BUS TICKET MANAGEMENT SYSTEM

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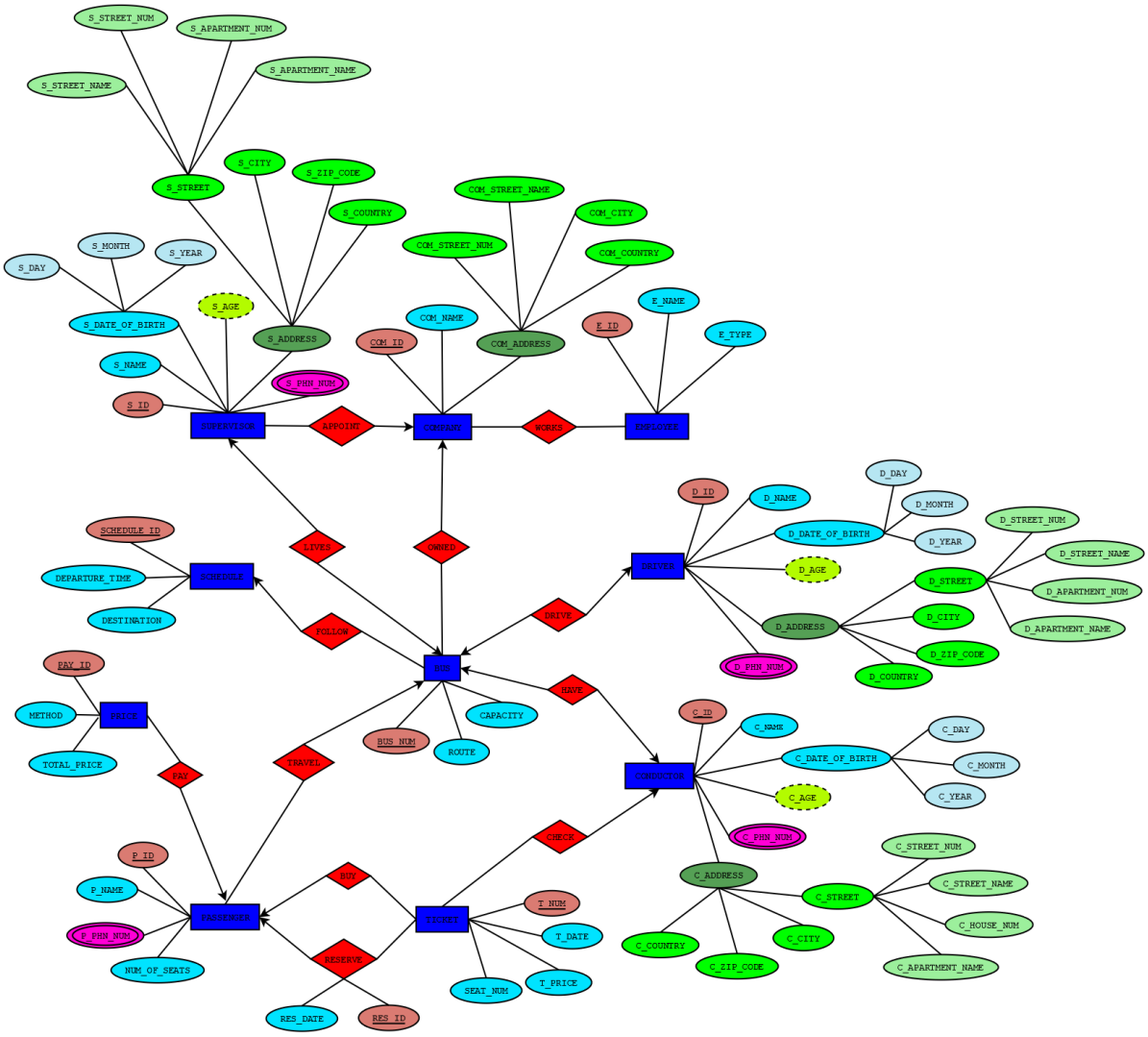
1. Introduction:

The Bus Ticket Management System is a software application designed to manage the ticketing process for any bus ticket management company. The system is designed to automate the process of ticket management. It's developed using a database management system to store and manage data. The system generates reports on daily sales, revenue, and passenger counts for each bus route and helps the company to make informed decisions on their operations. The system is user-friendly and easy to navigate. It's designed to be accessible to both customers and administrators with different levels of technical expertise. This system is a valuable tool for any bus ticket management company looking to streamline their ticketing process, improve customer experience and increase operational efficiency.

2. Scenario Overview:

In a bus ticket management system, A driver drives a bus. A bus is driven by exactly one driver. The driver is identified by a driver ID. The system also stores the driver's name, date of birth, age, address, and phone number. A driver's address is composed of house number, street, city, zip code, country and also the date of birth is composed of day, month, and year. A driver's street is composed of the street number, street name, apartment number, and apartment name. There may be multiple mobile numbers of a driver. A contractor works on a bus. A bus is identified by bus number and the system also stores bus capacity and route. A bus can have only one conductor. A conductor is identified by conductor ID. The system also stores the conductor's name, address, date of birth, and age. A conductor's address is composed of house number, street number, street name, city, zip code, and country and also the date of birth is composed of day, month, and year. A conductor's street is composed of the street number, street name, apartment number, and apartment name. There may be multiple mobile numbers of a conductor. A conductor can check many tickets and a ticket checked by one contractor. A ticket is identified by ticket number. The system also stores the ticket's price, seat number, and date. A passenger can buy and reserve many tickets. One ticket can be reserved for one passenger. For the ticket issue, the reservation date is stored and identified by reservation ID. A ticket can be purchased by one passenger. A passenger is identified by passenger ID. The system also stores the passenger's name, number of seats, and passenger phone number. There may be multiple mobile numbers of a passenger. A passenger can pay for one ticket and many tickets can be paid for by one passenger. It's identified by payment id and the system also stores payment method and total ticket price. A passenger can travel in only one bus, but a bus carries many passengers. A bus follows a schedule, but a schedule has many buses. A schedule is identified by schedule ID. The system stores the departure time and destination. A bus can be owned by only one bus company. A bus company is identified by company ID. And the system also stores the company name and location. A bus company has many buses. A bus has a supervisor. A supervisor lives on one bus. The supervisor is identified by a supervisor ID. The system also stores the supervisor's name, date of birth, age, address, and phone number. A supervisor's address is composed of house number, street, city, zip code, and country; the date of birth is composed of day, month, and year. A supervisor's street is composed of the street number, street name, apartment number, and apartment name. A company's address is composed of street number, street name, city, and country. There may be multiple mobile numbers of a supervisor. A supervisor is appointed in a company. A company appoints many supervisors. A bus company can have many employees and an employee is identified by employee ID. The system also stores employee names and types. An employee works in one company.

3. ER Diagram:


S_STREET_NUM
S_APARTMENT_NUM
S_APARTMENT_NAME
S_STREET_NAME
S_CITY
S_ZIP_CODE
S_STREET
S_COUNTRY
COM_STREET_NAME
COM_CITY
COM_STREET_NUM
COM_COUNTRY
S_MONTH
S_YEAR
S_DAY
S_AGE
E_NAME
S_DATE_OF_BIRTH
S_ADDRESS
COM_NAME
COM_ID
COM_ADDRESS
E_ID
E_TYPE
S_NAME
S_PHN_NUM
S_ID
SUPERVISOR
APPOINT
COMPANY
WORKS
EMPLOYEE
D_ID
D_NAME
D_DAY
D_MONTH
D_STREET_NUM
SCHEDULE_ID
LIVES
OWNED
D_DATE_OF_BIRTH
D_YEAR
D_STREET_NAME
DRIVER
D_AGE
D_STREET
DEPARTURE_TIME
SCHEDULE
D_APARTMENT_NUM
DRIVE
D_CITY
DESTINATION
FOLLOW
D_ADDRESS
D_APARTMENT_NAME
D_PHN_NUM
D_ZIP_CODE
D_COUNTRY
PAY_ID
BUS
HAVE
METHOD
PRICE
CAPACITY
C_ID
C_NAME
BUS_NUM
ROUTE
C_DAY
TOTAL_PRICE
TRAVEL
C_DATE_OF_BIRTH
C_MONTH
CONDUCTOR
PAY
C_AGE
C_YEAR
C_PHN_NUM
CHECK
P_ID
C_STREET_NUM
C_ADDRESS
BUY
P_NAME
C_STREET_NAME
C_STREET
T_NUM
TICKET
C_HOUSE_NUM
P_PHN_NUM
T_DATE
C_COUNTRY
C_CITY
PASSENGER
RESERVE
NUM_OF_SEATS
C_ZIP_CODE
C_APARTMENT_NAME
SEAT_NUM
T_PRICE
RES_DATE
RES_ID

4. Normalization:

Drive

UNF:

DRIVE (BUS_NUM, ROUTE, CAPACITY, D_ID, D_NAME, D_DAY, D_MONTH, D_YEAR, D_STREET_NUM, D_STREET_NAME, D_APARTMENT_NUM, D_APARTMENT_NAME, D_CITY, D_ZIP_CODE, D_COUNTRY, D_PHN_NUM)

1NF:

D_PHN_NUM is a multivalued attribute.

