', To_TIMESTAMP('2022-07-22 13:35:00', 'YYYY-MM-DD

HH24:MI:SS'), 0.1, 'One-Way', 1, 'Beirut', 'DEFAULT',
'Lebanon', 'Earth', TO_TIMESTAMP('2022-07-22 09:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '556891162','187102918',
TO_DATE('2022-04-01', 'YYYY-MM-DD'));

xxvii.   **INSERT INTO TICKET VALUES**('6701925', 'Plane', 'Middle
East Airline', 60, 79, 'Paris', DEFAULT, 'France',
'Earth', To_TIMESTAMP('2022-07-22 13:35:00', 'YYYY-MM-DD
HH24:MI:SS'), 0.1, 'One-Way', '1', 'Beirut', 'DEFAULT',
'Lebanon', 'Earth', TO_TIMESTAMP('2022-07-22 09:30:00',
'YYYY-MM-DD HH:MI:SS'), NULL, '556891162','187102918',
TO_DATE('2022-04-01', 'YYYY-MM-DD'));

xxviii.   **INSERT INTO TICKET VALUES**('6701931', 'Plane', 'French
Airlines', 60, 52, 'Detroit', 'Michigan', 'United
States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00',
'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '1', 'Paris',
'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22
13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701921',
'556891162', '920267029', TO_DATE('2022-04-01', 'YYYY-
MM-DD'));

xxix.   **INSERT INTO TICKET VALUES**('6701932', 'Plane', 'French
Airlines', 60, 52, 'Detroit', 'Michigan', 'United
States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00',
'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '1', 'Paris',
'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22
13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701922',
'556891162','920267029', TO_DATE('2022-04-01', 'YYYY-MM-
DD'));

xxx.   **INSERT INTO TICKET VALUES**('6701933', 'Plane', 'French
Airlines', 60, 52, 'Detroit', 'Michigan', 'United
States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00',
'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '1', 'Paris',
'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22
13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701923',
'556891162','920267029', TO_DATE('2022-04-01', 'YYYY-MM-
DD'));

xxxi.   **INSERT INTO TICKET VALUES**('6701934', 'Plane', 'French
Airline', 60, 52, 'Detroit', 'Michigan', 'United
States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00',
'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '1', 'Paris',
'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22
13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701924',
'556891162','920267029', TO_DATE('2022-04-01', 'YYYY-MM-
DD'));

xxxii.   **INSERT INTO TICKET VALUES**('6701935', 'Plane', 'French
Airline', 60, 52, 'Detroit', 'Michigan', 'United
States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00',
'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '1', 'Paris',
'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22
13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701925',
'556891162','920267029', TO_DATE('2022-04-01', 'YYYY-MM-
DD'));

xxxiii.   **INSERT INTO TICKET VALUES**('6701941', 'Plane', 'American
Airlines', 60, 52, 'Detroit', 'Michigan', 'United
States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00',

```
                    'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '0', 'Paris',
                    'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22
                    13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701921',
                    NULL,'376180927', TO_DATE('2022-04-01', 'YYYY-MM-DD'));
```

xxxiv. INSERT INTO TICKET VALUES('6701942', 'Plane', 'American Airlines', 60, 52, 'Detroit', 'Michigan', 'United States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00', 'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '0', 'Paris', 'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22 13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701922', NULL,'376180927', TO_DATE('2022-04-01', 'YYYY-MM-DD'));

xxxv. INSERT INTO TICKET VALUES('6701943', 'Plane', 'American Airlines', 60, 52, 'Detroit', 'Michigan', 'United States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00', 'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '0', 'Paris', 'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22 13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701923', NULL,'376180927', TO_DATE('2022-04-01', 'YYYY-MM-DD'));

xxxvi. INSERT INTO TICKET VALUES('6701944', 'Plane', 'American Airlines', 60, 52, 'Detroit', 'Michigan', 'United States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00', 'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '0', 'Paris', 'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22 13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701924', NULL,'376180927', TO_DATE('2022-04-01', 'YYYY-MM-DD'));

xxxvii. INSERT INTO TICKET VALUES('6701945', 'Plane', 'American Airlines', 60, 52, 'Detroit', 'Michigan', 'United States', 'Earth', To_TIMESTAMP('2022-07-23 15:25:00', 'YYYY-MM-DD HH24:MI:SS'), 0.1, 'One-Way', '0', 'Paris', 'DEFAULT', 'France', 'Earth', TO_TIMESTAMP('2022-07-22 13:25:00', 'YYYY-MM-DD HH24:MI:SS'), '6701925', NULL,'376180927', TO_DATE('2022-04-01', 'YYYY-MM-DD'));

4. <u>HOTEL:</u>

i. INSERT INTO HOTEL VALUES('754125479', 'Liberty Motel', '43629', 'New York', 'New York', 'United States', 'Earth', '3','2','0.01','N');

ii. INSERT INTO HOTEL VALUES('125227690', 'Hogwarts School', '30901', 'Hogwarts', NULL, 'Scotland', 'Earth', '5','3','0.02','N');

iii. INSERT INTO HOTEL VALUES('620390011', 'King Galaxy Hotel', '00389', 'Nuwa', NULL, 'Tempe Mensa', 'Mars', '3','3','0.05','N');

iv. INSERT INTO HOTEL VALUES('720901923', 'Four Seasons Hotel', '09135', 'Copenhagen', NULL, 'Denmark', 'Earth','4','3','0.05','N');

v. INSERT INTO HOTEL VALUES('720901924', 'Marriott Hotel', '09135', 'Copenhagen', NULL, 'Denmark', 'Earth', '4','3','0.05','N');

vi. INSERT INTO HOTEL VALUES('720901925', 'Copenhagen Hotel', '09132', 'Copenhagen', NULL, 'Denmark', 'Earth', '2','2','0.02','N');

```
vii.    INSERT INTO HOTEL VALUES('720901926', 'Northern Light Hotel',
        '09131', 'Copenhagen', NULL, 'Denmark', 'Earth',
        '2','2','0.02','N');
viii.   INSERT INTO HOTEL VALUES('720901927', 'European Hotel',
        '09137', 'Copenhagen', NULL, 'Denmark', 'Earth',
        '4','2','0.05','N');
ix.     INSERT INTO HOTEL VALUES('720901928', 'Galaxy Hotel', '09138',
        'Copenhagen', NULL, 'Denmark', 'Earth', '3','3','0.03','N');

x.      INSERT INTO HOTEL VALUES('430293817', 'Hilton Garden Inn',
        '09135', 'Detroit', NULL, 'Michigan', 'Earth',
        '3','3','0.05','N');
```

5. ROOM:

```
i.      INSERT INTO ROOM VALUES('754125479', '122', '2', 'Double
        Bed');
ii.     INSERT INTO ROOM VALUES('125227690', '871', '3', 'Triple
        Bed');
iii.    INSERT INTO ROOM VALUES('620390011', '289', '4', 'Suite');
iv.     INSERT INTO ROOM VALUES('720901923', '289', '1', 'King-
        Sized Bed');
v.      INSERT INTO ROOM VALUES('720901924', '288', '1', 'King-
        Sized Bed');
vi.     INSERT INTO ROOM VALUES('720901924', '311', '1', 'Single
        Bed');
vii.    INSERT INTO ROOM VALUES('720901924', '312', '1', 'Double
        Bed');
viii.   INSERT INTO ROOM VALUES('720901924', '313', '1', 'Queen-
        Sized Bed');
ix.     INSERT INTO ROOM VALUES('720901924', '314', '1', 'King-
        Sized Bed');

x.      INSERT INTO ROOM VALUES('430293817', '401', '5', 'Suite');
```

6. CONTRACT:

```
i.      INSERT INTO CONTRACT VALUES('9876531', 'Y', 'Y',
        TO_DATE('2022-01-10','YYYY-MM-DD'), 'Vacation', '
        889928456', '127362306');
ii.     INSERT INTO CONTRACT VALUES('6170967', 'Y', 'Y',
        TO_DATE('2022-01-10','YYYY-MM-DD'), 'School', '439088731',
        '781457987');
iii.    INSERT INTO CONTRACT VALUES('6170922', 'Y', 'Y',
        TO_DATE('2022-08-09', 'YYYY-MM-DD'),'Exploration', '
        439088731', '984230491');
iv.     INSERT INTO CONTRACT VALUES('6170923', 'Y', 'Y',
        TO_DATE('2022-08-09', 'YYYY-MM-DD'),'Exploration', '
        439088732', '721230456');
v.      INSERT INTO CONTRACT VALUES('6170924', 'Y', 'Y',
        TO_DATE('2022-08-09', 'YYYY-MM-DD'), 'Exploration', '
        439088732', '644578149');
vi.     INSERT INTO CONTRACT VALUES('6170933', 'Y', 'Y',
        TO_DATE('2023-08-05', 'YYYY-MM-DD'), 'Music Festival', '
        819026609', '432779156');
vii.    INSERT INTO CONTRACT VALUES('6170934', 'Y', 'Y',
        TO_DATE('2023-08-05', 'YYYY-MM-DD'), 'Music Festival', '
        819026609', '432779157');
```

```
viii.  INSERT INTO CONTRACT VALUES('6170959', 'Y', 'Y',
       TO_DATE('2022-08-09', 'YYYY-MM-DD'), 'Business', '
       301928371', '700192018');
  ix.  INSERT INTO CONTRACT VALUES('6102918', 'N', 'N',
       TO_DATE('2023-08-21', 'YYYY-MM-DD'), 'Business', '
       301928371', '700192018');
   x.  INSERT INTO CONTRACT VALUES('3278001', 'Y', 'Y',
       TO_DATE('2022-08-22', 'YYYY-MM-DD'), 'Immigration', '
       801927541', '556891162');
```

7. <u>COMPANION:</u>

```
  i.  INSERT INTO COMPANION VALUES('Kevin', 'Josh', 'McCallister',
      '127362306', '13219784', TO_DATE('2013-08-17','YYYY-MM-DD'),
      'M', 'Son');
 ii.  INSERT INTO COMPANION VALUES('Ron', 'Bilius', 'Weasley',
      '781457987', '81029767', TO_DATE('1980-03-01','YYYY-MM-DD'),
      'M', 'Friend');
iii.  INSERT INTO COMPANION VALUES('Hermione', 'Jean', 'Granger',
      '781457987', '81029768', TO_DATE('1979-09-19', 'YYYY-MM-DD'),
      'F', 'Friend');
 iv.  INSERT INTO COMPANION VALUES('Ginny', 'Molly', 'Weasley',
      '781457987', '81029769', TO_DATE('1982-09-25', 'YYYY-MM-DD'),
      'F', 'Friend');
  v.  INSERT INTO COMPANION VALUES('Draco', 'Lucius', 'Malfoy',
      '781457987', '81029770', TO_DATE('1979-03-12', 'YYYY-MM-DD'),
      'M', 'Enemy');
 vi.  INSERT INTO COMPANION VALUES('Severus', 'Alan', 'Snape',
      '781457987', '81029771', TO_DATE('1955-04-17', 'YYYY-MM-DD'),
      'M', 'Professor');

vii.  INSERT INTO COMPANION VALUES('Rima', 'Sana', 'Ammar',
      '556891162', '71820901', TO_DATE('1998-06-12', 'YYYY-MM-DD'),
      'F', 'Wife');
viii. INSERT INTO COMPANION VALUES('Rana', 'Samira', 'Ammar',
      '556891162', '71820902', TO_DATE('2018-07-12', 'YYYY-MM-DD'),
      'F', 'Daughter');
 ix.  INSERT INTO COMPANION VALUES('Rami', 'Hadi', 'Ammar',
      '556891162', '71820903', TO_DATE('2019-06-12', 'YYYY-MM-DD'),
      'M', 'Son');
  x.  INSERT INTO COMPANION VALUES('Rayan', 'Amir', 'Ammar',
      '556891162', '71820904', TO_DATE('2020-06-22', 'YYYY-MM-DD'),
      'M', 'Son');
```

8. <u>BILL:</u>

```
  i.  INSERT INTO BILL VALUES('127918ABCDEF', TO_DATE('2021-12-
      01', 'YYYY-MM-DD'), 'Crypto Wallet', '127362306');
 ii.  INSERT INTO BILL VALUES('18173FEDCBA', TO_DATE('2021-09-
      04', 'YYYY-MM-DD'), 'Crypto Wallet', '781457987');
iii.  INSERT INTO BILL VALUES('23456ABCDEF', TO_DATE('2021-07-
      02', 'YYYY-MM-DD'), 'Crypto Wallet', '984230491');
```

iv. `INSERT INTO BILL VALUES`('23457ABCDEF ', TO_DATE('2021-07-02', 'YYYY-MM-DD'), 'Crypto Wallet', '721230456');
v. `INSERT INTO BILL VALUES`('23458ABCDEF ', TO_DATE('2021-07-02', 'YYYY-MM-DD'), 'Crypto Wallet', '644578149');
vi. `INSERT INTO BILL VALUES`('56390ABCDEF ', TO_DATE('2022-02-05', 'YYYY-MM-DD'), 'Crypto Wallet', '432779156');
vii. `INSERT INTO BILL VALUES`('56391ABCDEF ', TO_DATE('2022-02-05', 'YYYY-MM-DD'), 'Crypto Wallet', '432779157');
viii. `INSERT INTO BILL VALUES`('91029ABCDEF ', TO_DATE('2022-08-09', 'YYYY-MM-DD'), 'Crypto Wallet', '700192018');
ix. `INSERT INTO BILL VALUES`('91030ABCDEF ', TO_DATE('2023-08-21', 'YYYY-MM-DD'), 'Crypto Wallet', '700192018');
x. `INSERT INTO BILL VALUES`('46710ABCDEF ', TO_DATE('2022-04-01', 'YYYY-MM-DD'), 'Crypto Wallet', '556891162');

9. DEPARTMENT:

i. `INSERT INTO DEPARTMENT VALUES`('00001', 'Research and Development', 'Responsible for developing the workspace and preventing company risks');
ii. `INSERT INTO DEPARTMENT VALUES`('00001', 'Human Resources', 'Responsible for recruiting, hiring, training, firing and overall managing the employees');
iii. `INSERT INTO DEPARTMENT VALUES`('00001', 'Customer Service', 'Responsible for attending to the customer needs');
iv. `INSERT INTO DEPARTMENT VALUES`('00001', 'Marketing Department', 'Responsible for promoting the business and attracting new customers');
v. `INSERT INTO DEPARTMENT VALUES`('00001', 'Partner Relations', 'Responsible for maintaining and developing the relations with the partners of the company');
vi. `INSERT INTO DEPARTMENT VALUES`('00016', 'Research and Development', 'Responsible for developing the workspace and preventing company risks');
vii. `INSERT INTO DEPARTMENT VALUES`('00016', 'Human Resources', 'Responsible for recruiting, hiring, training, firing and overall managing the employees');
viii. `INSERT INTO DEPARTMENT VALUES`('00016', 'Customer Service', 'Responsible for attending to the customers needs');
ix. `INSERT INTO DEPARTMENT VALUES`('00016', 'Partner Relations', 'Responsible for maintaining and developing the relations with the partners of the company');
x. `INSERT INTO DEPARTMENT VALUES`('00030', 'Research and Development', 'Responsible for developing the workspace and preventing company risks');
xi. `INSERT INTO DEPARTMENT VALUES`('00030', 'Human Resources', 'Responsible for recruiting, hiring, training, firing and overall managing the employees');
xii. `INSERT INTO DEPARTMENT VALUES`('00030', 'Customer Service', 'Responsible for attending to the customers needs');
xiii. `INSERT INTO DEPARTMENT VALUES`('00030', 'Marketing Department', 'Responsible for promoting the business and attracting new customers');

xiv. INSERT INTO DEPARTMENT VALUES('00030', 'Partner Relations',
      'Responsible for maintaining and developing the relations
      with the partners of the company');

xv.   INSERT INTO DEPARTMENT VALUES('00088', 'Human Resources',
      'Responsible for recruiting, hiring, training, firing and
      overall managing the employees');

xvi. INSERT INTO DEPARTMENT VALUES('00088', 'Customer Service',
      'Responsible for attending to the customers needs');

xvii. INSERT INTO DEPARTMENT VALUES('00055', 'Research and
      Development', 'Responsible for developing the workspace and
      preventing company risks');

xviii. INSERT INTO DEPARTMENT VALUES('00055', 'Human Resources',
      'Responsible for recruiting, hiring, training, firing and
      overall managing the employees');

xix. INSERT INTO DEPARTMENT VALUES('00055', 'Customer Service',
      'Responsible for attending to the customers needs');

xx.   INSERT INTO DEPARTMENT VALUES('00055', 'Marketing
      Department', 'Responsible for promoting the business and
      attracting new customers');

xxi. INSERT INTO DEPARTMENT VALUES('00055', 'Partner Relations',
      'Responsible for maintaining and developing the relations
      with the partners of the company');

xxii. INSERT INTO DEPARTMENT VALUES('00066', 'Human Resources',
      'Responsible for recruiting, hiring, training, firing and
      overall managing the employees');

xxiii. INSERT INTO DEPARTMENT VALUES('00066', 'Customer Service',
      'Responsible for attending to the customers needs');

xxiv. INSERT INTO DEPARTMENT VALUES('00066', 'Partner Relations',
      'Responsible for maintaining and developing the relations
      with the partners of the company');

xxv. INSERT INTO DEPARTMENT VALUES('00077', 'Human Resources',
      'Responsible for recruiting, hiring, training, firing and
      overall managing the employees');

xxvi. INSERT INTO DEPARTMENT VALUES('00077', 'Customer Service',
      'Responsible for attending to the customers needs');

xxvii. INSERT INTO DEPARTMENT VALUES('00077', 'Partner Relations',
      'Responsible for maintaining and developing the relations
      with the partners of the company');

xxviii. INSERT INTO DEPARTMENT VALUES('00044', 'Human Resources',
      'Responsible for recruiting, hiring, training, firing and
      overall managing the employees');

xxix. INSERT INTO DEPARTMENT VALUES('00044', 'Customer Service',
      'Responsible for attending to the customers needs');

xxx. INSERT INTO DEPARTMENT VALUES('00099', 'Customer Service',
      'Responsible for promoting the business and attracting new
      customers');

xxxi. INSERT INTO DEPARTMENT VALUES('00099', 'Partner Relations',
      'Responsible for maintaining and developing the relations
      with the partners of the company');

xxxii. INSERT INTO DEPARTMENT VALUES('00022', 'Human Resources',
      'Responsible for recruiting, hiring, training, firing and
      overall managing the employees');

xxxiii. INSERT INTO DEPARTMENT VALUES('00022', 'Customer Service',
      'Responsible for attending to the customers needs');

10. EMERGENCY_CONTACT1:

```
  i. INSERT INTO EMERGENCY_CONTACT1 VALUES('Kate', 'Megan',
     'McCallister', '61728901, 'Wife', '127362306');
 ii. INSERT INTO EMERGENCY_CONTACT1 VALUES('Rubeus', 'Albus',
     'Hagrid', '90184110', 'Guardian', '781457987');
iii. INSERT INTO EMERGENCY_CONTACT1 VALUES('Amy', 'Waters',
     'Davidson', '71912981', 'Mother', '984230491');
 iv. INSERT INTO EMERGENCY_CONTACT1 VALUES('Harry', 'Sam',
     'Holland', '71912982', 'Brother', '721230456');
  v. INSERT INTO EMERGENCY_CONTACT1 VALUES('Blake', 'Lively',
     'Reynolds', '71912983', 'Brother', '644578149');
 vi. INSERT INTO EMERGENCY_CONTACT1 VALUES('Jane', 'Alexia',
     'Taylor', '71912984', 'Wife', '432779156');
vii. INSERT INTO EMERGENCY_CONTACT1 VALUES('Alexandra',
     'Beatrice', 'Taylor', '71912985', 'Wife', '432779157');
viii. INSERT INTO EMERGENCY_CONTACT1 VALUES('Mikhail', 'Artyom',
     'Lavrov', '71912986', 'Father', '601928374');
 ix. INSERT INTO EMERGENCY_CONTACT1 VALUES('Igor', 'Konstantin',
     'Pavlov', '71912987', 'Father', '601928375');
  x. INSERT INTO EMERGENCY_CONTACT1 VALUES('Marco', 'Gerard',
     'Rossi', '78192019', 'Husband', '700192018');
 xi. INSERT INTO EMERGENCY_CONTACT1 VALUES('Aanya', 'Jiya',
     'Patil', '78192901', 'Mother', '149823934');
xii. INSERT INTO EMERGENCY_CONTACT1 VALUES('Raya', 'Zeina'
     ,'Ammar','56029274', ' Mother', '556891162');
```

11. EMERGENCY_CONTACT2:

```
  i. INSERT INTO EMERGENCY_CONTACT2 VALUES('Ava', 'Kayla',
     'Maddison', '71817136', 'Wife', '889928456');
 ii. INSERT INTO EMERGENCY_CONTACT2 VALUES('Tobi', 'Greg',
     'Smith', '71817129', ' Brother', '61229982');
iii. INSERT INTO EMERGENCY_CONTACT2 VALUES('Emma', 'Maddie',
     'Williams', '91025567', ' Wife', '439088731');
 iv. INSERT INTO EMERGENCY_CONTACT2 VALUES('Joshua', 'Tucker',
     'Allen', '61720918', ' Husband', '420885610');
  v. INSERT INTO EMERGENCY_CONTACT2 VALUES('Mary', 'Miley',
     'Coleman', '61720919', 'Sister', '439088732');
 vi. INSERT INTO EMERGENCY_CONTACT2 VALUES('Jack', 'Marc',
     'Robert', '61720920', ' Husband', '910284334');
vii. INSERT INTO EMERGENCY_CONTACT2 VALUES('Kiyoko', 'Emiko',
     'Kiyama', '71920912', ' Brother', '819026609');
viii. INSERT INTO EMERGENCY_CONTACT2 VALUES('Hari', 'Kin',
     'Sakai', '71920913', ' Mother', '819026608');
 ix. INSERT INTO EMERGENCY_CONTACT2 VALUES('Bako', 'Akin',
     'Egbe', '80920914', ' Father', '611209182');
  x. INSERT INTO EMERGENCY_CONTACT2 VALUES('Adewale', 'Dayo',
     'Okoye', '80920915', ' Brother', '611209181');
```

<div style="margin-left:2em">

xi. `INSERT INTO EMERGENCY_CONTACT2 VALUES('Alina', 'Irina', 'Smirnov', '80920914', ' Sister', '611209182');`

xii. `INSERT INTO EMERGENCY_CONTACT2 VALUES('Viktor', 'Andrei', 'Orlov', '80920915', ' Brother', '611209181');`

xiii. `INSERT INTO EMERGENCY_CONTACT2 VALUES('Giovanni', 'Lorenzo', 'Bruno', '80920916', ' Brother', '301928371');`

xiv. `INSERT INTO EMERGENCY_CONTACT2 VALUES('Lia', 'Capri', 'Greco', '80920917', ' Wife', '301928372');`

xv. `INSERT INTO EMERGENCY_CONTACT2 VALUES('Diya', 'Prisha', 'Sharma', '80920918', ' Wife', '491022860');`

xvi. `INSERT INTO EMERGENCY_CONTACT2 VALUES('Riya', 'Myra', 'Singh', '80920919', ' Wife', '491022861');`

xvii. `INSERT INTO EMERGENCY_CONTACT2 VALUES('Khalil', 'Samir', 'Saad', '51029888', ' Husband', '801927541');`

xviii. `INSERT INTO EMERGENCY_CONTACT2 VALUES('Samer', 'Karim', 'Mrad', '51029889', ' Husband', '801927542');`

</div>

12. BRANCH:

<div style="margin-left:2em">

i. `INSERT INTO BRANCH VALUES('00001', '00064', 'Chicago', 'Illinois', 'United States', 'Earth');`

ii. `INSERT INTO BRANCH VALUES('00016', '76809', 'London', NULL, 'United Kingdom', 'Earth');`

iii. `INSERT INTO BRANCH VALUES('00030', '71928', 'Fort Worth', 'Texas', 'United States', 'Earth');`

iv. `INSERT INTO BRANCH VALUES('00088', '00251', 'Osaka', NULL, 'Japan', 'Earth');`

v. `INSERT INTO BRANCH VALUES('00055', '00809', 'Lagos', NULL, 'Nigeria', 'Earth');`

vi. `INSERT INTO BRANCH VALUES('00066', '61928', 'Moscow', NULL, 'Russia', 'Earth');`

vii. `INSERT INTO BRANCH VALUES('00077', '11029', 'Astana', NULL, 'Kazakhstan', 'Earth');`

viii. `INSERT INTO BRANCH VALUES('00044', '65901', 'Milan', NULL, 'Italy', 'Earth');`

ix. `INSERT INTO BRANCH VALUES('00099', '28102', 'New Delhi', NULL, 'India', 'Earth');`

x. `INSERT INTO BRANCH VALUES('00022', '91029', ‘Beirut’, NULL, 'Lebanon', 'Earth');`

</div>

13. PARTNER:

<div style="margin-left:2em">

i. `INSERT INTO PARTNER VALUES('376180927', 'American Airlines', 'Fort Worth', 'Texas', 'United States', 'Earth', 'Flights', '56198');`

ii. `INSERT INTO PARTNER VALUES('541180927', 'Hogwarts Express', 'London', NULL, 'England', 'Earth', 'Trains', '37116');`

iii. `INSERT INTO PARTNER VALUES('810091665', 'SpaceX', 'Fort Worth', 'Texas', 'United States', 'Earth', 'Spaceships', '37133');`

iv. `INSERT INTO PARTNER VALUES('810091661', 'Japan Railways', 'Osaka', NULL, 'Japan', 'Earth', 'Trains', '57109');`

</div>

     v. `INSERT INTO PARTNER VALUES('810091662', 'Japan Airline', 'Osaka', NULL, 'Japan', 'Earth', 'Airplanes', '16273');`

    vi. `INSERT INTO PARTNER VALUES('779018291', 'Russia Airline', 'Moscow', NULL, 'Russia', 'Earth', 'Airplanes', '23789');`

  vii. `INSERT INTO PARTNER VALUES('779018292', 'Russia Railways', 'Kazan', NULL, 'Russia', 'Earth', 'Trains', '30192');`

viii. `INSERT INTO PARTNER VALUES('779018293', 'Russia Busses', 'St. Petersburg', NULL, 'Russia', 'Earth', 'Trains', '30192');`

   ix. `INSERT INTO PARTNER VALUES('690192010', 'Aeroitalia', 'Rome', NULL, 'Italy', 'Earth', 'Planes', '91029');`

    x. `INSERT INTO PARTNER VALUES('187102918', 'Middle East Airline', 'Beirut', NULL, 'Lebanon', 'Earth', 'Planes', '55020');`

   xi. `INSERT INTO PARTNER VALUES('920267029', 'French Airlines', 'Paris', NULL, 'France', 'Earth', 'Planes', '00020');`

14. CUSTOMER_PURCHASE_HISTORY:

    i. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('1457855', '127362306');`

   ii. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('1588511', '781457987');`

  iii. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('8192002', '984230491');`

   iv. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('8192003', '721230456');`

    v. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('8192004', '644578149');`

   vi. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('6651001', '432779156');`

  vii. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('6651002', '432779157');`

viii. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('6651003', '432779156');`

   ix. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('6651004', '432779157');`

    x. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('7001920', '700192018');`

   xi. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('6701921', '556891162');`

  xii. `INSERT INTO CUSTOMER_PURCHASE_HISTORY VALUES('6701922', '556891162');`

15. PARTNER_OPERATING_COUNTRIES:

    i. `INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('United States', '376180927');`

   ii. `INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('England', '5411809272');`

  iii. `INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('Scotland', '5411809272');`

   iv. `INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('Wales', '5411809272');`

    v. `INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('Northern Ireland', '5411809272');`

```
  vi. INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('United
      States', '810091665');
 vii. INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('Japan',
      '810091661');
viii. INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('Japan',
      '810091661');

  ix. INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('Russia',
      '779018291');
   x. INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('Russia',
      '779018292');
  xi. INSERT INTO PARTNER_OPERATING_COUNTRIES
      VALUES('Russia','779018293');

 xii. INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('Italy',
      '690192010');

xiii. INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('Lebanon',
      '187102918');

 xiv. INSERT INTO PARTNER_OPERATING_COUNTRIES VALUES('France',
      '920267029');
```