BUS_NUM, ROUTE, CAPACITY, D_ID, D_NAME, D_DAY, D_MONTH, D_YEAR, D_STREET_NUM, D_STREET_NAME, D_APARTMENT_NUM, D_APARTMENT_NAME, D_CITY, D_ZIP_CODE, D_COUNTRY, D_PHN_NUM

2NF:

1. BUS_NUM, ROUTE, CAPACITY
2. D_ID, D_NAME, D_DAY, D_MONTH, D_YEAR, D_STREET_NUM, D_STREET_NAME, D_APARTMENT_NUM, D_APARTMENT_NAME, D_CITY, D_ZIP_CODE, D_COUNTRY, D_PHN_NUM

3NF:

1. BUS_NUM, ROUTE, CAPACITY
2. D_ID, D_NAME, D_PHN_NUM
3. D_DAY, D_MONTH, D_YEAR
4. D_STREET_NUM, D_STREET_NAME, D_APARTMENT_NUM, D_APARTMENT_NAME, D_CITY, D_ZIP_CODE, D_COUNTRY

Table Creation:

1. BUS_NUM, ROUTE, CAPACITY
2. D_ID, D_NAME, D_PHN_NUM, **BUS_NUM, D_DOB_ID, D_ADDRESS_ID**
3. D_DOB_ID, D_DAY, D_MONTH, D_YEAR
4. D_ADDRESS ID, D_STREET_NUM, D_STREET_NAME, D_APARTMENT_NUM, D_APARTMENT_NAME, D_CITY, D_ZIP_CODE, D_COUNTRY

HAVE

UNF:

HAVE (BUS_NUM, ROUTE, CAPACITY, C_ID, C_NAME, C_DAY, C_MONTH, C_YEAR, C_PHN_NUM, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, D_CITY, C_ZIP_CODE, C_COUNTRY)

1NF:

C_PHN_NUM is a multivalued attribute.

1. BUS_NUM, ROUTE, CAPACITY, C_ID, C_NAME, C_DAY, C_MONTH, C_YEAR, C_PHN_NUM, C_ID, C_NAME, C_AGE, C_PHN_NUM, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY

2NF:

1. BUS_NUM, ROUTE, CAPACITY
2. C_ID, C_NAME, C_AGE, C_PHN_NUM, C_ID, C_NAME, C_DAY, C_MONTH, C_YEAR, C_PHN_NUM, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY

3NF:

1. BUS_NUM, ROUTE, CAPACITY
2. C_ID, C_NAME, C_PHN_NUM
3. C_DAY, C_MONTH, C_YEAR
4. C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY

TABLE CREATION:

1. BUS_NUM, ROUTE, CAPACITY
2. C_ID, C_NAME, C_PHN_NUM, **BUS_NUM, C_DOB_ID**, **C_ADDRESS_ID**
3. C_DOB_ID, C_DAY, C_MONTH, C_YEAR
4. C_ADDRESS_ID, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY

CHECK

UNF:

CHECK (C_ID, C_NAME, C_DAY, C_MONTH, C_YEAR, C_PHN_NUM, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY, T_NUM, T_DATE, T_PRICE, SEAT_NUM)

1NF:

C_PHN_NUM is a multivalued attribute.

1. C_ID, C_NAME, C_DAY, C_MONTH, C_YEAR, C_PHN_NUM, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY, T_NUM, T_DATE, T_PRICE, SEAT_NUM

2NF:

1. C_ID, C_NAME, C_DAY, C_MONTH, C_YEAR, C_PHN_NUM, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY
2. T_NUM, T_DATE, T_PRICE, SEAT_NUM

3NF:

1. C_ID, C_NAME, C_PHN_NUM
2. C_DAY, C_MONTH, C_YEAR
3. C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY
4. T_NUM, T_DATE, T_PRICE, SEAT_NUM

Table Creation:

1. C_ID, C_NAME, C_AGE, C_PHN_NUM, **C_DOB_ID, C_ADDRESS_ID**
2. C_DOB_ID, C_DAY, C_MONTH, C_YEAR
3. C_ADDRESS_ID, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY
4. T_NUM, T_DATE, T_PRICE, SEAT_NUM, **C_ID**

BUY

UNF:

BUY (T_NUM, T_DATE, SEAT_NUM, T_PRICE, P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS)

1NF:

P_PHN_NUM is a multivalued attribute.

1. T_NUM, T_DATE, T_PRICE, SEAT_NUM, P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS

2NF:

1. T_NUM, T_DATE, T_PRICE, SEAT_NUM
2. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS

3NF:

There is no transitive relationship. Relation already in 3NF.

1. T_NUM, T_DATE, T_PRICE, SEAT_NUM
2. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS

Table Create:

1. T_NUM, T_DATE, T_PRICE, SEAT_NUM, **P_ID**
2. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS

RESERVE

UNF:

RESERVE (T_NUM, T_DATE, T_PRICE, SEAT_NUM, P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS, RES_ID, RES_DATE)

1NF:

P_PHN_NUM is a multivalued attribute.

1. T_NUM, T_DATE, T_PRICE, SEAT_NUM, P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS, RES_ID, RES_DATE

2NF:

1. T_NUM, T_DATE, T_PRICE, SEAT_NUM
2. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS
3. RES_ID, RES_DATE

3NF:

There is no transitive relationship. Relation already in 3NF.

1. T_NUM, T_DATE, T_PRICE, SEAT_NUM
2. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS
3. RES_ID, RES_DATE

Table Creation:

1. T_NUM, T_DATE, T_PRICE, SEAT_NUM, RES_ID, RES_DATE**, P_ID**
2. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS

PAY

UNF:

PAY (P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS, PAY_ID, METHOD, TOTAL_PRICE)

1NF:

P_PHN_NUM is a multivalued attribute.

1. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS, PAY_ID, METHOD, TOTAL_PRICE

2NF:

1. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS
2. PAY_ID, METHOD, TOTAL_PRICE

3NF:

There is no transitive relationship. It's already 3NF.

1. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS
2. PAY_ID, METHOD, TOTAL_PRICE

Table Creation:

1. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS
2. PAY_ID, METHOD, TOTAL_PRICE, **P_ID**

TRAVEL

UNF:

TRAVEL (P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS, BUS_NUM, ROUTE, CAPACITY)

1NF:

P_PHN_NUM is a multivalued attribute.

1. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS, BUS_NUM, ROUTE, CAPACITY

2NF:

1. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS
2. BUS_NUM, ROUTE, CAPACITY

3NF:

1. P_ID, P_NAME, P_PHN_NUM
2. NUM_OF_SEATS
3. BUS_NUM, ROUTE, CAPACITY

Table Creation:

1. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS, **BUS_NUM**
2. BUS_NUM, ROUTE, CAPACITY

FOLLOWS

UNF:

FOLLOWS (BUS_NUM, ROUTE, CAPACITY, SCHEDULE_ID, DEPATURE_TIME, DESTINATION)

1NF:

There is no multivalued attribute.

1. BUS_NUM, ROUTE, CAPACITY, SCHEDULE_ID, DEPATURE_TIME, DESTINATION

2NF:

1. BUS_NUM, ROUTE, CAPACITY
2. SCHEDULE_ID, DEPATURE_TIME, DESTINATION

3NF:

There is no transitive relationship. Relation already in 3NF.

1. BUS_NUM, ROUTE, CAPACITY
2. SCHEDULE_ID, DEPATURE_TIME, DESTINATION

Table Creation:

1. BUS_NUM, ROUTE, CAPACITY, **SCHEDULE_ID**
2. SCHEDULE_ID, DEPATURE_TIME, DESTINATION

LIVES

UNF:

LIVES (BUS_NUM, ROUTE, CAPACITY, S_ID, S_NAME, S_DAY, S_MONTH, S_YEAR, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY, S_PHN_NUM)

1NF:

S_PHN_NUM is a multivalued attribute.

1. BUS_NUM, ROUTE, CAPACITY, S_ID, S_NAME, S_DAY, S_MONTH, S_YEAR, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY, S_PHN_NUM

2NF:

1. BUS_NUM, ROUTE, CAPACITY
2. S_ID, S_NAME, S_DAY, S_MONTH, S_YEAR, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY, S_PHN_NUM

3NF:

1. BUS_NUM, ROUTE, CAPACITY
2. S_ID, S_NAME, S_PHN_NUM
3. S_DAY, S_MONTH, S_YEAR
4. S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY

Table Creation:

1. BUS_NUM, ROUTE, CAPACITY
2. S_ID, S_NAME, S_PHN_NUM, **S_DOB_ID**, **S_ADDRESS_ID, BUS_NUM**
3. S_DOB_ID, S_DAY, S_MONTH, S_YEAR
4. S_ADDRESS_ID, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY

APPOINT

UNF:

APPOINT (S_ID, S_NAME, S_DAY, S_MONTH, S_YEAR, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY, S_PHN_NUM, COM_ID, COM_NAME, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY)

1NF:

S_PHN_NUM is a multivalued attribute.