16. RECOMMENDS:

```
   i. INSERT INTO RECOMMENDS VALUES('889928456', '127362306',
      '754125479');
  ii. INSERT INTO RECOMMENDS VALUES('439088731', '781457987',
      '125227690');
 iii. INSERT INTO RECOMMENDS VALUES('439088732', '984230491',
      '620390011');
  iv. INSERT INTO RECOMMENDS VALUES('439088732', '721230456',
      '620390011');
   v. INSERT INTO RECOMMENDS VALUES('439088732', '644578149',
      '620390011');
  vi. INSERT INTO RECOMMENDS VALUES('301928371', '700192018',
      '720901923');
 vii. INSERT INTO RECOMMENDS VALUES('301928371', '700192018',
      '720901925');
viii. INSERT INTO RECOMMENDS VALUES('301928371', '700192018',
      '720901926');
  ix. INSERT INTO RECOMMENDS VALUES('301928371', '700192018',
      '720901927');

   x. INSERT INTO RECOMMENDS VALUES('801927541', '556891162',
      '430293817');
```

17. MANAGES:

```
   i. INSERT INTO MANAGES VALUES('889928456', '127362306');
  ii. INSERT INTO MANAGES VALUES('439088731', '781457987');
 iii. INSERT INTO MANAGES VALUES('439088732', '984230491');
  iv. INSERT INTO MANAGES VALUES('439088732', '721230456');
   v. INSERT INTO MANAGES VALUES('439088732', '644578149');
  vi. INSERT INTO MANAGES VALUES('819026609', '432779156');
 vii. INSERT INTO MANAGES VALUES('819026609', '432779157');
```

```
viii.  INSERT INTO MANAGES VALUES('344309012', '601928374');
  ix.  INSERT INTO MANAGES VALUES('344309012', '601928375');
   x.  INSERT INTO MANAGES VALUES('301928371', '700192018');
  xi.  INSERT INTO MANAGES VALUES('491022860', '149823934');
 xii.  INSERT INTO MANAGES VALUES('801927541', '556891162');
```

XIV. FINAL TABLES STATE:

1. CUSTOMER

Entry_Number	PASSPORT_ID	FIRST_NAME	MIDDLE_NAME	LAST_NAME	CHAT_ID	DATE_OF_BIRTH
1	127362306	Peter	Austin	McCallister	85764399	3/7/1978
2	644578149	Ryan	Rodney	Reynolds	23781639	10/23/1976
3	721230456	Thomas	Stanley	Holland	29145713	6/1/1996
4	781457987	Harry	James	Potter	14787614	7/31/1980
5	984230491	Pete	Michael	Davidson	72838172	11/16/1993
6	601928374	Anton	Oleg	Lavrov	81928267	4/23/1991
7	601928375	Ilya	Aleksandr	Pavlov	81928268	5/18/1992
8	432779156	Michael	Lee	Taylor	81928265	4/4/1960
9	556891162	Ibrahim	Rabih	Ammar	37810825	4/19/1995
10	700192018	Andrea	Sofia	Rossi	81920918	9/21/2001
11	432779157	Peter	Matthew	Taylor	81928266	5/23/1992
12	149823934	Kumar	Aarav	Patil	13457309	2/25/1998

Entry_Number	PASSPORT_ID	STREET_NUMBER	CITY	STATE	COUNTRY	PLANET	GENDER	POINTS_BALANCE	HOTEL_ID	BRNCH_NB
1	127362306	60093	Chicago	Illinois	United States	Earth	M	4	754125479	1
2	644578149	58172	Vancouver		Canada	Earth	M	8	620390011	30
3	721230456	62549	Kingston		England	Earth	M	10	620390011	30
4	781457987	20741	London		England	Earth	M	2	125227690	16
5	984230491	62549	Staten Island	New York	United States	Earth	M	12	620390011	30
6	601928374	79144	Boston		Moscow	Earth	M	13		66
7	601928375	79144	Moscow		Moscow	Earth	M	7		66
8	432779156	79144	Boston	Massachusetts	United States	Earth	M	14		88
9	556891162	67138	Beirut		Lebanon	Earth	M	41	430293817	22
10	700192018	84521	Milan		Italy	Earth	F	20	720901923	44
11	432779157	79144	Boston	Massachusetts	United States	Earth	M	14		88
12	149823934	15612	New Delhi		India	Earth	M	100		99

2. <u>EMPLOYEE</u>

Entry_Number	EMPLOYEE_SSN	FIRST_NAME	MIDDLE_NAME	LAST_NAME	CHAT_ID	DATE_OF_BIRTH
1	61229982	John	Michael	Smith	71817123	4/25/1986
2	889928456	James	Harold	Maddison	71817135	7/15/1989
3	420885610	Faith	Lena	Allen	71817578	1/12/1985
4	439088731	Simon	Ethan	Williams	71817119	8/11/1988
5	910284334	Grace	Amelia	Robert	81093581	8/19/1980
6	439088732	Elizabeth	Olivia	Coleman	63391035	5/13/1985
7	819026608	Izumi	Sora	Sakai	81093583	3/19/1976
8	819026609	Akira	Hiroshi	Kiyama	81093582	1/2/1979
9	611209181	Chinara	Abebi	Okoye	65128090	10/29/1970
10	611209182	Blessing	Abigail	Egbe	65128090	2/19/1974
11	344309012	Natasha	Anastasia	Smirnov	65128091	11/26/1997
12	344309013	Ivan	Dimitri	Orlov	65128092	12/3/1995
13	301928372	Alice	Chiara	Greco	99817133	8/5/1990
14	301928371	Eduardo	Antonio	Bruno	99817134	8/5/1990
15	491022861	Kiaan	Advik	Singh	99817135	8/6/1988
16	491022860	Viraj	Rohan	Sharma	99817134	3/11/1991
17	801927542	Sarah	Hala	Mrad	99817137	8/18/1981
18	801927541	Ghada	Maria	Saad	99817136	3/6/1986

Entry_Number	EMPLOYEE_SSN	STREET_NUMBER	CITY	STATE	COUNTRY	PLANET	GENDER	SALARY	POSITION	SUPERVISOR_SSN	BRANCH_NUM
1	61229982	61721	Chicago	Illinois	United States	Earth	M	7.02	Manager		1
2	889928456	61728	Chicago	Illinois	United States	Earth	M	6.02	Travel Agent	61229982	1
3	420885610	43131	London		England	Earth	F	7.02	Manager		16
4	439088731	43128	London		England	Earth	M	6.02	Travel Agent	420885610	16
5	910284334	91029	Fort Worth	Texas	United States	Earth	F	7.02	Manager		30
6	439088732	91023	Fort Worth	Texas	United States	Earth	F	6.02	Travel Agent	910284334	30
7	819026608	45665	Osaka		Japan	Earth	F	7.02	Manager		88
8	819026609	17284	Osaka		Japan	Earth	M	6.02	Travel Agent	819026608	88
9	611209181	61092	Lagos		Nigeria	Earth	F	9.02	Research Manager		55
10	611209182	56710	Lagos		Nigeria	Earth	F	8.02	Researcher	611209181	55
11	344309012	33801	Moscow		Russia	Earth	F	5.02	Travel Agent Manager		66
12	344309013	61092	Moscow		Russia	Earth	M	7.02	HR Manager		66
13	301928372	56527	Milan		Italy	Earth	F	7.02	Travel Agent Manager		44
14	301928371	56527	Milan		Italy	Earth	M	6.02	Travel Agent	301928372	44
15	491022861	56529	New Delhi		India	Earth	M	7.02	Travel Agent Manager		99
16	491022860	56528	New Delhi		India	Earth	M	6.02	Travel Agent	301928372	99
17	801927542	56457	Beirut		Lebanon	Earth	F	7.02	Travel Agent Manager		22
18	801927541	56320	Beirut		Lebanon	Earth	F	6.02	Travel Agent	801927542	22

3. **TICKET**

ENTRY_NUMBER	TICKET_NUMBER	MODE_OF_TRANSPORTATION	TRANSPORT_COMPANY	BAGGAGE_WEIGHT	SEAT_NUMBER
1	1457855	Plane	American Airlines	64	58
2	6701932	Plane	French Airlines	60	52
3	6701933	Plane	French Airlines	60	52
4	6701934	Plane	French Airline	60	52
5	6701935	Plane	French Airline	60	52
6	6701941	Plane	American Airlines	60	52
7	6701942	Plane	American Airlines	60	52
8	6701943	Plane	American Airlines	60	52
9	6701944	Plane	American Airlines	60	52
10	6701931	Plane	French Airlines	60	52
11	1588513	Train	Hogwarts Express	40	45
12	1588511	Train	Hogwarts Express	40	45
13	1588512	Train	Hogwarts Express	40	45
14	1588514	Train	Hogwarts Express	40	45
15	1588515	Train	Hogwarts Express	40	45
16	1588516	Train	Hogwarts Express	40	45
17	1288511	Train	Hogwarts Express	40	45
18	1288512	Train	Hogwarts Express	40	45
19	1288513	Train	Hogwarts Express	40	45
20	1288514	Train	Hogwarts Express	40	45
21	1288515	Train	Hogwarts Express	40	45
22	1288516	Train	Hogwarts Express	40	45
23	1288517	Train	Hogwarts Express	40	45
24	8192002	Spaceship	SpaceX	60	67
25	8192003	Spaceship	SpaceX	60	67
26	8192004	Spaceship	SpaceX	60	67
27	6701921	Plane	Middle East Airline	60	79
28	6701922	Plane	Middle East Airline	60	79
29	6701923	Plane	Middle East Airline	60	79
30	6701924	Plane	Middle East Airline	60	79
31	6701925	Plane	Middle East Airline	60	79
32	6701945	Plane	American Airlines	60	52
33	6651001	Train	Japan Railways	65	71
34	6651004	Plane	Japan Airlines	65	71
35	6651002	Train	Japan Railways	65	71
36	6651003	Plane	Japan Airlines	65	71
37	7001920	Plane	Aeroitalia	60	78

ENTRY_NUMBER	TICKET_NUMBER	DESTINATION_CITY	DESTINATION_STATE	DESTINATION_COUNTRY	DESTINATION_PLANET	DESTINATION_TIME	PRICE	TICKET_TYPE
1	1457855	New York	New York	United States	Earth	24-DEC-21 10.05.00.000000	0.07	Round-Trip
2	6701932	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
3	6701933	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
4	6701934	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
5	6701935	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
6	6701941	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
7	6701942	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
8	6701943	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
9	6701944	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
10	6701931	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
11	1588513	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
12	1588511	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
13	1588512	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
14	1588514	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
15	1588515	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
16	1588516	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
17	1288511	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
18	1288512	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
19	1288513	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
20	1288514	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
21	1288515	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
22	1288516	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
23	1288517	Hogwarts		Scotland	Earth	04-OCT-21 12.30.00.000000	0.01	One-Way
24	8192002	Nuwa		Tempe Mensa	Mars	05-FEB-22 09.30.00.000000	0.1	Round-Trip
25	8192003	Nuwa		Tempe Mensa	Mars	05-FEB-22 09.30.00.000000	0.1	Round-Trip
26	8192004	Nuwa		Tempe Mensa	Mars	05-FEB-22 09.30.00.000000	0.1	Round-Trip
27	6701921	Paris		France	Earth	22-JUL-22 01.35.00.000000	0.1	One-Way
28	6701922	Paris		France	Earth	22-JUL-22 01.35.00.000000	0.1	One-Way
29	6701923	Paris		France	Earth	22-JUL-22 01.35.00.000000	0.1	One-Way
30	6701924	Paris		France	Earth	22-JUL-22 01.35.00.000000	0.1	One-Way
31	6701925	Paris		France	Earth	22-JUL-22 01.35.00.000000	0.1	One-Way
32	6701945	Detroit	Michigan	United States	Earth	23-JUL-22 03.25.00.000000	0.1	One-Way
33	6651001	Tokyo		Japan	Earth	05-FEB-22 09.30.00.000000	0.1	One-Way
34	6651004	Beirut		Lebanon	Earth	05-FEB-22 08.30.00.000000	0.1	One-Way
35	6651002	Tokyo		Japan	Earth	05-FEB-22 09.30.00.000000	0.1	One-Way
36	6651003	Beirut		Lebanon	Earth	05-FEB-22 08.30.00.000000	0.1	One-Way
37	7001920	Copenhagen		Denmark	Earth	11-MAY-22 03.25.00.000000	0.1	One-Way