1. S_ID, S_NAME, S_DAY, S_MONTH, S_YEAR, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY, S_PHN_NUM, COM_ID, COM_NAME, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY

2NF:

1. S_ID, S_NAME, S_DAY, S_MONTH, S_YEAR, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY, S_PHN_NUM
2. COM_ID, COM_NAME, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY

3NF:

1. S_ID, S_NAME, S_PHN_NUM
2. S_DAY, S_MONTH, S_YEAR
3. S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY
4. COM_ID, COM_NAME
5. COM_ADDRESS_ID, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY

Table Creation:

1. S_ID, S_NAME, S_PHN_NUM, **S_ADDRESS_ID, S_DOB_ID, COM_ID**
2. S_DOB_ID, S_DAY, S_MONTH, S_YEAR
3. S_ADDRESS_ID, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY
4. COM_ID, COM_NAME, **COM_ADDRESS_ID**
5. COM_ADDRESS_ID, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY

OWNED

UNF:

OWNED (BUS_NUM, ROUTE, CAPACITY, COM_ID, COM_NAME, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY)

1NF:

There is no multivalued attribute.

1. BUS_NUM, ROUTE, CAPACITY
2. COM_ID, COM_NAME, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY

2NF:

1. BUS_NUM, ROUTE, CAPACITY
2. COM_ID, COM_NAME, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY

3NF:

1. BUS_NUM, ROUTE, CAPACITY
2. COM_ID, COM_NAME
3. COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY

Table Creation:

1. BUS_NUM, ROUTE, CAPACITY, **COM_ID**
2. COM_ID, COM_NAME, **COM_ADDRESS_ID**
3. COM_ADDRESS_ID, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY

WORKS

UNF:

WORKS (COM_ID, COM_NAME, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY, E_ID, E_NAME)

1NF:

1. COM_ID, COM_NAME, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY, E_ID, E_NAME

2NF:

1. COM_ID, COM_NAME, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY
2. E_ID, E_NAME

3NF:

1. COM_ID, COM_NAME
2. COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY E_ID, E_NAME

Table Creation:

1. COM_ID, COM_NAME, **COM_ADDRESS_ID**
2. COM_ADDRESS_ID, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY
3. E_ID, E_NAME, E_TYPE
4. **COM_ID, E_ID**

Temporary Table:

1. ~~BUS_NUM, ROUTE, CAPACITY~~
2. D_ID, D_NAME, D_PHN_NUM, **BUS_NUM, D_DOB_ID, D_ADDRESS_ID**
3. D_DOB_ID, D_DAY, D_MONTH, D_YEAR
4. D_ADDRESS ID, D_STREET_NUM, D_STREET_NAME, D_APARTMENT_NUM, D_APARTMENT_NAME, D_CITY, D_ZIP_CODE, D_COUNTRY
5. ~~BUS_NUM, ROUTE, CAPACITY~~
6. C_ID, C_NAME, C_PHN_NUM, **BUS_NUM, C_DOB_ID**, **C_ADDRESS_ID**
7. C_DOB_ID, C_DAY, C_MONTH, C_YEAR
8. C_ADDRESS_ID, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY
9. ~~C_ID, C_NAME, C_AGE, C_PHN_NUM, **C_DOB_ID, C_ADDRESS_ID**~~
10. ~~C_DOB_ID, C_DAY, C_MONTH, C_YEAR~~
11. ~~C_ADDRESS_ID, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY~~
12. T_NUM, T_DATE, T_PRICE, SEAT_NUM, **C_ID**
13. T_NUM, T_DATE, T_PRICE, SEAT_NUM, **P_ID**
14. ~~P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS~~
15. T_NUM, T_DATE, T_PRICE, SEAT_NUM, RES_ID, RES_DATE**, P_ID**
16. ~~P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS~~
17. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS, **BUS_NUM**
18. ~~P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS~~
19. PAY_ID, METHOD, TOTAL_PRICE, **P_ID**
20. ~~BUS_NUM, ROUTE, CAPACITY~~
21. BUS_NUM, ROUTE, CAPACITY, **SCHEDULE_ID**
22. SCHEDULE_ID, DEPATURE_TIME, DESTINATION
23. ~~BUS_NUM, ROUTE, CAPACITY~~
24. S_ID, S_NAME, S_PHN_NUM, **S_DOB_ID**, **S_ADDRESS_ID, BUS_NUM**
25. S_DOB_ID, S_DAY, S_MONTH, S_YEAR
26. S_ADDRESS_ID, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY
27. S_ID, S_NAME, S_PHN_NUM, **S_ADDRESS_ID, S_DOB_ID, COM_ID**
28. ~~S_DOB_ID, S_DAY, S_MONTH, S_YEAR~~
29. ~~S_ADDRESS_ID, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY~~
30. COM_ID, COM_NAME, **COM_ADDRESS_ID**
31. COM_ADDRESS_ID, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY
32. BUS_NUM, ROUTE, CAPACITY, **COM_ID**
33. ~~COM_ID, COM_NAME, **COM_ADDRESS_ID**~~
34. ~~COM_ADDRESS_ID, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY~~
35. ~~COM_ID, COM_NAME, **COM_ADDRESS_ID**~~
36. ~~COM_ADDRESS_ID, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY~~
37. E_ID, E_NAME, E_TYPE
38. **COM_ID, E_ID**

FINAL TABLE:

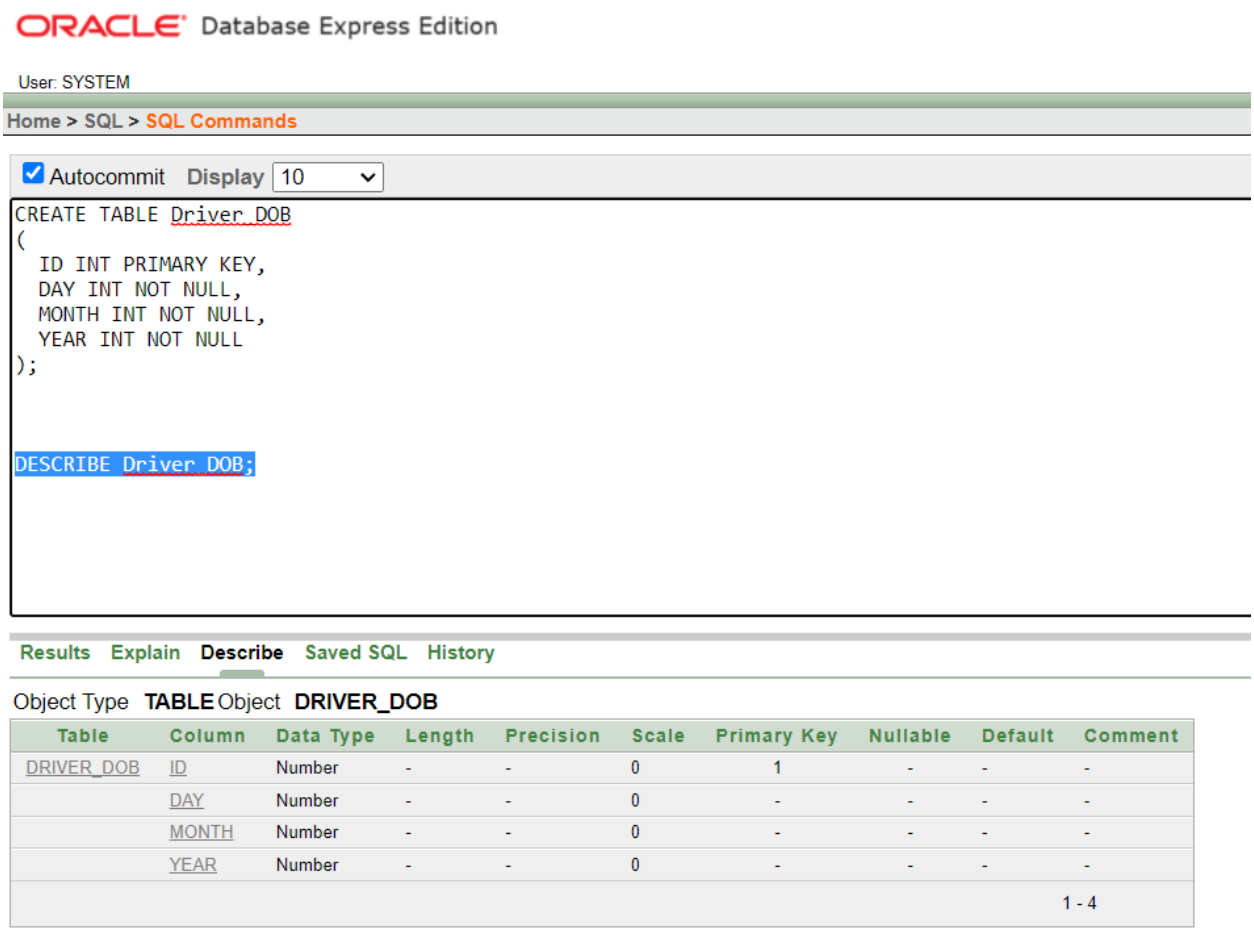
1. D_ID, D_NAME, D_PHN_NUM1, D_PHN_NUM2, **BUS_NUM, D_DOB_ID, D_ADDRESS_ID**
2. D_DOB_ID, D_DAY, D_MONTH, D_YEAR
3. D_ADDRESS ID, D_STREET_NUM, D_STREET_NAME, D_APARTMENT_NUM, D_APARTMENT_NAME, D_CITY, D_ZIP_CODE, D_COUNTRY
4. C_ID, C_NAME, C_PHN_NUM1, C_PHN_NUM2, **BUS_NUM, C_DOB_ID**, **C_ADDRESS_ID**
5. C_DOB_ID, C_DAY, C_MONTH, C_YEAR
6. C_ADDRESS_ID, C_STREET_NUM, C_STREET_NAME, C_APARTMENT_NUM, C_APARTMENT_NAME, C_CITY, C_ZIP_CODE, C_COUNTRY
7. T_NUM, T_DATE, T_PRICE, SEAT_NUM, RES_ID, RES_DATE**, C_ID, P_ID**
8. P_ID, P_NAME, P_PHN_NUM, NUM_OF_SEATS, **BUS_NUM**
9. PAY_ID, METHOD, TOTAL_PRICE, **P_ID**
10. BUS_NUM, ROUTE, CAPACITY, **SCHEDULE_ID, COM_ID**
11. SCHEDULE_ID, DEPATURE_TIME, DESTINATION
12. S_ID, S_NAME, S_PHN_NUM1, S_PHN_NUM2, **S_DOB_ID**, **S_ADDRESS_ID, BUS_NUM**
13. S_DOB_ID, S_DAY, S_MONTH, S_YEAR
14. S_ADDRESS_ID, S_STREET_NUM, S_STREET_NAME, S_APARTMENT_NUM, S_APARTMENT_NAME, S_CITY, S_ZIP_CODE, S_COUNTRY
15. COM_ID, COM_NAME, **COM_ADDRESS_ID**
16. COM_ADDRESS_ID, COM_STREET_NUM, COM_STREET_NAME, COM_CITY, COM_COUNTRY
17. E_ID, E_NAME, E_TYPE
18. **COM_ID, E_ID**