ENTRY_NUMBER	TICKET_NUMBER	IS_BOOKED	DEPARTURE_CITY	DEPARTURE_STATE	DEPARTURE_COUNTRY	DEPARTURE_PLANET	DEPARTURE_TIME
1	1457855	1	Chicago	Illinois	United States	Earth	24-DEC-21 08.05.00.000000
2	6701932	1	Paris		France	Earth	22-JUL-22 01.25.00.000000
3	6701933	1	Paris		France	Earth	22-JUL-22 01.25.00.000000
4	6701934	1	Paris		France	Earth	22-JUL-22 01.25.00.000000
5	6701935	1	Paris		France	Earth	22-JUL-22 01.25.00.000000
6	6701941	0	Paris		France	Earth	22-JUL-22 01.25.00.000000
7	6701942	0	Paris		France	Earth	22-JUL-22 01.25.00.000000
8	6701943	0	Paris		France	Earth	22-JUL-22 01.25.00.000000
9	6701944	0	Paris		France	Earth	22-JUL-22 01.25.00.000000
10	6701931	1	Paris		France	Earth	22-JUL-22 01.25.00.000000
11	1588513	1	London		England	Earth	04-OCT-21 11.30.00.000000
12	1588511	1	London		England	Earth	04-OCT-21 11.30.00.000000
13	1588512	1	London		England	Earth	04-OCT-21 11.30.00.000000
14	1588514	1	London		England	Earth	04-OCT-21 11.30.00.000000
15	1588515	1	London		England	Earth	04-OCT-21 11.30.00.000000
16	1588516	1	London		England	Earth	04-OCT-21 11.30.00.000000
17	1288511	1	London		England	Earth	04-OCT-21 11.30.00.000000
18	1288512	1	London		England	Earth	04-OCT-21 11.30.00.000000
19	1288513	1	London		England	Earth	04-OCT-21 11.30.00.000000
20	1288514	1	London		England	Earth	04-OCT-21 11.30.00.000000
21	1288515	1	London		England	Earth	04-OCT-21 11.30.00.000000
22	1288516	1	London		England	Earth	04-OCT-21 11.30.00.000000
23	1288517	1	London		England	Earth	04-OCT-21 11.30.00.000000
24	8192002	1	Fort Worth	Texas	United States	Earth	04-OCT-22 01.30.00.000000
25	8192003	1	Fort Worth	Texas	United States	Earth	04-OCT-22 01.30.00.000000
26	8192004	1	Fort Worth	Texas	United States	Earth	04-OCT-22 01.30.00.000000
27	6701921	1	Beirut		Lebanon	Earth	22-JUL-22 09.30.00.000000
28	6701922	1	Beirut		Lebanon	Earth	22-JUL-22 09.30.00.000000
29	6701923	1	Beirut		Lebanon	Earth	22-JUL-22 09.30.00.000000
30	6701924	1	Beirut		Lebanon	Earth	22-JUL-22 09.30.00.000000
31	6701925	1	Beirut		Lebanon	Earth	22-JUL-22 09.30.00.000000
32	6701945	0	Paris		France	Earth	22-JUL-22 01.25.00.000000
33	6651001	1	Osaka		Japan	Earth	05-FEB-22 07.30.00.000000
34	6651004	1	Osaka		Japan	Earth	05-FEB-22 12.30.00.000000
35	6651002	1	Osaka		Japan	Earth	05-FEB-22 07.30.00.000000
36	6651003	1	Osaka		Japan	Earth	05-FEB-22 12.30.00.000000
37	7001920	1	Milan		Italy	Earth	11-MAY-22 01.25.00.000000

ENTRY_NUMBER	TICKET_NUMBER	CONNECTION_NUMBER	PSPRT_ID	PRTNR_ID	BOOKING_DATE
1	1457855		127362306	376180927	11/24/2021
2	6701932	6701922	556891162	920267029	4/1/2022
3	6701933	6701923	556891162	920267029	4/1/2022
4	6701934	6701924	556891162	920267029	4/1/2022
5	6701935	6701925	556891162	920267029	4/1/2022
6	6701941	6701921		376180927	4/1/2022
7	6701942	6701922		376180927	4/1/2022
8	6701943	6701923		376180927	4/1/2022
9	6701944	6701924		376180927	4/1/2022
10	6701931	6701921	556891162	920267029	4/1/2022
11	1588513		781457987	541180927	9/4/2021
12	1588511		781457987	541180927	9/4/2021
13	1588512		781457987	541180927	9/4/2021
14	1588514		781457987	541180927	9/4/2021
15	1588515		781457987	541180927	9/4/2021
16	1588516		781457987	541180927	9/4/2021
17	1288511			541180927	9/4/2021
18	1288512			541180927	9/4/2021
19	1288513			541180927	9/4/2021
20	1288514			541180927	9/4/2021
21	1288515			541180927	9/4/2021
22	1288516			541180927	9/4/2021
23	1288517			541180927	9/4/2021
24	8192002		984230491	810091665	7/2/2021
25	8192003		721230456	810091665	7/2/2021
26	8192004		644578149	810091665	7/2/2021
27	6701921		556891162	187102918	4/1/2022
28	6701922		556891162	187102918	4/1/2022
29	6701923		556891162	187102918	4/1/2022
30	6701924		556891162	187102918	4/1/2022
31	6701925		556891162	187102918	4/1/2022
32	6701945	6701925		376180927	4/1/2022
33	6651001		432779156	810091661	2/5/2022
34	6651004	6651002	432779157	810091662	1/3/2021
35	6651002		432779157	810091661	2/5/2022
36	6651003	6651001	432779156	810091662	1/3/2021
37	7001920		700192018	690192010	4/3/2022

4. <u>HOTEL</u>

Entry_Number	HOTEL_ID	HOTEL_NAME	STREET_NUMBER	CITY	STATE	COUNTRY	PLANET	STAR_RATING	NUMBER_OF_MEALS	PRICE	IS_PARTNER
1	754125479	Liberty Motel	43629	New York	New York	United States	Earth	3	2	0.01	Y
2	620390011	King Galaxy Hotel	389	Nuwa		Tempe Mensa	Mars	3	3	0.05	N
3	720901923	Four Seasons Hotel	9135	Copenhagen		Denmark	Earth	4	3	0.05	N
4	720901924	Marriott Hotel	9135	Copenhagen		Denmark	Earth	4	3	0.05	N
5	720901925	Copenhagen Hotel	9132	Copenhagen		Denmark	Earth	2	2	0.02	N
6	720901926	Northern Light Hotel	9131	Copenhagen		Denmark	Earth	2	2	0.02	N
7	720901927	European Hotel	9137	Copenhagen		Denmark	Earth	4	2	0.05	N
8	720901928	Galaxy Hotel	9138	Copenhagen		Denmark	Earth	3	3	0.03	N
9	430293817	Hilton Garden Inn	9135	Detroit		Michigan	Earth	3	3	0.05	N
10	125227690	Hogwarts School	30901	Hogwarts		Scotland	Earth	5	3	0.02	Y

5. <u>ROOM</u>

Entry_Number	H_ID	ROOM_NUMBER	CAPACITY	ROOM_TYPE
1	754125479	122	2	Double Bed
2	125227690	871	3	Triple Bed
3	620390011	289	4	Suite
4	720901923	289	1	King-Sized Bed
5	720901924	288	1	King-Sized Bed
6	720901924	311	1	Single Bed
7	720901924	312	1	Double Bed
8	720901924	313	1	Queen-Sized Bed
9	720901924	314	1	King-Sized Bed
10	430293817	401	5	Suite

6. __CONTRACT__

Entry_Number	CONTRACT_ID	IS_REFUNDABLE	IS_SIGNED	EXPIRY_DATE	TRAVEL_REASON	ESSN	PSPRT_ID
1	98765	Y	Y	1/10/2022	Vacation	889928456	127362306
2	6170933	Y	Y	8/5/2023	Music Festival	819026609	432779156
3	6170934	Y	Y	8/5/2023	Music Festival	819026609	432779157
4	6170967	Y	Y	1/10/2022	School	439088731	781457987
5	6170922	Y	Y	8/9/2022	Exploration	439088731	984230491
6	6170923	Y	Y	8/9/2022	Exploration	439088732	721230456
7	6170924	Y	Y	8/9/2022	Exploration	439088732	644578149
8	6170959	Y	Y	8/9/2022	Business	301928371	700192018
9	6102918	N	N	8/21/2023	Business	301928371	700192018
10	3278001	Y	Y	8/22/2022	Immigration	801927541	556891162

7. __COMPANION__

Entry_Number	FIRST_NAME	MIDDLE_NAME	LAST_NAME	P_ID	CHAT_ID	DATE_OF_BIRTH	GENDER	RELATIONSHIP
1	Kevin	Josh	McCallister	127362306	13219784	8/17/2013	M	Son
2	Ron	Bilius	Weasley	781457987	81029767	3/1/1980	M	Friend
3	Hermione	Jean	Granger	781457987	81029768	9/19/1979	F	Friend
4	Ginny	Molly	Weasley	781457987	81029769	9/25/1982	F	Friend
5	Draco	Lucius	Malfoy	781457987	81029770	3/12/1979	M	Enemy
6	Severus	Alan	Snape	781457987	81029771	4/17/1955	M	Professor
7	Rima	Sana	Ammar	556891162	71820901	6/12/1998	F	Wife
8	Rana	Samira	Ammar	556891162	71820902	7/12/2018	F	Daughter
9	Rami	Hadi	Ammar	556891162	71820903	6/12/2019	M	Son
10	Rayan	Amir	Ammar	556891162	71820904	6/22/2020	M	Son

8. BILL

Entry_Number	TRANSACTION_ID	PAYMENT_DATE	METHOD_OF_PAYMENT	PSPRT_ID
1	127918ABCDEF	12/1/2021	Crypto Wallet	127362306
2	18173FEDCBA	9/4/2021	Crypto Wallet	781457987
3	23456ABCDEF	7/2/2021	Crypto Wallet	984230491
4	23457ABCDEF	7/2/2021	Crypto Wallet	721230456
5	23458ABCDEF	7/2/2021	Crypto Wallet	644578149
6	91029ABCDEF	8/9/2022	Crypto Wallet	700192018
7	91030ABCDEF	8/21/2023	Crypto Wallet	700192018
8	46710ABCDEF	4/1/2022	Crypto Wallet	556891162
9	56390ABCDEF	2/5/2022	Crypto Wallet	432779156
10	56391ABCDEF	2/5/2022	Crypto Wallet	432779157

9. DEPARTMENT

Entry Number	BRANCH_NB	DEPARTMENT_NAME	DESCRIPTION
1	1	Research and Development	Responsible for developing the workspace and preventing company risks
2	1	Human Resources	Responsible for recruiting, hiring, training, firing and overall managing the employees
3	1	Customer Service	Responsible for attending to the customer needs
4	1	Marketing Department	Responsible for promoting the business and attracting new customers
5	30	Research and Development	Responsible for developing the workspace and preventing company risks
6	30	Human Resources	Responsible for recruiting, hiring, training, firing and overall managing the employees
7	1	Partner Relations	Responsible for maintaining and developing the relations with the partners of the company
8	16	Research and Development	Responsible for developing the workspace and preventing company risks
9	16	Human Resources	Responsible for recruiting, hiring, training, firing and overall managing the employees
10	16	Customer Service	Responsible for attending to the customer needs
11	16	Partner Relations	Responsible for maintaining and developing the relations with the partners of the company
12	30	Customer Service	Responsible for attending to the customers needs
13	30	Marketing Department	Responsible for promoting the business and attracting new customers
14	30	Partner Relations	Responsible for maintaining and developing the relations with the partners of the company
15	88	Human Resources	Responsible for recruiting, hiring, training, firing and overall managing the employees
16	88	Customer Service	Responsible for attending to the customers needs
17	55	Research and Development	Responsible for developing the workspace and preventing company risks
18	55	Human Resources	Responsible for recruiting, hiring, training, firing and overall managing the employees
19	55	Customer Service	Responsible for attending to the customers needs
20	55	Marketing Department	Responsible for promoting the business and attracting new customers
21	55	Partner Relations	Responsible for maintaining and developing the relations with the partners of the company
22	66	Human Resources	Responsible for recruiting, hiring, training, firing and overall managing the employees
23	66	Customer Service	Responsible for attending to the customers needs
24	66	Partner Relations	Responsible for maintaining and developing the relations with the partners of the company
25	77	Human Resources	Responsible for recruiting, hiring, training, firing and overall managing the employees
26	77	Customer Service	Responsible for attending to the customers needs
27	77	Partner Relations	Responsible for maintaining and developing the relations with the partners of the company
28	44	Human Resources	Responsible for recruiting, hiring, training, firing and overall managing the employees
29	44	Customer Service	Responsible for attending to the customers needs
30	99	Customer Service	Responsible for promoting the business and attracting new customers
31	99	Partner Relations	Responsible for maintaining and developing the relations with the partners of the company
32	22	Human Resources	Responsible for recruiting, hiring, training, firing and overall managing the employees
33	22	Customer Service	Responsible for attending to the customers needs

10. <u>EMERGENCY_CONTACT1</u>

Entry_Number	FIRST_NAME	MIDDLE_NAME	LAST_NAME	CHAT_ID	RELATIOSHIP	P_ID
1	Kate	M	McCallister	61728901	Wife	127362306
2	Rubeus	Albus	Hagrid	90184110	Guardian	781457987
3	Amy	Waters	Davidson	71912981	Mother	984230491
4	Harry	Sam	Holland	71912982	Brother	721230456
5	Blake	Lively	Reynolds	71912983	Brother	644578149
6	Mikhail	Artyom	Lavrov	71912986	Father	601928374
7	Igor	Konstantin	Pavlov	71912987	Father	601928375
8	Marco	Gerard	Rossi	78192019	Husband	700192018
9	Raya	Zeina	Ammar	56029274	Mother	556891162
10	Aanya	Jiya	Patil	78192901	Mother	149823934
11	Jane	Alexia	Taylor	71912984	Wife	432779156
12	Alexandra	Beatrice	Taylor	71912985	Wife	432779157

11. <u>EMERGENCY_CONTACT2</u>

Entry_Number	FIRST_NAME	MIDDLE_NAME	LAST_NAME	CHAT_ID	RELATIOSHIP	ESSN
1	Ava	M	Maddison	71817136	Wife	889928456
2	Tobi	S	Smith	71817129	Brother	61229982
3	Emma	Maddie	Williams	91025567	Wife	439088731
4	Joshua	Tucker	Allen	61720918	Husband	420885610
5	Mary	Miley	Coleman	61720919	Sister	439088732
6	Jack	Marc	Robert	61720920	Husband	910284334
7	Kiyoko	Emiko	Kiyama	71920912	Brother	819026609
8	Hari	Kin	Sakai	71920913	Mother	819026608
9	Bako	Akin	Egbe	80920914	Father	611209182
10	Adewale	Dayo	Okoye	80920915	Brother	611209181
11	Alina	Irina	Smirnov	80920914	Sister	611209182
12	Viktor	Andrei	Orlov	80920915	Brother	611209181
13	Giovanni	Lorenzo	Bruno	80920916	Brother	301928371
14	Lia	Capri	Greco	80920917	Wife	301928372
15	Diya	Prisha	Sharma	80920918	Wife	491022860
16	Riya	Myra	Singh	80920919	Wife	491022861
17	Khalil	Samir	Saad	51029888	Husband	801927541
18	Samer	Karim	Mrad	51029889	Husband	801927542