5. Schema Diagram:

6. SQL Queries and Operation:

a) Creating Table:

i.
```
CREATE TABLE Driver_DOB
(
        ID INT PRIMARY KEY,
        DAY INT NOT NULL,
        MONTH INT NOT NULL,
        YEAR INT NOT NULL
);
```



ii. CREATE TABLE Driver_Address
(
ID INT PRIMARY KEY,
STREET_NUM NUMBER(5) NOT NULL,
STREET_NAME VARCHAR2(50) NOT NULL,
APARTMENT_NUM NUMBER(5) NOT NULL,
APARTMENT_NAME VARCHAR2(50) NOT NULL,
CITY VARCHAR2(50) NOT NULL,
ZIP_CODE VARCHAR2(10) NOT NULL,
COUNTRY VARCHAR2(50) NOT NULL
);

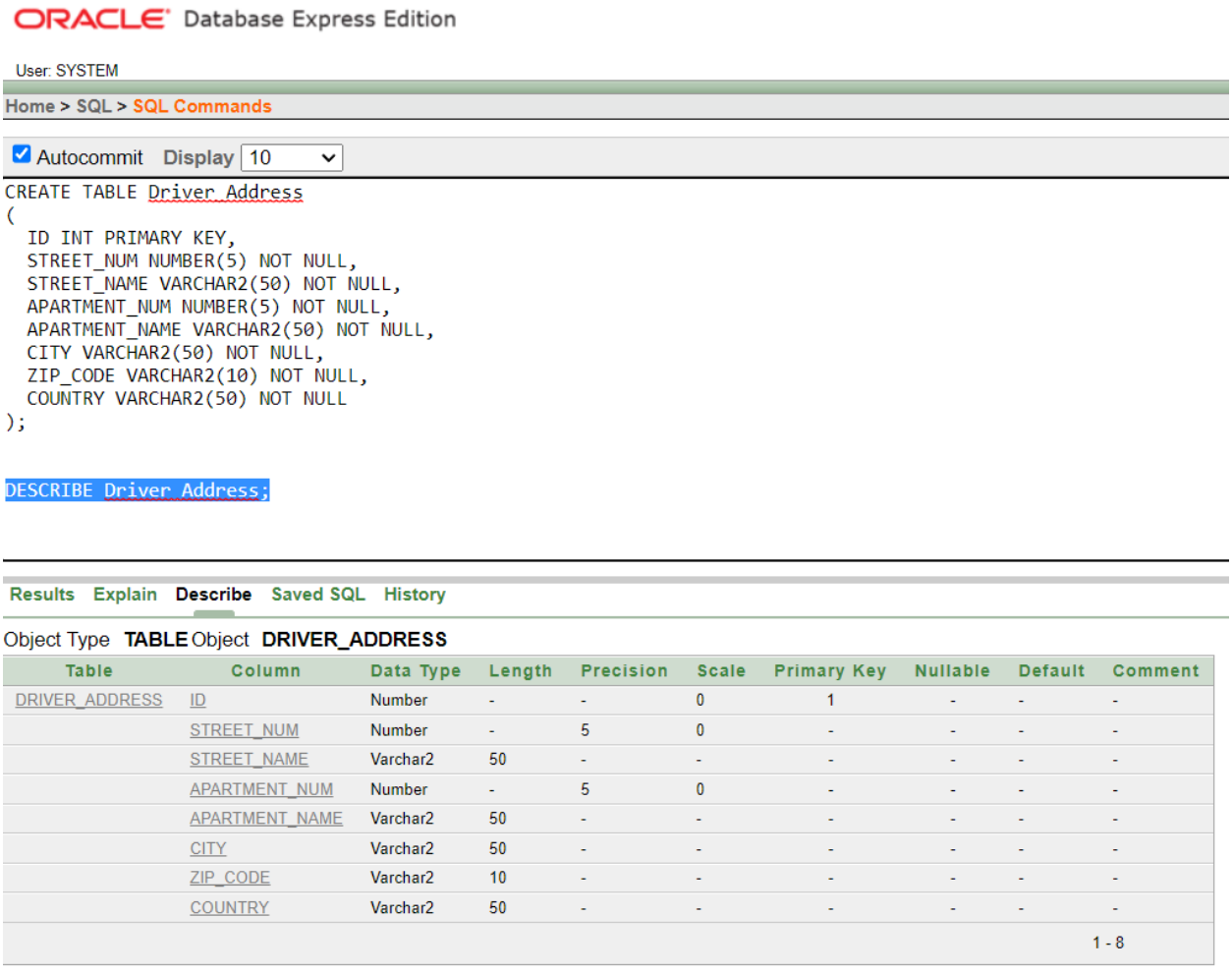


Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DRIVER_ADDRESS	ID	Number	-	-	0	1	-	-	-
	STREET_NUM	Number	-	5	0	-	-	-	-
	STREET_NAME	Varchar2	50	-	-	-	-	-	-
	APARTMENT_NUM	Number	-	5	0	-	-	-	-
	APARTMENT_NAME	Varchar2	50	-	-	-	-	-	-
	CITY	Varchar2	50	-	-	-	-	-	-
	ZIP_CODE	Varchar2	10	-	-	-	-	-	-
	COUNTRY	Varchar2	50	-	-	-	-	-	-

1 - 8

iii. CREATE TABLE Conductor_DOB
(
ID INT PRIMARY KEY,
DAY NUMBER(2) NOT NULL,
MONTH NUMBER(2) NOT NULL,
YEAR NUMBER(4) NOT NULL
);