12. __BRANCH__

Entry_Number	BRANCH_NUMBER	STREET_NUMBER	CITY	STATE	COUNTRY	PLANET
1	1	64	Chicago	Illinois	United States	Earth
2	77	11029	Astana		Kazakhstan	Earth
3	55	809	Lagos		Nigeria	Earth
4	66	61928	Moscow		Russia	Earth
5	44	65901	Milan		Italy	Earth
6	99	28102	New Delhi		India	Earth
7	22	91029	Beirut		Lebanon	Earth
8	16	76809	London		United Kingdom	Earth
9	30	71928	Fort Worth	Texas	United States	Earth
10	88	251	Osaka		Japan	Earth

13. __PARTNER__

Entry_Number	PARTNER_ID	NAME	CITY	STATE	COUNTRY	PLANET	SERVICE	STREET_NUMBER
1	376180927	American Airlines	Fort Worth	Texas	United States	Earth	Flights	56198
2	810091662	Japan Airline	Osaka		Japan	Earth	Airplanes	16273
3	541180927	Hogwarts Express	London		England	Earth	Trains	37116
4	810091665	SpaceX	Fort Worth	Texas	United States	Earth	Spaceships	37133
5	810091661	Japan Railways	Osaka		Japan	Earth	Trains	57109
6	779018291	Russia Airline	Moscow		Russia	Earth	Airplanes	23789
7	779018292	Russia Railways	Kazan		Russia	Earth	Trains	30192
8	920267029	French Airlines	Paris		France	Earth	Planes	20
9	779018293	Russia Busses	St. Petersburg		Russia	Earth	Trains	30192
10	690192010	Aeroitalia	Rome		Italy	Earth	Planes	91029
11	187102918	Middle East Airline	Beirut		Lebanon	Earth	Planes	55020

14. <u>**CUSTOMER_PURCHASE_HISTORY**</u>

Entry _Number	PURCHASE_TICKETS_ID	PSPRT_ID
1	1457855	127362306
2	1588511	781457987
3	6651001	432779156
4	6651002	432779157
5	6651003	432779156
6	6651004	432779157
7	6701921	556891162
8	6701922	556891162
9	7001920	700192018
10	8192002	984230491
11	8192003	721230456
12	8192004	644578149

15. <u>**PARTNER_OPERATING_COUNTRIES**</u>

Entry_Number	COUNTRY	PRTNR_ID
1	England	541180927
2	France	920267029
3	Italy	690192010
4	Japan	810091661
5	Japan	810091662
6	Lebanon	187102918
7	Northern Ireland	541180927
8	Russia	779018291
9	Russia	779018292
10	Russia	779018293
11	Scotland	541180927
12	United States	376180927
13	United States	810091665
14	Wales	541180927

16. <u>RECOMMENDS</u>

Entry_Number	EMPLOYEE_SSN	PSPRT_ID	HTL_ID
1	301928371	700192018	720901923
2	301928371	700192018	720901925
3	301928371	700192018	720901926
4	301928371	700192018	720901927
5	439088731	781457987	125227690
6	439088732	644578149	620390011
7	439088732	721230456	620390011
8	439088732	984230491	620390011
9	801927541	556891162	430293817
10	889928456	127362306	754125479

17. <u>MANAGES</u>

Entry_Number	EMPLOYEE_SSN	PSPRT_ID
1	301928371	700192018
2	344309012	601928374
3	344309012	601928375
4	439088731	781457987
5	439088732	644578149
6	439088732	721230456
7	439088732	984230491
8	491022860	149823934
9	801927541	556891162
10	819026609	432779156
11	819026609	432779157
12	889928456	127362306

XV. <u>Queries:</u>

1. <u>Alone in New York:</u>

On Christmas eve, Kevin McCallister, a lost 10-year-old boy at the airport, bumped into a passenger check-in officer at the virtual Chicago O'Hare International Airport, causing her to lose her balance and scatter the tickets in her hand. As the plane heading to New York City was about to departure, she allowed Kevin to board the plane without searching for and checking his ticket. However, before takeoff and after reorganizing the tickets, she found that there was a distinct ticket for a plane headed to New York City, New York. She contacted the airport security who, in turn, contacted Metatravel agency in hopes of reaching Kevin's father.

First, we need to confirm if Kevin is the customer by checking if the **Passport_ID= 127362306** found on the ticket belongs to him. If yes, we need to inform Kevin that he is on the wrong flight by finding his **Chat_ID.** Otherwise, the **Passport_ID** belongs to a certain customer, whose companion is Kevin. In this case, we need to urgently identify that customer and find their **Chat_ID in** order to contact them.

- **<u>Code</u>**

```
SELECT CUSTOMER.FIRST_NAME, CUSTOMER.MIDDLE_NAME, CUSTOMER.LAST_NAME,
CUSTOMER.Chat_id
FROM CUSTOMER
WHERE CUSTOMER.Passport_id = '784725619'
UNION
SELECT CUSTOMER.FIRST_NAME, CUSTOMER.MIDDLE_NAME, CUSTOMER.LAST_NAME,
CUSTOMER.Chat_id
FROM CUSTOMER, COMPANION
WHERE CUSTOMER.Passport_id=COMPANION.P_id AND
COMPANION.First_Name='Kevin' AND COMPANION.Middle_Name = 'Josh' AND
COMPANION.Last_Name='McCallister';
```

- **Result**

Result_Entry	FIRST_NAME	MIDDLE_NAME	LAST_NAME	CHAT_ID
1	Peter	Austin	McCallister	85764399

2. **Glitch at Hogwarts Express: Mischief Managed**

Harry Potter, along with his companions Ron Weasley, Hermione Granger, Ginny Weasley, Draco Malfoy, and Severus Snape, are headed towards Hogwarts School of Witchcraft and Wizardry to defeat Lord Voldemort. A glitch occurred in their train right before departure. The train was heading from `City = "London", Country= "England", Planet = "Earth"` on `'2021-10-04 11:30:00', 'YYYY-MM-DD HH:MI:SS'` to `City = "Hogwarts," Country= "Scotland", Planet = "Earth"` arriving at `'2021-10-04 11:30:00', 'YYYY-MM-DD HH:MI:SS'`. To avoid further delays, we want to provide our customers with a list of available train tickets that are heading to this location at this time.

- **Code:**

```
SELECT Ticket_number
FROM TICKET
WHERE Departure_City = 'London' AND Departure_Country = 'England' AND
Destination_City = 'Hogwarts' AND Destination_City = 'Hogwarts' AND
Destination_Country = 'Scotland' AND Departure_Time =
To_TIMESTAMP('2021-10-04 11:30:00', 'YYYY-MM-DD HH:MI:SS') AND
Destination_Time = To_TIMESTAMP('2021-10-04 12:30:00', 'YYYY-MM-DD
HH:MI:SS') AND Psprt_id IS NULL;
```

- **Result**

Result_Number	TICKET_NUMBER
1	1288511
2	1288512
3	1288513
4	1288514
5	1288515
6	1288516
7	1288517

3. **Fall of Bitcoin:**

As part of a new project, the Research and Development Department at **Branch number 00055** has employed a machine learning model to predict the fluctuations of Bitcoin prices. Bitcoin price values are projected to decrease by 45% in two months. To avoid bankruptcy, Metatravel has decided to convert the currency it mainly uses from Bitcoin to a more secure currency - Ethereum. Therefore, the salaries of the employees and the prices of its services will change to the cryptocurrency Ethereum.

Formula to convert from BTC to ETH: $x = (x*13.74)$

After of a couple of months, Bitcoin's value did indeed crash. The predictions of Research and Development Department at that specific branch were accurate, so Metatravel has decided to award all the employees working for the branch a 10% raise to their salaries.

- **Code:**

```
⇒ SELECT HOTEL_ID, HOTEL_NAME, PRICE
   FROM HOTEL;
⇒ SELECT TICKET_NUMBER, PRICE
   FROM TICKET;
⇒ SELECT EMPLOYEE_SSN, FIRST_NAME, LAST_NAME, SALARY
   FROM EMPLOYEE;
⇒ UPDATE EMPLOYEE
   SET Salary = Salary + (Salary * 10 / 100)
```

```
        WHERE BRANCH_NUM = '00055';
⇒ UPDATE EMPLOYEE
   SET Salary = Salary * 13.74;
⇒ UPDATE HOTEL
   SET PRICE = PRICE * 13.74;
⇒ UPDATE TICKET
   SET PRICE = PRICE * 13.74;
⇒ SELECT HOTEL_ID, HOTEL_NAME, PRICE
   FROM HOTEL;
⇒ SELECT TICKET_NUMBER, PRICE
   FROM TICKET;
⇒ SELECT EMPLOYEE_SSN, FIRST_NAME, LAST_NAME, SALARY
   FROM EMPLOYEE;
```

- **Result:**

  ⇒ **Before:**

Result_Number	EMPLOYEE_SSN	FIRST_NAME	LAST_NAME	SALARY
1	61229982	John	Smith	7.02
2	889928456	James	Maddison	6.02
3	420885610	Faith	Allen	7.02
4	439088731	Simon	Williams	6.02
5	910284334	Grace	Robert	7.02
6	439088732	Elizabeth	Coleman	6.02
7	819026608	Izumi	Sakai	7.02
8	819026609	Akira	Kiyama	6.02
9	611209181	Chinara	Okoye	9.02
10	611209182	Blessing	Egbe	8.02
11	344309012	Natasha	Smirnov	5.02
12	344309013	Ivan	Orlov	7.02
13	301928372	Alice	Greco	7.02
14	301928371	Eduardo	Bruno	5.42
15	491022861	Kiaan	Singh	7.02
16	491022860	Viraj	Sharma	6.02
17	801927542	Sarah	Mrad	7.02
18	801927541	Ghada	Saad	6.02

Result_Number	HOTEL_ID	HOTEL_NAME	PRICE
1	754125479	Liberty Motel	0.01
2	620390011	King Galaxy Hotel	0.05
3	720901923	Four Seasons Hotel	0.05
4	720901924	Marriott Hotel	0.05
5	720901925	Copenhagen Hotel	0.02
6	720901926	Northern Light Hotel	0.02
7	720901927	European Hotel	0.05
8	720901928	Galaxy Hotel	0.03
9	430293817	Hilton Garden Inn	0.05
10	125227690	Hogwarts School	0.02

Result_Number	TICKET_NUMBER	PRICE
1	1457855	0.07
2	6701932	0.1
3	6701933	0.1
4	6701934	0.1
5	6701935	0.1
6	6701941	0.1
7	6701942	0.1
8	6701943	0.1
9	6701944	0.1
10	6701931	0.1
11	1588513	0.01
12	1588511	0.01
13	1588512	0.01
14	1588514	0.01
15	1588515	0.01
16	1588516	0.01
17	1288511	0.01
18	1288512	0.01
19	1288513	0.01
20	1288514	0.01
21	1288515	0.01
22	1288516	0.01
23	1288517	0.01
24	8192002	0.1
25	8192003	0.1
26	8192004	0.1
27	6701921	0.1
28	6701922	0.1
29	6701923	0.1
30	6701924	0.1
31	6701925	0.1
32	6701945	0.1
33	6651001	0.1
34	6651004	0.1
35	6651002	0.1
36	6651003	0.1
37	7001920	0.1

⇒ **After:**

Result_Number	HOTEL_ID	HOTEL_NAME	PRICE
1	754125479	Liberty Motel	0.1374
2	620390011	King Galaxy Hotel	0.687
3	720901923	Four Seasons Hotel	0.687
4	720901924	Marriott Hotel	0.687
5	720901925	Copenhagen Hotel	0.2748
6	720901926	Northern Light Hotel	0.2748
7	720901927	European Hotel	0.687
8	720901928	Galaxy Hotel	0.4122
9	430293817	Hilton Garden Inn	0.687
10	125227690	Hogwarts School	0.2748

Result_Number	EMPLOYEE_SSN	FIRST_NAME	LAST_NAME	SALARY
1	61229982	John	Smith	96.45
2	889928456	James	Maddison	82.71
3	420885610	Faith	Allen	96.45
4	439088731	Simon	Williams	82.71
5	910284334	Grace	Robert	96.45
6	439088732	Elizabeth	Coleman	82.71
7	819026608	Izumi	Sakai	96.45
8	819026609	Akira	Kiyama	82.71
9	611209181	Chinara	Okoye	136.3
10	611209182	Blessing	Egbe	121.19
11	344309012	Natasha	Smirnov	68.97
12	344309013	Ivan	Orlov	96.45
13	301928372	Alice	Greco	96.45
14	301928371	Eduardo	Bruno	74.47
15	491022861	Kiaan	Singh	96.45
16	491022860	Viraj	Sharma	82.71
17	801927542	Sarah	Mrad	96.45
18	801927541	Ghada	Saad	82.71

Result_Number	TICKET_NUMBER	PRICE
1	1457855	0.96
2	6701932	1.37
3	6701933	1.37
4	6701934	1.37
5	6701935	1.37
6	6701941	1.37
7	6701942	1.37
8	6701943	1.37
9	6701944	1.37
10	6701931	1.37
11	1588513	0.14
12	1588511	0.14
13	1588512	0.14
14	1588514	0.14
15	1588515	0.14
16	1588516	0.14
17	1288511	0.14
18	1288512	0.14
19	1288513	0.14
20	1288514	0.14
21	1288515	0.14
22	1288516	0.14
23	1288517	0.14
24	8192002	1.37
25	8192003	1.37
26	8192004	1.37
27	6701921	1.37
28	6701922	1.37
29	6701923	1.37
30	6701924	1.37
31	6701925	1.37
32	6701945	1.37
33	6651001	1.37
34	6651004	1.37
35	6651002	1.37
36	6651003	1.37
37	7001920	1.37

4. <u>Russian-Ukraine War Repercussion:</u>

After Vladimir Putin, Russia's president, ordered the invasion of Ukraine on February 24, 2022, Metatravel, along with other companies, were faced with the dilemma of re-examining their ties with Russia. Despite the strong ties built with Russia during the last couple of years, Metatravel has decided to withdraw from Russia and relocate its Russian branch to Kazakhstan. Therefore, all employees working for the Russian branch with **`Branch_Number=00066`** have to be transferred to the Kazakh branch with **`Branch_Number=00077`**.