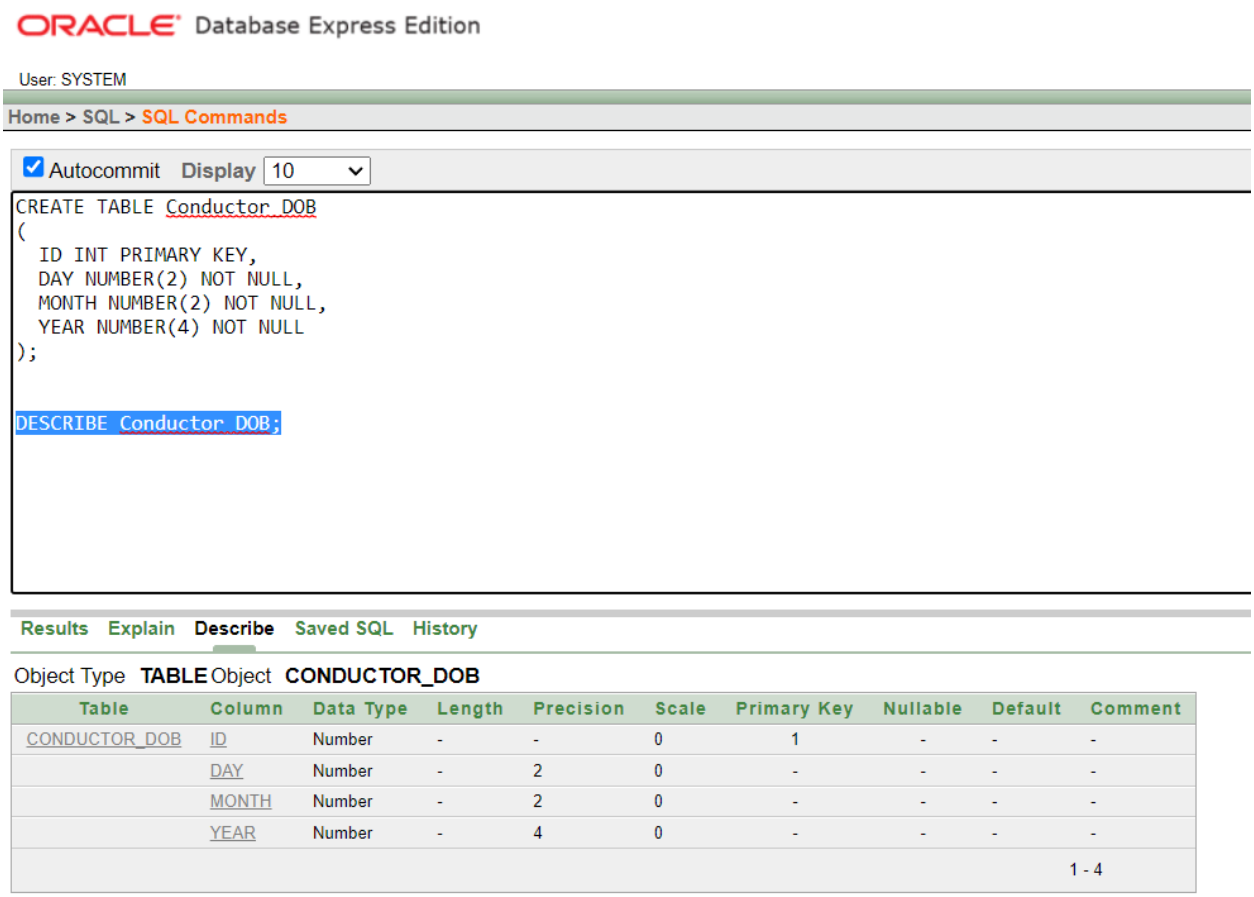
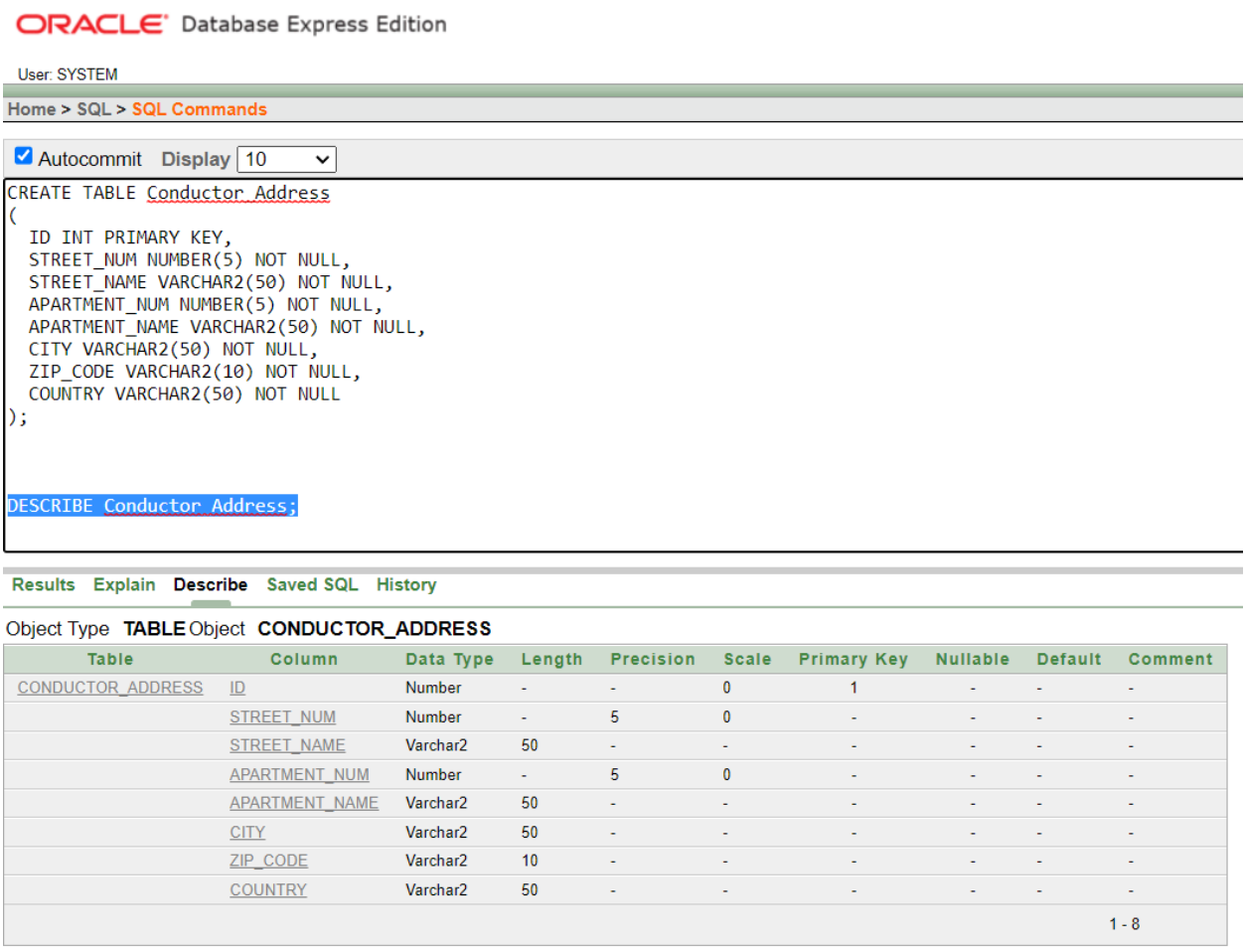


Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CONDUCTOR_DOB	ID	Number	-	-	0	1	-	-	-
	DAY	Number	-	2	0	-	-	-	-
	MONTH	Number	-	2	0	-	-	-	-
	YEAR	Number	-	4	0	-	-	-	-

1 - 4

iv. CREATE TABLE Conductor_Address
(
ID INT PRIMARY KEY,
STREET_NUM NUMBER(5) NOT NULL,
STREET_NAME VARCHAR2(50) NOT NULL,
APARTMENT_NUM NUMBER(5) NOT NULL,
APARTMENT_NAME VARCHAR2(50) NOT NULL,
CITY VARCHAR2(50) NOT NULL,
ZIP_CODE VARCHAR2(10) NOT NULL,
COUNTRY VARCHAR2(50) NOT NULL
);



v. CREATE TABLE Supervisor_DOB
(
ID INT PRIMARY KEY,
DAY NUMBER(2) NOT NULL,
MONTH NUMBER(2) NOT NULL,
YEAR NUMBER(4) NOT NULL
);

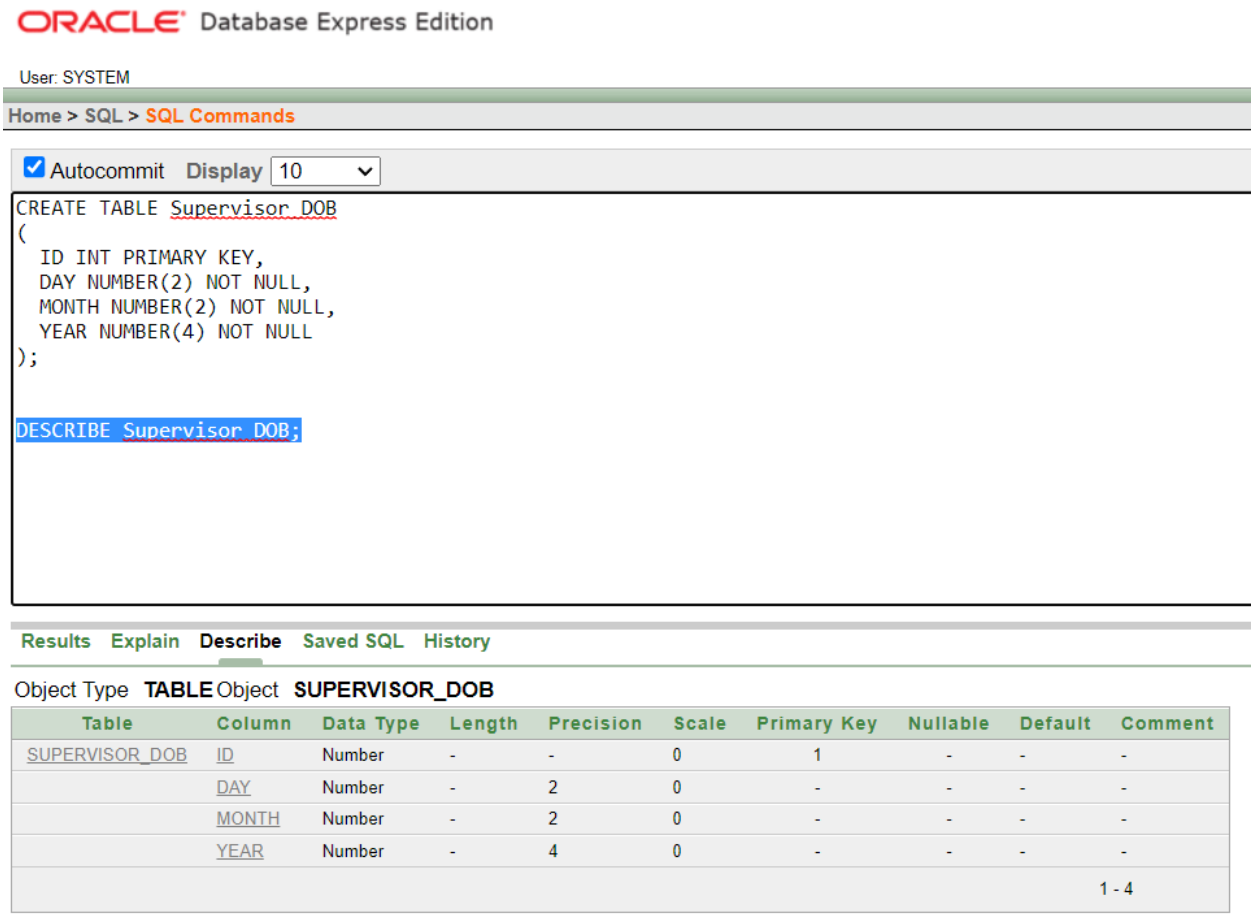


Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
SUPERVISOR_DOB	ID	Number	-	-	0	1	-	-	-
	DAY	Number	-	2	0	-	-	-	-
	MONTH	Number	-	2	0	-	-	-	-
	YEAR	Number	-	4	0	-	-	-	-