Moreover, Metatravel has decided to cut ties with all of its partners still operating in Russia. Thus, partners with **`Country= "Russia"`** should be deleted.

- **<u>Code:</u>**

    ⇒
    ```
    SELECT EMPLOYEE_SSN, FIRST_NAME, LAST_NAME, BRANCH_NUM, BRANCH.COUNTRY
    
    FROM EMPLOYEE, BRANCH
    
    WHERE BRANCH_NUM = '00066' AND BRANCH_NUMBER = BRANCH_NUM;
    ```

    ⇒
    ```
    SELECT PARTNER_ID, NAME, COUNTRY
    
     FROM PARTNER
    ```

    ⇒
    ```
    UPDATE EMPLOYEE
    
    SET BRANCH_NUM = '00077'
    
    WHERE BRANCH_NUM = '00066';
    ```

    ⇒
    ```
    DELETE PARTNER
    
    WHERE COUNTRY = 'Russia';
    ```

⇒ SELECT EMPLOYEE_SSN, FIRST_NAME, LAST_NAME, BRANCH_NUM,
   BRANCH.COUNTRY

   FROM EMPLOYEE, BRANCH

   WHERE BRANCH_NUM = '00077' AND BRANCH_NUMBER = BRANCH_NUM;

⇒ SELECT PARTNER_ID, NAME, COUNTRY

   FROM PARTNER

- **Result:**

  ⇒ **Before:**

Result_Number	EMPLOYEE_SSN	FIRST_NAME	LAST_NAME	BRANCH_NUM	COUNTRY
1	344309012	Natasha	Smirnov	66	Russia
2	344309013	Ivan	Orlov	66	Russia

Result_Number	PARTNER_ID	NAME	COUNTRY
1	376180927	American Airlines	United States
2	810091662	Japan Airline	Japan
3	541180927	Hogwarts Express	England
4	810091665	SpaceX	United States
5	810091661	Japan Railways	Japan
6	779018291	Russia Airline	Russia
7	779018292	Russia Railways	Russia
8	920267029	French Airlines	France
9	779018293	Russia Busses	Russia
10	690192010	Aeroitalia	Italy
11	187102918	Middle East Airline	Lebanon

  ⇒ **After:**

Result_Number	EMPLOYEE_SSN	FIRST_NAME	LAST_NAME	BRANCH_NUM	COUNTRY
1	344309012	Natasha	Smirnov	77	Kazakhstan
2	344309013	Ivan	Orlov	77	Kazakhstan

Result_Number	PARTNER_ID	NAME	COUNTRY
1	376180927	American Airlines	United States
2	810091662	Japan Airline	Japan
3	541180927	Hogwarts Express	England
4	810091665	SpaceX	United States
5	810091661	Japan Railways	Japan
6	920267029	French Airlines	France
7	690192010	Aeroitalia	Italy
8	187102918	Middle East Airline	Lebanon

5. <u>Roomergency:</u>

A travel agent at Metatravel recommended the wrong hotel to the customer **Andrea Sofia Rossi**. When Andrea arrived at the Four Seasons Hotel (**Hotel_ID= 720901923**) in Denmark and tried to check-in, the hotel staff mentioned that there were no reservations under her name. Shocked, Andrea immediately contacted Metatravel. It turns out that the travel agent gave her a recommendation that did not match her expectations and wrongfully booked it for her.

Metatravel now has to rectify the situation and find a new hotel in the same area of **City= Copenhagen** and **Country= Denmark** with available rooms to book. Also, the agency apologized on behalf of the employee and decided to grant Andrea a 10% bonus to her points balance.

Additionally, Metatravel has to find the agent that made the wrong recommendation and decrease 10% from their salary. The employee will remain under probation until further notice.

Given:
- **Andrea's Passport_ID = 700192018**
- **Wrong Hotel_ID= 720901923** (We need to find the room type requested by Andrea and the location of the hotel to match them to a new hotel)

- **Code:**

  ⇒
  ```
  SELECT DISTINCT EMPLOYEE.EMPLOYEE_SSN, EMPLOYEE.FIRST_NAME,
  EMPLOYEE.LAST_NAME, EMPLOYEE.SALARY

  FROM EMPLOYEE, RECOMMENDS

  WHERE EMPLOYEE.EMPLOYEE_SSN = RECOMMENDS.EMPLOYEE_SSN AND
  RECOMMENDS.Psprt_id= '700192018';
  ```

⇒ SELECT FIRST_NAME, LAST_NAME, PASSPORT_ID , POINTS_BALANCE,
  HOTEL_ID

  FROM CUSTOMER

  WHERE PASSPORT_ID = '700192018';

⇒ UPDATE EMPLOYEE

  SET Salary = Salary - (Salary * 10 / 100)
  WHERE EMPLOYEE.EPLOYEE_SSN IN

    (SELECT DISTINCT EMPLOYEE.EMPLOYEE_SSN, EMPLOYEE.FIRST_NAME,
    EMPLOYEE.LAST_NAME, EMPLOYEE.SALARY

    FROM EMPLOYEE, RECOMMENDS

    WHERE EMPLOYEE.EMPLOYEE_SSN = RECOMMENDS.EMPLOYEE_SSN AND
    RECOMMENDS.Psprt_id= '700192018');

⇒ UPDATE CUSTOMER

  SET CUSTOMER.HOTEL_ID =

    (SELECT ROOM.H_ID

    FROM HOTEL, ROOM

    WHERE HOTEL.HOTEL_ID = ROOM.H_ID AND HOTEL.CITY =
    'Copenhagen' AND HOTEL.COUNTRY = 'Denmark' AND (NOT
    CUSTOMER.HOTEL_ID = HOTEL.HOTEL_ID) AND ROWNUM = 1)

    WHERE CUSTOMER.Passport_id IN

```
        (SELECT DISTINCT CUSTOMER.Passport_id

    FROM CUSTOMER

    WHERE CUSTOMER.PASSPORT_ID = '700192018');
```

⇒ SELECT DISTINCT EMPLOYEE.EMPLOYEE_SSN, EMPLOYEE.FIRST_NAME, EMPLOYEE.LAST_NAME, EMPLOYEE.SALARY

FROM EMPLOYEE, RECOMMENDS

WHERE EMPLOYEE.EMPLOYEE_SSN = RECOMMENDS.EMPLOYEE_SSN AND RECOMMENDS.Psprt_id= '700192018';

⇒ SELECT FIRST_NAME, LAST_NAME, PASSPORT_ID , POINTS_BALANCE, HOTEL_ID

FROM CUSTOMER

WHERE PASSPORT_ID = '700192018';

- **Result:**
  ⇒ **Before:**

Result_Number	EMPLOYEE_SSN	FIRST_NAME	LAST_NAME	SALARY
1	301928371	Eduardo	Bruno	6.02

Result_Number	FIRST_NAME	LAST_NAME	PASSPORT_ID	Points_Balance	HOTEL_ID
1	Andrea	Rossi	700192018	20	720901923

  ⇒ **After:**

Result_Number	EMPLOYEE_SSN	FIRST_NAME	LAST_NAME	SALARY
1	301928371	Eduardo	Bruno	5.42

Result_Number	FIRST_NAME	LAST_NAME	PASSPORT_ID	POINTS_BALANCE	HOTEL_ID
1	Andrea	Rossi	700192018	20	720901924

6. The Disposal of Expired Contracts:

Metatravel has decided to dispose of all the expired contracts in its database to save up on storage space. Therefore, we need to create a query that deletes all the contracts from the contract table with expiry date before the current date.

- **Code:**

  ⇒ `SELECT * FROM CONTRACT;`

  ⇒ `DELETE FROM CONTRACT WHERE Expiry_date < trunc(sysdate);`

  ⇒ `SELECT * FROM CONTRACT;`

- **Result:**

  ⇒ **Before:**

Entry_Number	CONTRACT_ID	IS_REFUNDABLE	IS_SIGNED	EXPIRY_DATE	TRAVEL_REASON	ESSN	PSPRT_ID
1	98765	Y	Y	1/10/2022	Vacation	889928456	127362306
2	6170933	Y	Y	8/5/2023	Music Festival	819026609	432779156
3	6170934	Y	Y	8/5/2023	Music Festival	819026609	432779157
4	6170967	Y	Y	1/10/2022	School	439088731	781457987
5	6170922	Y	Y	8/9/2022	Exploration	439088731	984230491
6	6170923	Y	Y	8/9/2022	Exploration	439088732	721230456
7	6170924	Y	Y	8/9/2022	Exploration	439088732	644578149
8	6170959	Y	Y	8/9/2022	Business	301928371	700192018
9	6102918	N	N	8/21/2023	Business	301928371	700192018
10	3278001	Y	Y	8/22/2022	Immigration	801927541	556891162

⇒ **After:**

Result_Number	CONTRACT_ID	IS_REFUNDABLE	IS_SIGNED	EXPIRY_DATE	TRAVEL_REASON	ESSN	PSPRT_ID
1	6170933	Y	Y	8/5/2023	Music Festival	819026609	432779156
2	6170934	Y	Y	8/5/2023	Music Festival	819026609	432779157
3	6102918	N	N	8/21/2023	Business	301928371	700192018

7. For the Love of Football:

Kumar Aarav Patil, a Metatravel customer, is an avid football supporter. With the 2022 World Cup coming this November, Kumar was adamant that he was traveling to Qatar to watch it. His points balance with Metatravel is 92 points. He needed to meet the threshold of 100 to get a 50% discount on his flight. Not thinking clearly, Kumar, with the help of the Metatravel employee managing him, decided to hack into Metatravel's database system and increase his balance to 100 in hopes of receiving a 50% discount. The database administrators at Metatravel were immediately notified of this breach. In this query, we seek to first find the employee who helped Kumar hack into the system and fire them. Moreover, we need to delete Kumar from the database since he has been banned from Metatravel. The dispute will later be settled in court.

Given:
Kumar's Passport_ID= 432779157

- **Code:**
    ⇒ SELECT EMPLOYEE_SSN, FIRST_NAME, LAST_NAME FROM EMPLOYEE;
    ⇒ SELECT EMPLOYEE.EMPLOYEE_SSN, EMPLOYEE.FIRST_NAME,
       EMPLOYEE.LAST_NAME

    FROM EMPLOYEE, MANAGES

    WHERE EMPLOYEE.EMPLOYEE_SSN = MANAGES.EMPLOYEE_SSN AND
    MANAGES.PSPRT_ID = '432779157';

    ⇒ DELETE FROM EMPLOYEE

```
WHERE EXIST

    (SELECT EMPLOYEE.EMPLOYEE_SSN

    FROM EMPLOYEE, MANAGES

    WHERE EMPLOYEE.EMPLOYEE_SSN = MANAGES.EMPLOYEE_SSN AND
    MANAGES.PSPRT_ID = '432779157');
```

$\Rightarrow$ DELETE FROM CUSTOMER WHERE PASSPORT_ID = **'432779157'**;

$\Rightarrow$ SELECT EMPLOYEE_SSN, FIRST_NAME, LAST_NAME FROM EMPLOYEE;

- **Result:**

  $\Rightarrow$ **Before:**

Result_Number	EMPLOYEE_SSN	FIRST_NAME	LAST_NAME
1	819026609	Akira	Kiyama

Result Number	EMPLOYEE_SSN	FIRST_NAME	LAST_NAME
1	61229982	John	Smith
2	889928456	James	Maddison
3	420885610	Faith	Allen
4	439088731	Simon	Williams
5	910284334	Grace	Robert
6	439088732	Elizabeth	Coleman
7	819026608	Izumi	Sakai
8	819026609	Akira	Kiyama
9	611209181	Chinara	Okoye
10	611209182	Blessing	Egbe
11	344309012	Natasha	Smirnov
12	344309013	Ivan	Orlov
13	301928372	Alice	Greco
14	301928371	Eduardo	Bruno
15	491022861	Kiaan	Singh
16	491022860	Viraj	Sharma
17	801927542	Sarah	Mrad
18	801927541	Ghada	Saad

⇒ **AFTER:**

Result Number	EMPLOYEE_SSN	FIRST_NAME	LAST_NAME
1	61229982	John	Smith
2	889928456	James	Maddison
3	420885610	Faith	Allen
4	439088731	Simon	Williams
5	910284334	Grace	Robert
6	439088732	Elizabeth	Coleman
7	819026608	Izumi	Sakai
8	611209181	Chinara	Okoye
9	611209182	Blessing	Egbe
10	344309012	Natasha	Smirnov
11	344309013	Ivan	Orlov
12	301928372	Alice	Greco
13	301928371	Eduardo	Bruno
14	491022861	Kiaan	Singh
15	491022860	Viraj	Sharma
16	801927542	Sarah	Mrad
17	801927541	Ghada	Saad

8. Hijacked While Ad Astra[2]

With a vision of colonizing and establishing a self-sustaining city on Mars, SpaceX CEO Elon Musk has decided to organize a voyage to the Red Planet. However, the spaceship has been hijacked by a bitter Twitter employee, whom Musk has recently fired after taking control of Twitter in a $44 billion deal. The spacecraft pilot immediately reported to the mission control room at SpaceX's headquarters in Texas that the spacecraft has been hijacked. However, it was too late.