1 - 4

vi. CREATE TABLE Supervisor_Address
(
ID INT PRIMARY KEY,
STREET_NUM NUMBER(5) NOT NULL,
STREET_NAME VARCHAR2(20) NOT NULL,
APARTMENT_NUM NUMBER(5) NOT NULL,
APARTMENT_NAME VARCHAR2(30) NOT NULL,
CITY VARCHAR2(50) NOT NULL,
ZIP_CODE VARCHAR2(10) NOT NULL,
COUNTRY VARCHAR2(50) NOT NULL
);

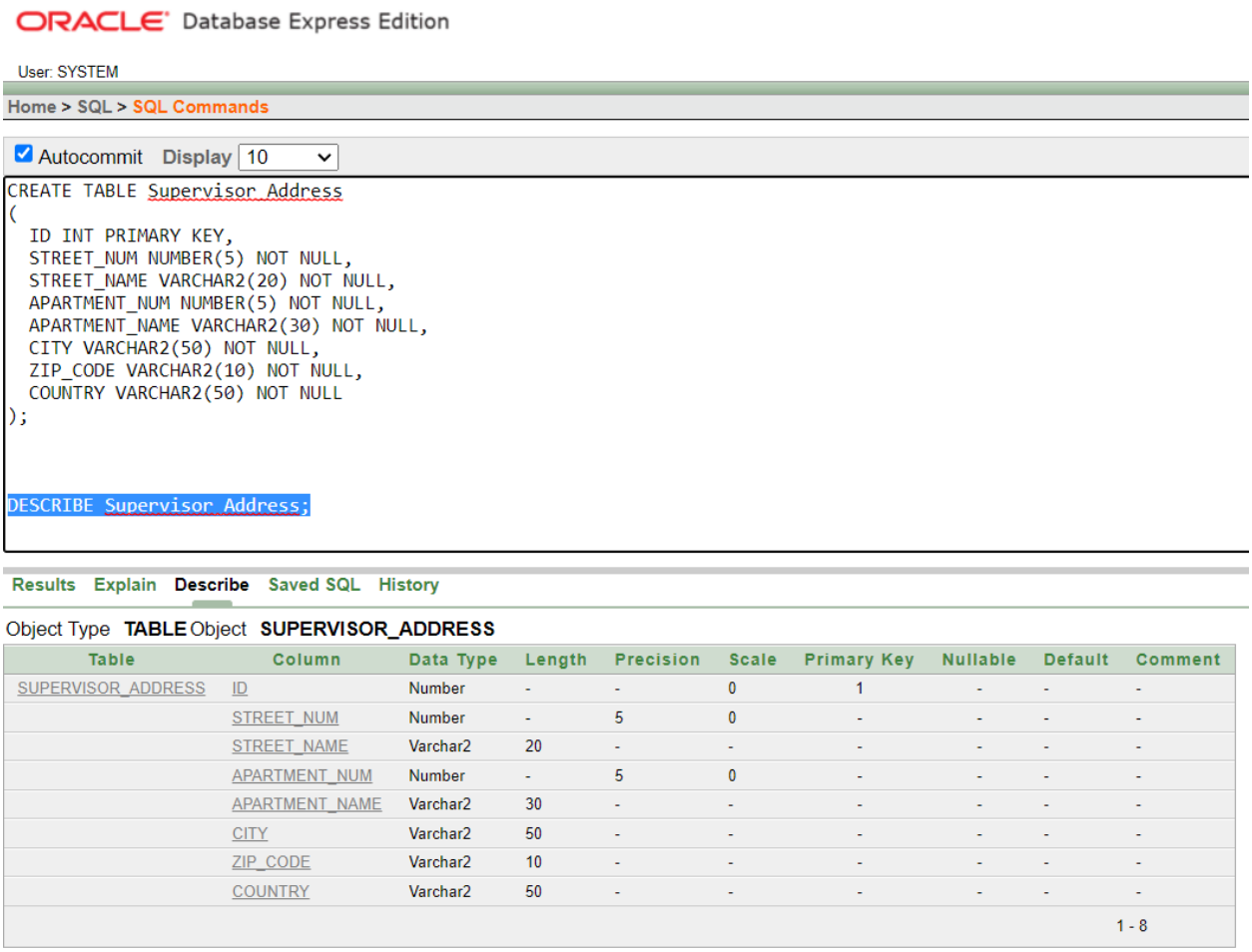


Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
SUPERVISOR_ADDRESS	ID	Number	-	-	0	1	-	-	-
	STREET_NUM	Number	-	5	0	-	-	-	-
	STREET_NAME	Varchar2	20	-	-	-	-	-	-
	APARTMENT_NUM	Number	-	5	0	-	-	-	-
	APARTMENT_NAME	Varchar2	30	-	-	-	-	-	-
	CITY	Varchar2	50	-	-	-	-	-	-
	ZIP_CODE	Varchar2	10	-	-	-	-	-	-
	COUNTRY	Varchar2	50	-	-	-	-	-	-

1 - 8

vii. CREATE TABLE Company_Address
(
ID INT PRIMARY KEY,
STREET_NUM NUMBER(5) NOT NULL,
STREET_NAME vARCHAR2(20) NOT NULL,
CITY VARCHAR2(50) NOT NULL,
COUNTRY VARCHAR2(50) NOT NULL
);

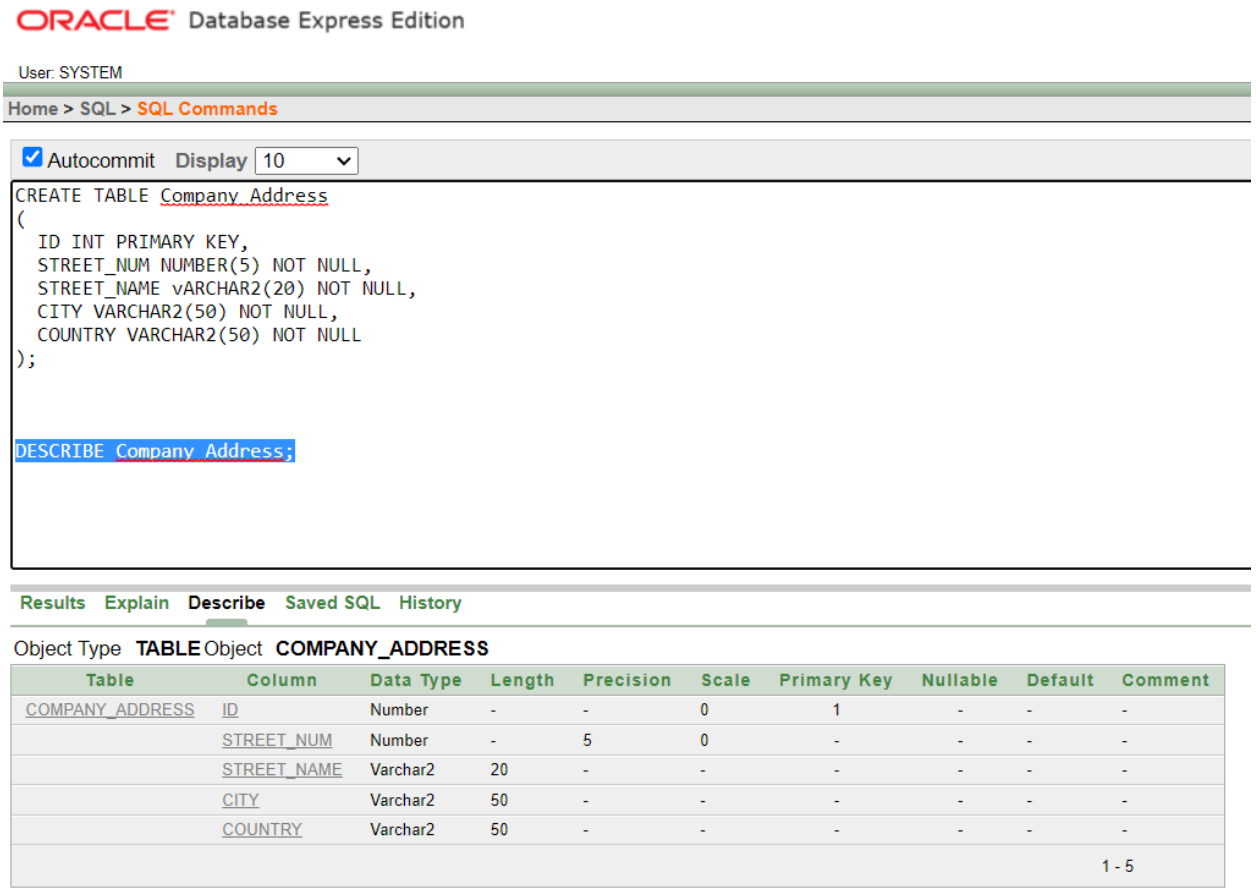
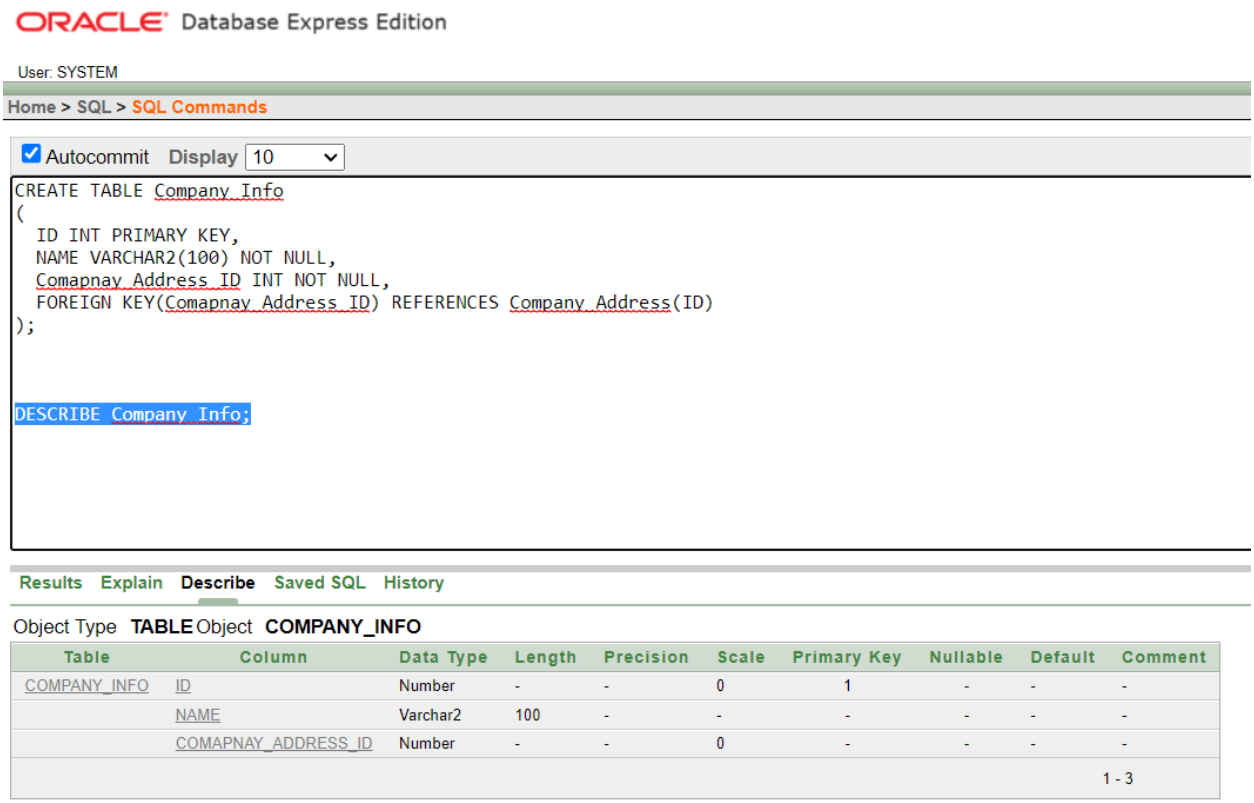


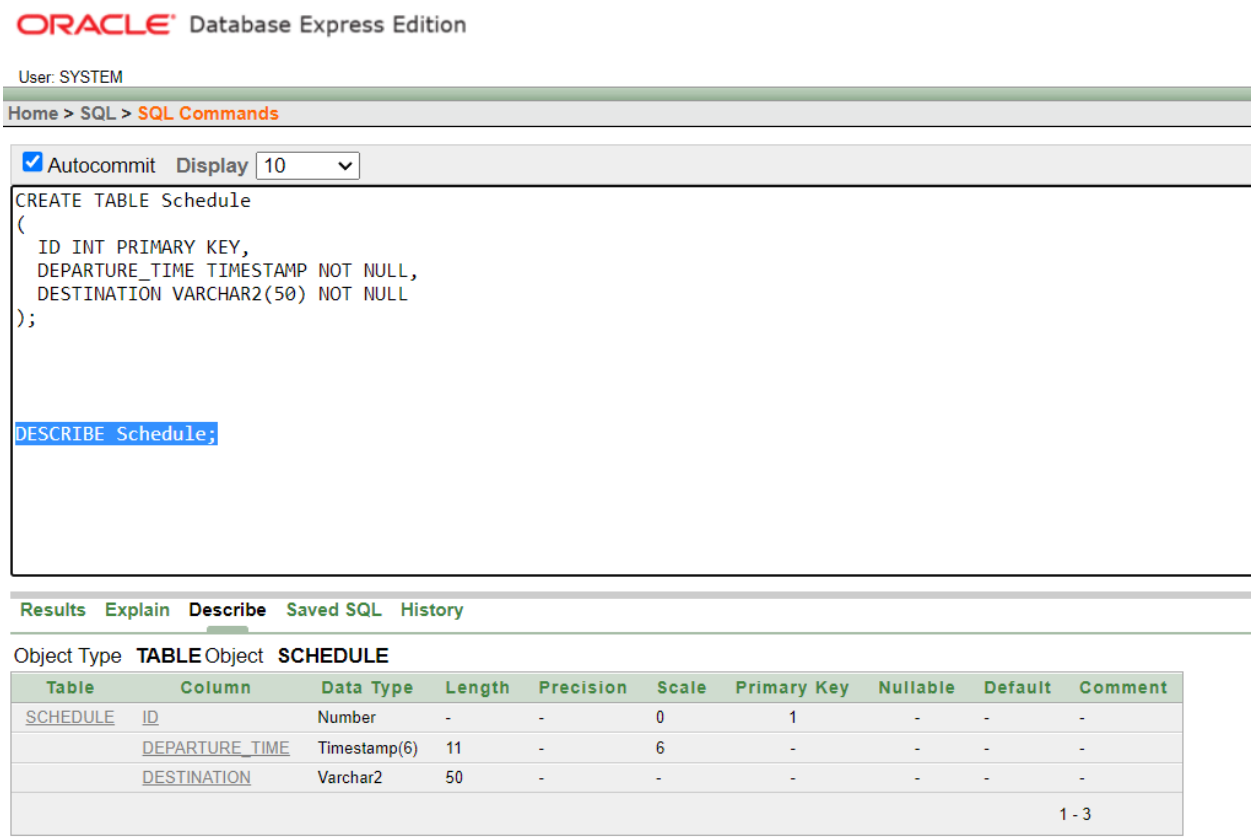
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
COMPANY_ADDRESS	ID	Number	-	-	0	1	-	-	-
	STREET_NUM	Number	-	5	0	-	-	-	-
	STREET_NAME	Varchar2	20	-	-	-	-	-	-
	CITY	Varchar2	50	-	-	-	-	-	-
	COUNTRY	Varchar2	50	-	-	-	-	-	-

1 - 5

viii. CREATE TABLE Company_Info
(
ID INT PRIMARY KEY,
NAME VARCHAR2(100) NOT NULL,
Comapnay_Address_ID INT NOT NULL,
FOREIGN KEY(Comapnay_Address_ID) REFERENCES Company_Address(ID)
);



ix. CREATE TABLE Schedule
(
ID INT PRIMARY KEY,
DEPARTURE_TIME TIMESTAMP NOT NULL,
DESTINATION VARCHAR2(50) NOT NULL
);



x. CREATE TABLE Bus_Info
(
BUS_NUM INT PRIMARY KEY,
ROUTE VARCHAR2(50) NOT NULL,
CAPACITY NUMBER(3) NOT NULL,
Schedule_ID INT NOT NULL,
Compnay_ID INT NOT NULL,
FOREIGN KEY(Schedule_ID) REFERENCES Schedule(ID),
FOREIGN KEY(Compnay_ID) REFERENCES Company_Info(ID)
);

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```
CREATE TABLE Bus_Info
(
  BUS_NUM INT PRIMARY KEY,
  ROUTE VARCHAR2(50) NOT NULL,
  CAPACITY NUMBER(3) NOT NULL,
  Schedule_ID INT NOT NULL,
  Compnay_ID INT NOT NULL,
  FOREIGN KEY(Schedule_ID) REFERENCES Schedule(ID),
  FOREIGN KEY(Compnay_ID) REFERENCES Company_Info(ID)
);