The spacecraft soon exploded in space. 4 passengers were lost that day. One of them was Elon Musk, the world's richest tech billionaire. Metatravel, who had arranged the trip for the other 3 passengers, was immediately informed of the tragedy. It is thus our duty to identify the 3

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[2] Latin phrase meaning "to the stars"

customers who were on that spacecraft and reach the emergency contacts to break the news to them. We need to find the **Names** and **Chat_IDs** of the emergency contacts of each of the dead passengers knowing that their ticket numbers are **8192002, 8192003,** and **8192004.**

- **<u>Code:</u>**

```
SELECT DISTINCT EMERGENCY_CONTACT1.First_Name,
EMERGENCY_CONTACT1.Middle_Name, EMERGENCY_CONTACT1.Last_Name,
EMERGENCY_CONTACT1.Chat_ID, EMERGENCY_CONTACT1.P_ID

FROM EMERGENCY_CONTACT1, CUSTOMER, TICKET

WHERE CUSTOMER.Passport_ID = EMERGENCY_CONTACT1.P_ID AND
CUSTOMER.PASSPORT_ID IN

    (SELECT TICKET.Psprt_ID

    FROM TICKET

    WHERE Ticket_number= '8192002' OR Ticket_number= '8192003' OR
        Ticket_number='8192004');
```

- **<u>Result:</u>**

Result_Number	FIRST_NAME	MIDDLE_NAME	LAST_NAME	CHAT_ID	P_ID
1	Harry	Sam	Holland	71912982	721230456
2	Amy	Waters	Davidson	71912981	984230491
3	Blake	Lively	Reynolds	71912983	644578149

9. <u>__Carlos Ghosn: Capturing the Fugitive__</u>

Carlos Ghosn – the former CEO of the Renault-Nissan Alliance – has been charged with financial crimes in Japan. He had been previously arrested a few times but granted requests for bail. Ghosn claimed he "no longer be held hostage by a rigged Japanese justice system where guilt is presumed, discrimination is rampant, and basic human rights are denied." On the 5th of February 2022, numerous media outlets reported Ghosn's plan to escape Japan. He was seen outside of a Metatravel branch in Osaka with two men carrying large containers and a music equipment box in which Ghosn was allegedly supposed to hide.

The Interpol has issued a red notice for his arrest and has asked Metatravel to help find the fugitive. All that has been known is that the men are headed to a certain airport in Japan. However, they have used another mode of transportation before that. We need to find all the tickets that connect to a ticket with **Departure_Country= "Japan"** and **Mode_Of_Transportation= "Plane."** The tickets belong to two customers with **Gender= "M"** and **"Brnch_nb= 00088"** We identify all the **Passport_IDs** of these customers to ban them from travelling until the culprits are caught.

- **Code:**

```
SELECT Distinct CUSTOMER.Passport_ID

FROM CUSTOMER, TICKET

WHERE CUSTOMER.Gender= 'M' AND CUSTOMER.Brnch_nb= '00088' AND

    TICKET.Ticket_Number IN

    (SELECT TICKET.Connection_Number
```

```
    FROM TICKET

    WHERE Departure_Country= 'Japan' AND Mode_Of_Transportation=
            'Plane');
```

- **Result:**

Resut_Number	PASSPORT_ID
1	432779156
2	432779157

10. **Arabophobia in the Air**

`Ibrahim Ammar` is a Lebanese customer of Metatravel who is in the process of immigrating to the United States. He recently booked tickets for him, his wife, and their 3 children to travel to the United States. However, due to the American ban on Middle East Airlines[3], he had to book two connecting tickets: from Lebanon to France and from France to Detroit, Michigan. After the first flight and upon their arrival to Paris, Ibrahim and his family were racially profiled by French Airlines security. They were not allowed to board their connecting flight from France to Detroit with French Airlines.

Being unable to stay in France due to their lack of a Schengen visa, the Ammar family must immediately leave the country. Ibrahim contacts his Metatravel agent, explains the situation, and requests to book another flight. The new flights are booked with American Airlines. Appalled by the situation, the agent informs his supervisor, who in turn informs the Partner-Relations department at the Lebanese branch. Metatravel does not tolerate discrimination and decides to cut ties with French Airlines until an apology statement is issued.

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[3] There has been an American ban on Middle East Airlines (MEA) since the hijacking of a Trans World Airlines (TWA) American Passenger plane at Beirut Airport in 1985. Consequently, the airport was placed on the US terror list.

Given:

-Ibrahims's passport_id: 81735301

Steps:

-Find Ibrahim's travel agent (through MANAGES relationship) + the employee's supervisor ESSN

-Delete French Airlines from PARTNER table

-Find Ibrahim and his family members new tickets to travel to Detroit.

- **Code:**

    ⇒ 1) SELECT FIRST_NAME, LAST_NAME, EMPLOYEE_SSN

    FROM EMPLOYEE

    WHERE EMPLOYEE.EMPLOYEE_SSN IN

    (SELECT EMPLOYEE.Supervisor_SSN

    FROM EMPLOYEE, MANAGES

    WHERE EMPLOYEE.Employee_SSN = MANAGES.Employee_SSN AND
    MANAGES.Employee_SSN IN

    (SELECT MANAGES.Employee_SSN

    FROM MANAGES, CUSTOMER

    WHERE CUSTOMER.Passport_ID= '556891162' AND CUSTOMER.Passport_ID=
    MANAGES.Psprt_ID));

    ⇒ 2)SELECT * FROM PARTNER;

⇒ DELETE PARTNER

  WHERE NAME = 'French Airlines';

⇒ SELECT * FROM PARTNER;

⇒ 3) SELECT TICKET_NUMBER, TRANSPORT_COMPANY, DESTINATION_CITY,
  DEPARTURE_CITY, CONNECTION_NUMBER, PSPRT_ID, PRTNR_ID

  FROM TICKET

  WHERE PSPRT_ID = '556891162';

⇒ UPDATE TICKET

  SET PSPRT_ID = '556891162'

  WHERE TICKET_NUMBER IN

  (SELECT DISTINCT TICKET_NUMBER

  FROM TICKET

  WHERE DESTINATION_CITY = 'Detroit' AND DEPARTURE_CITY =
  'Paris');

⇒ SELECT TICKET_NUMBER, TRANSPORT_COMPANY, DESTINATION_CITY,
  DEPARTURE_CITY, CONNECTION_NUMBER, PSPRT_ID, PRTNR_ID

  FROM TICKET

  WHERE PSPRT_ID = '556891162';

Result:

1)

Result_Number	FIRST_NAME	LAST_NAME	EMPLOYEE_SSN
1	Sarah	Mrad	801927542

2)

Before:

Result_Name	PARTNER_ID	NAME	CITY	STATE	COUNTRY	PLANET	SERVICE	STREET_NUMBER
1	376180927	American Airlines	Fort Worth	Texas	United States	Earth	Flights	56198
2	810091662	Japan Airline	Osaka		Japan	Earth	Airplanes	16273
3	541180927	Hogwarts Express	London		England	Earth	Trains	37116
4	810091665	SpaceX	Fort Worth	Texas	United States	Earth	Spaceships	37133
5	810091661	Japan Railways	Osaka		Japan	Earth	Trains	57109
6	779018291	Russia Airline	Moscow		Russia	Earth	Airplanes	23789
7	779018292	Russia Railways	Kazan		Russia	Earth	Trains	30192
8	920267029	French Airlines	Paris		France	Earth	Planes	20
9	779018293	Russia Busses	St. Petersburg		Russia	Earth	Trains	30192
10	690192010	Aeroitalia	Rome		Italy	Earth	Planes	91029
11	187102918	Middle East Airline	Beirut		Lebanon	Earth	Planes	55020

After:

Result_Name	PARTNER_ID	NAME	CITY	STATE	COUNTRY	PLANET	SERVICE	STREET_NUMBER
1	376180927	American Airlines	Fort Worth	Texas	United States	Earth	Flights	56198
2	810091662	Japan Airline	Osaka		Japan	Earth	Airplanes	16273
3	541180927	Hogwarts Express	London		England	Earth	Trains	37116
4	810091665	SpaceX	Fort Worth	Texas	United States	Earth	Spaceships	37133
5	810091661	Japan Railways	Osaka		Japan	Earth	Trains	57109
6	779018291	Russia Airline	Moscow		Russia	Earth	Airplanes	23789
7	779018292	Russia Railways	Kazan		Russia	Earth	Trains	30192
8	779018293	Russia Busses	St. Petersburg		Russia	Earth	Trains	30192
9	690192010	Aeroitalia	Rome		Italy	Earth	Planes	91029
10	187102918	Middle East Airline	Beirut		Lebanon	Earth	Planes	55020

3)Before:

Result_Number	TICKET_NUMBER	TRANSPORT_COMPANY	DESTINATION_CITY	DEPARTURE_CITY	CONNECTION_NUMBER	PSPRT_ID	PRTNR_ID
1	6701932	French Airlines	Detroit	Paris	6701922	556891162	920267029
2	6701933	French Airlines	Detroit	Paris	6701923	556891162	920267029
3	6701934	French Airline	Detroit	Paris	6701924	556891162	920267029
4	6701935	French Airline	Detroit	Paris	6701925	556891162	920267029
5	6701931	French Airlines	Detroit	Paris	6701921	556891162	920267029
6	6701921	Middle East Airline	Paris	Beirut		556891162	187102918
7	6701922	Middle East Airline	Paris	Beirut		556891162	187102918
8	6701923	Middle East Airline	Paris	Beirut		556891162	187102918
9	6701924	Middle East Airline	Paris	Beirut		556891162	187102918
10	6701925	Middle East Airline	Paris	Beirut		556891162	187102918

After:

Result_Number	TICKET_NUMBER	TRANSPORT_COMPANY	DESTINATION_CITY	DEPARTURE_CITY	CONNECTION_NUMBER	PSPRT_ID	PRTNR_ID
1	6701941	American Airlines	Detroit	Paris	6701921	556891162	376180927
2	6701942	American Airlines	Detroit	Paris	6701922	556891162	376180927
3	6701943	American Airlines	Detroit	Paris	6701923	556891162	376180927
4	6701944	American Airlines	Detroit	Paris	6701924	556891162	376180927
5	6701921	Middle East Airline	Paris	Beirut		556891162	187102918
6	6701922	Middle East Airline	Paris	Beirut		556891162	187102918
7	6701923	Middle East Airline	Paris	Beirut		556891162	187102918
8	6701924	Middle East Airline	Paris	Beirut		556891162	187102918
9	6701925	Middle East Airline	Paris	Beirut		556891162	187102918
10	6701945	American Airlines	Detroit	Paris	6701925	556891162	376180927

XVI. <u>Normalization Up to BCNF</u>

Ensuing the creation of all relations, we should improve them by normalizing them according to several normal forms. Here, we will normalize them up to the Boyce-Codd Normal Form. In other words, we will normalize them according to the first normal form, followed by the second, third and Boyce-Codd normal forms.

First Normal Form:

This form dictates that each field within a relation schema should not be multivalued, composite, or their combinations. Only single atomic values are permitted as attribute values. Domain of an attribute must solely include atomic values, and the value of an attribute in a tuple must be a single value from the domain of that attribute. Namely, a set of values cannot be an attribute value for a single tuple.

Second Normal Form

To meet this form, all the nonprime attributes in the relation ought to be fully functionally dependent on the prime attributes, such that:

- A prime attribute is an attribute that is a member of the primary key K in a relation R. Hence, a nonprime attribute is not a member of any candidate key.
- A functional dependency $X \rightarrow Y$ is a constraint between two sets of attributes from the database. If the values of component Y of a tuple in relation R depend on or are determined by the values of an X component. We say that Y is functionally dependent on X.
- A functional dependency $X \rightarrow Y$ is a full functional dependency if the removal of any attribute A from X means that the functional dependency does not hold anymore. However, a functional dependency $X \rightarrow Y$ is a partial functional dependency if removal of any attribute A from X means that the dependency still holds.
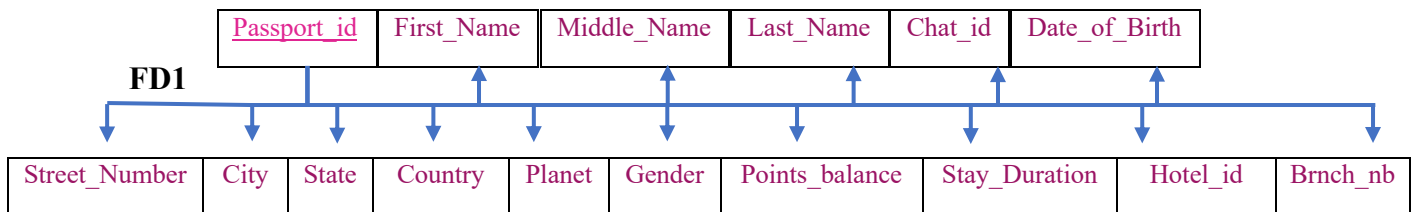
Third Normal Form

A relation is in third normal form (3NF) if whenever a functional dependency $X \rightarrow Y$ holds, then either:
a) X is a superkey of R, or
b) Y is a prime attribute of R

Boyce-Codd Normal Form

A relation schema R is in Boyce-Codd Normal Form (BCNF) if whenever a functional dependency X→Y holds then X is a superkey of R. This normal form is a subset of the 3NF.

1. **CUSTOMER**

A. The **CUSTOMER** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **CUSTOMER** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key Passport_id.

C. The **CUSTOMER** relation schema satisfies the 3NF because Passport_id is the superkey of that table (at least one of the conditions is satisfied).

D. The **CUSTOMER** relation schema satisfies the BCNF because Passport_id is the superkey of that table.

2. **EMPLOYEE**
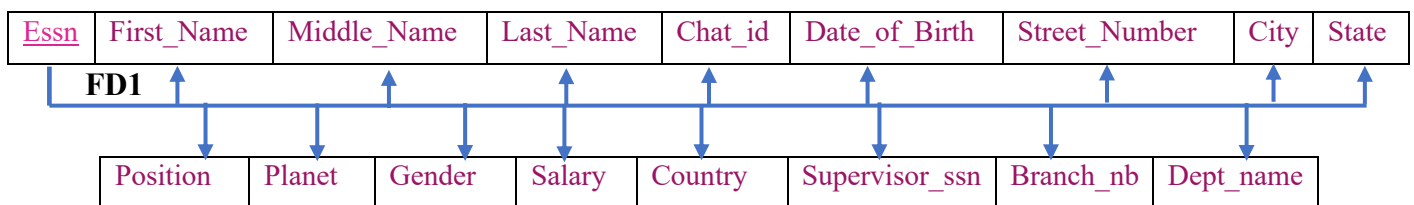
A.   The **EMPLOYEE** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B.   The **EMPLOYEE** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key Essn.

C.   The **EMPLOYEE** relation schema satisfies the 3NF because Essn is the superkey of that table (at least one of the conditions is satisfied).

D.   The **EMPLOYEE** relation schema satisfies the BCNF because Essn is the superkey of that table.
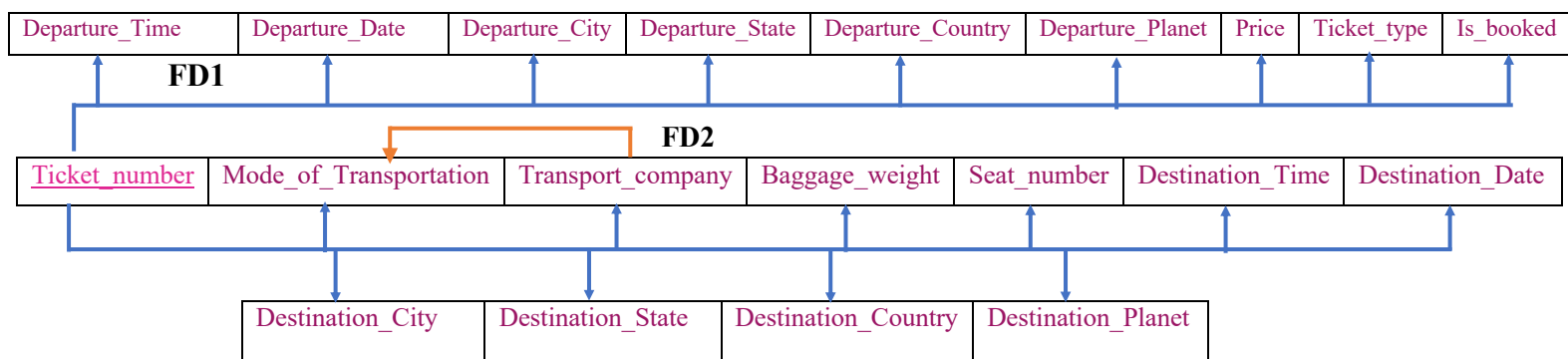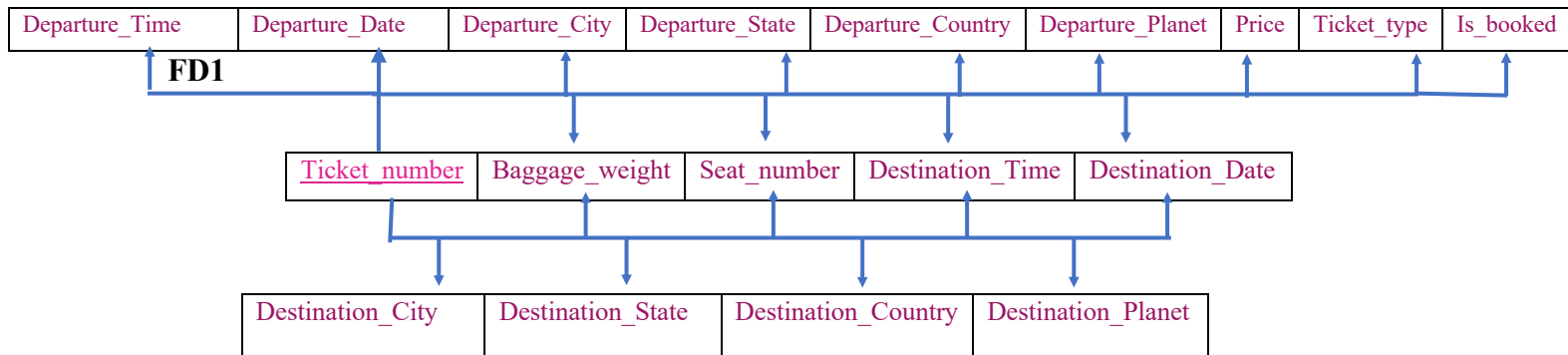
3. TICKET

A.   The **TICKET** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B.   The **TICKET** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key Ticket_number.

C.   The **TICKET** relation schema does not satisfy all the conditions of the 3NF because the functional dependency represented by Transport_company and Mode_of_Transportation is a functional dependency where neither Transport_company is a super key nor Mode_of_Transportation is a prime attribute. Thus, further decomposition is required.
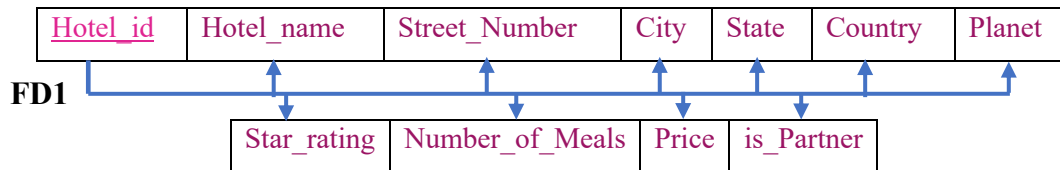
TICKET-A

Departure_Time	Departure_Date	Departure_City	Departure_State	Departure_Country	Departure_Planet	Price	Ticket_type	Is_booked

FD1

Ticket_number	Baggage_weight	Seat_number	Destination_Time	Destination_Date

Destination_City	Destination_State	Destination_Country	Destination_Planet

TICKET-B

FD2

Mode_of_Transportation	Transport_company

D. The **TICKET** relation schema satisfies the BCNF because there exists no functional dependency X → A where A is not a prime attribute and X is not a super key.

4. HOTEL

Hotel_id	Hotel_name	Street_Number	City	State	Country	Planet

FD1

Star_rating	Number_of_Meals	Price	is_Partner

A. The **HOTEL** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **HOTEL** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key Hotel_id.

C. The **HOTEL** relation schema satisfies the 3NF because Hotel_id is the superkey of that table (at least one of the conditions is satisfied).

D. The **HOTEL** relation schema satisfies the BCNF because Hotel_id is the superkey of that table.
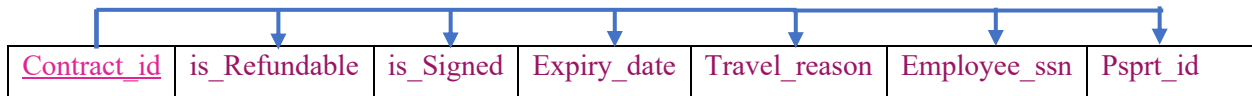
5. ROOM

FD1

Room_Number	H_id	Capacity	Room_Type
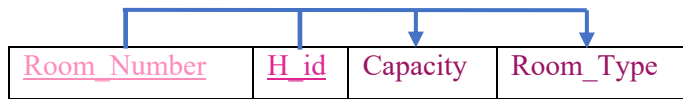
A. The **ROOM** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **ROOM** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key consisting of Room_Number and H_id.

C. The **ROOM** relation schema satisfies the 3NF because Room_Number and H_id are the superkeys of that table (at least one of the conditions is satisfied).

D. The **ROOM** relation schema satisfies the BCNF because Room_Number and H_id are the superkeys of that table.

6. CONTRACT

FD1

Contract_id	is_Refundable	is_Signed	Expiry_date	Travel_reason	Employee_ssn	Psprt_id

A. The **CONTRACT** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **CONTRACT** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key Contract_id.

C. The **CONTRACT** relation schema satisfies the 3NF because Contract _id is the superkey of that table (at least one of the conditions is satisfied).

D. The **CONTRACT** relation schema satisfies the BCNF because Contract _id is the superkey of that table.

7. **COMPANION**

FD1

First_Name	Middle_Name	Last_Name	P_id	Chat_id	Date_of_Birth	Gender	Relationship

A. The **COMPANION** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **COMPANION** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key consisting of First_Name, Middle_Name, Last_Name, and P_id.

C. The **COMPANION** relation schema satisfies the 3NF because First_Name, Middle_Name, Last_Name, and P_id are the superkeys of that table (at least one of the conditions is satisfied).

D. The **COMPANION** relation schema satisfies the BCNF because because First_Name, Middle_Name, Last_Name, and P_id are the superkeys of that table.

8. **BILL**

FD1

Transaction_id	Payment_date	Method_of_Payment	Psprt_id

A. The **BILL** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **BILL** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key Transaction_id.

C. The **BILL** relation schema satisfies the 3NF because Transaction_id is the superkey of that table (at least one of the conditions is satisfied).

D. The **BILL** relation schema satisfies the BCNF because Transaction_id is the superkey of that table.

9. DEPARTMENT

FD1

Department_Name	Branch_Nb	Description

A. The **DEPARTMENT** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **DEPARTMENT** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key consisting of Department_Name and Branch_Nb.

C. The **DEPARTMENT** relation schema satisfies the 3NF because Department_Name and Branch_Nb are the superkeys of that table (at least one of the conditions is satisfied).

D. The **DEPARTMENT** relation schema satisfies the BCNF because Department_Name and Branch_Nb are the superkeys of that table.

FD1

10. EMERGENCY_CONTACT1
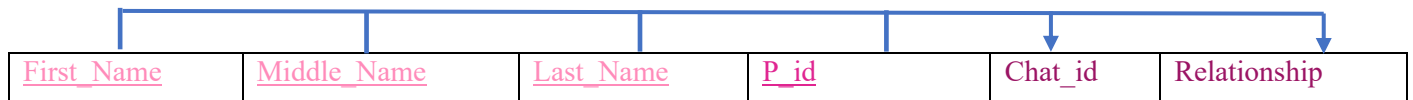
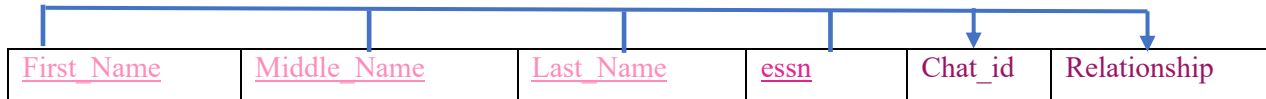| First_Name	Middle_Name	Last_Name	P_id	Chat_id	Relationship

A. The **EMERGENCY_CONTACT1** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **EMERGENCY_CONTACT1** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key consisting of First_Name, Middle_Name, Last_Name, and P_id.

C. The **EMERGENCY_CONTACT1** relation schema satisfies the 3NF because First_Name, Middle_Name, Last_Name, and P_id are the superkeys of that table (at least one of the conditions is satisfied).

D. The **EMERGENCY_CONTACT1** relation schema satisfies the BCNF because First_Name, Middle_Name, Last_Name, and P_id are the superkeys of that table of that table.

**FD1** **11. EMERGENCY_CONTACT2**

First_Name	Middle_Name	Last_Name	essn	Chat_id	Relationship

A. The **EMERGENCY_CONTACT2** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **EMERGENCY_CONTACT2** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key consisting of First_Name, Middle_Name, Last_Name, and essn.

C. The **EMERGENCY_CONTACT2** relation schema satisfies the 3NF because First_Name, Middle_Name, Last_Name, and essn are the superkeys of that table (at least one of the conditions is satisfied).

D. The **EMERGENCY_CONTACT2** relation schema satisfies the BCNF because First_Name, Middle_Name, Last_Name, essn are the superkeys of that table of that table

12. BRANCH

FD1

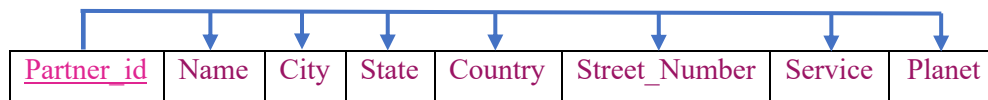| Branch_Number	Street_Number	City	State	Country	Planet
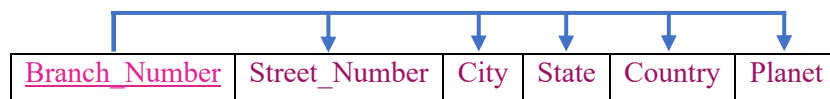
A. The **BRANCH** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **BRANCH** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key Branch_Number.

C. The **BRANCH** relation schema satisfies the 3NF because Branch_Number is the superkey of that table (at least one of the conditions is satisfied).

D. The **BRANCH** relation schema satisfies the BCNF because Branch_Number is the superkey of that table.

13. PARTNER

FD1

Partner_id	Name	City	State	Country	Street_Number	Service	Planet

A. The **PARTNER** relation schema satisfies all conditions of the 1NF because it has neither multivalued attributes nor composite attributes. All attributes are single and atomic.

B. The **PARTNER** relation schema satisfies all conditions of the 2NF because every nonprime attribute is fully functionally dependent on the primary key Partner _id.

C. The **PARTNER** relation schema satisfies the 3NF because Partner_id is the superkey of that table (at least one of the conditions is satisfied).

D. The **PARTNER** relation schema satisfies the BCNF because Partner_id is the superkey of that table.

14. CUSTOMER_PURCHASE_HISTORY

Purchased_Tickets_id	Psprt_id

⇒ The **CUSTOMER_PURCHASE_HISTORY** relation schema only includes its primary key, which consists of Purchase_Ticket_id and Psprt_id. Therefore, this table naturally satisfies the 1NF, 2NF, 3NF, and BCNF.

15. PARTNER_OPERATING_COUNTRIES

Country	Prtnr_id

⇒ The **PARTNER_OPERATING_COUNTRIES** relation schema only includes its primary key, which consists of Purchase_Ticket_id and Psprt_id. Therefore, this table naturally satisfies the 1NF, 2NF, 3NF, and BCNF.

16. RECOMMENDS

Employee_ssn	Psprt_id	Htl_id

⇒ The **RECOMMENDS** relation schema only includes its primary key, which consists of Employee_ssn, Psprt_id, and Htl_id. Therefore, this table naturally satisfies the 1NF, 2NF, 3NF, and BCNF.

17. MANAGES

Employee_ssn	Psprt_id

⇒ The **MANAGES** relation schema only includes its primary key, which consists of Employee_ssn and Psprt_id. Therefore, this table naturally satisfies the 1NF, 2NF, 3NF, and BCNF.

XVII.   <u>References</u>[4]

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[4] References were cited using APA style.