DESCRIBE Bus_Info;
```

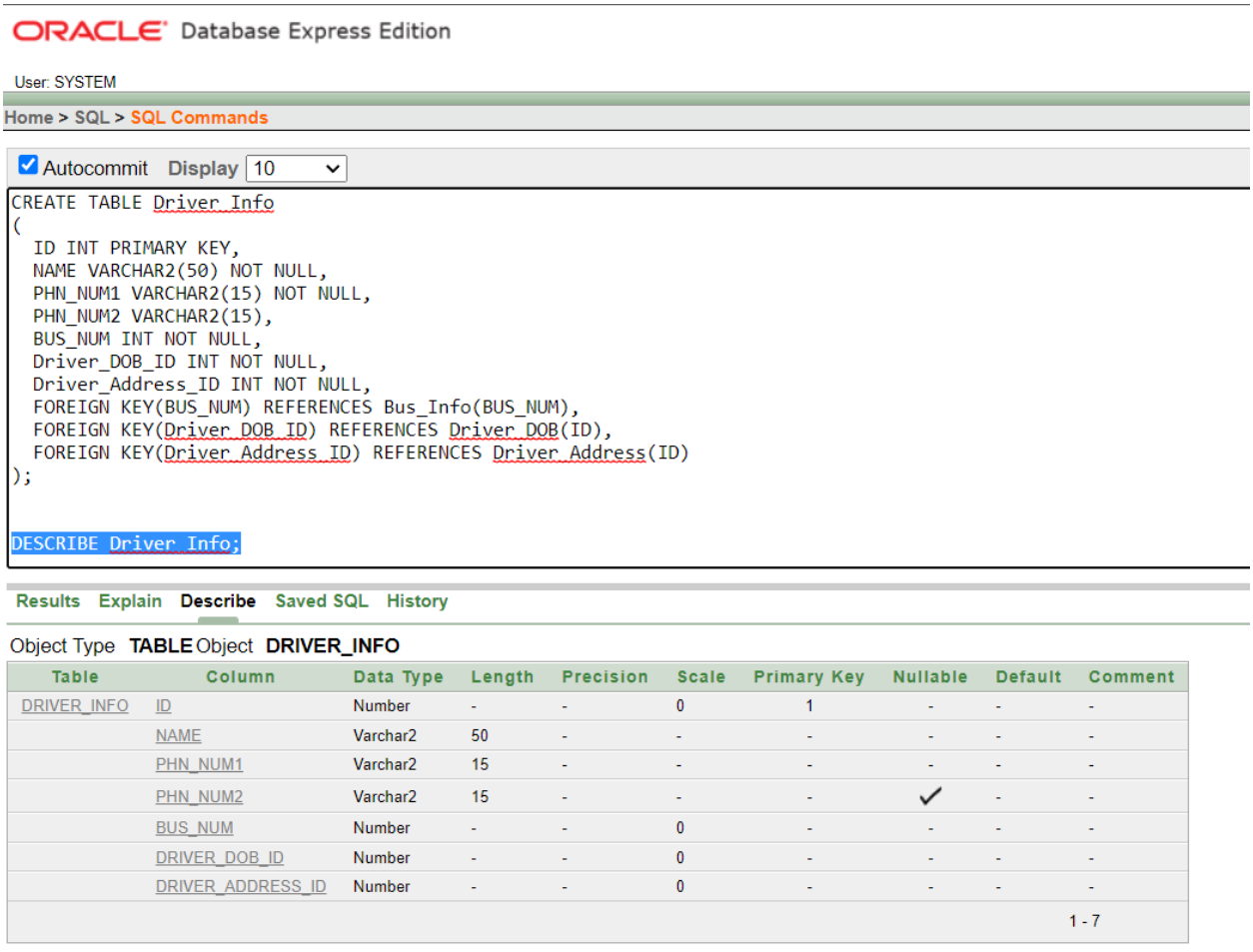
Results Explain Describe Saved SQL History

Object Type **TABLE** Object **BUS_INFO**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
BUS_INFO	BUS_NUM	Number	-	-	0	1	-	-	-
	ROUTE	Varchar2	50	-	-	-	-	-	-
	CAPACITY	Number	-	3	0	-	-	-	-
	SCHEDULE_ID	Number	-	-	0	-	-	-	-
	COMPNAY_ID	Number	-	-	0	-	-	-	-

1 - 5

xi. CREATE TABLE Driver_Info
(
ID INT PRIMARY KEY,
NAME VARCHAR2(50) NOT NULL,
PHN_NUM1 VARCHAR2(15) NOT NULL,
PHN_NUM2 VARCHAR2(15),
BUS_NUM INT NOT NULL,
Driver_DOB_ID INT NOT NULL,
Driver_Address_ID INT NOT NULL,
FOREIGN KEY(BUS_NUM) REFERENCES Bus_Info(BUS_NUM),
FOREIGN KEY(Driver_DOB_ID) REFERENCES Driver_DOB(ID),
FOREIGN KEY(Driver_Address_ID) REFERENCES Driver_Address(ID)
);

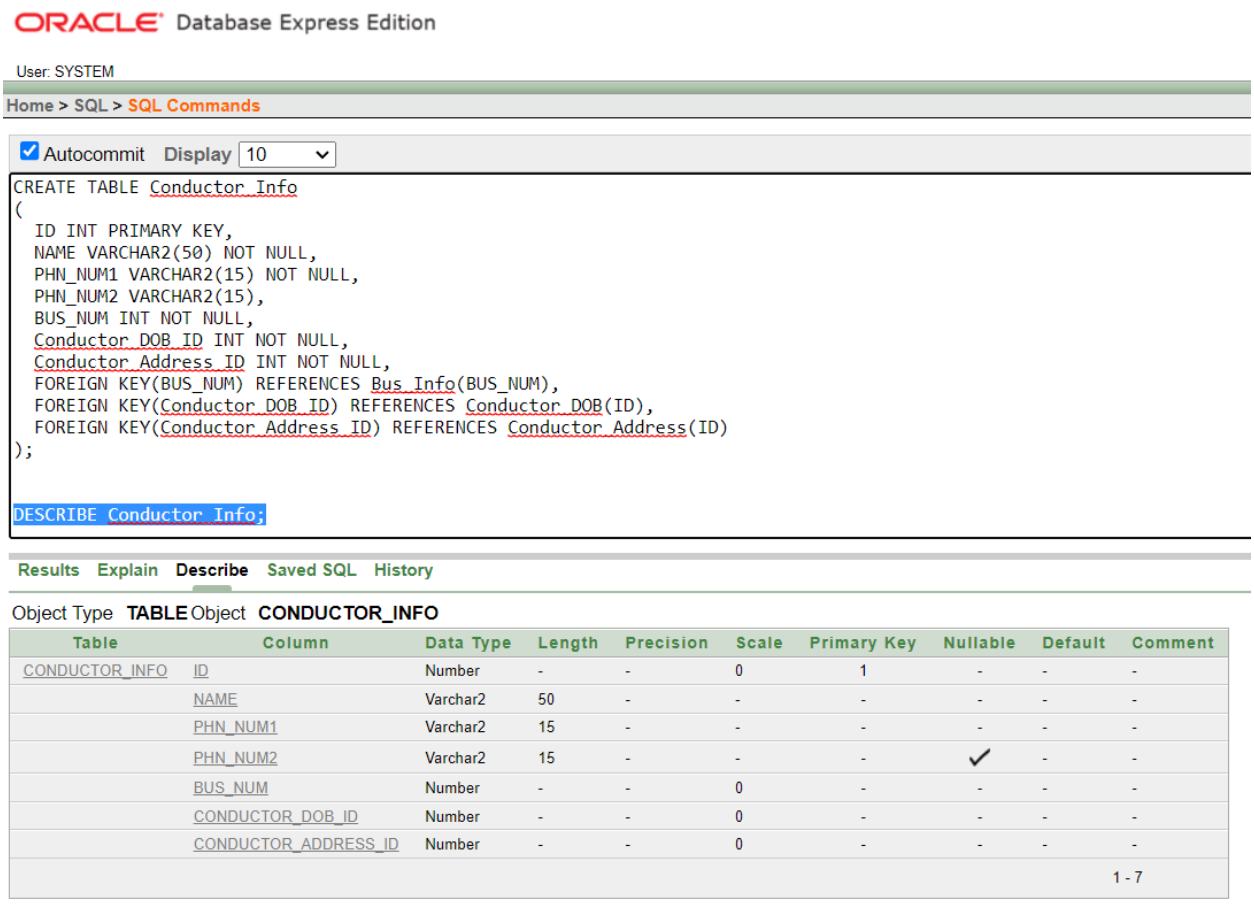


xii. CREATE TABLE Conductor_Info

(

ID INT PRIMARY KEY,
NAME VARCHAR2(50) NOT NULL,
PHN_NUM1 VARCHAR2(15) NOT NULL,
PHN_NUM2 VARCHAR2(15),
BUS_NUM INT NOT NULL,
Conductor_DOB_ID INT NOT NULL,
Conductor_Address_ID INT NOT NULL,
FOREIGN KEY(BUS_NUM) REFERENCES Bus_Info(BUS_NUM),
FOREIGN KEY(Conductor_DOB_ID) REFERENCES Conductor_DOB(ID),
FOREIGN KEY(Conductor_Address_ID) REFERENCES Conductor_Address(ID)

);



xiii. CREATE TABLE Passenger_Info
(
ID INT PRIMARY KEY,
NAME VARCHAR2(50) NOT NULL,
PHN_NUM1 VARCHAR2(15) NOT NULL,
PHN_NUM2 VARCHAR2(15),
NUM_OF_SEATS NUMBER(3) NOT NULL,
Bus_Number INT NOT NULL,
FOREIGN KEY(Bus_Number) REFERENCES Bus_Info(BUS_NUM)
);

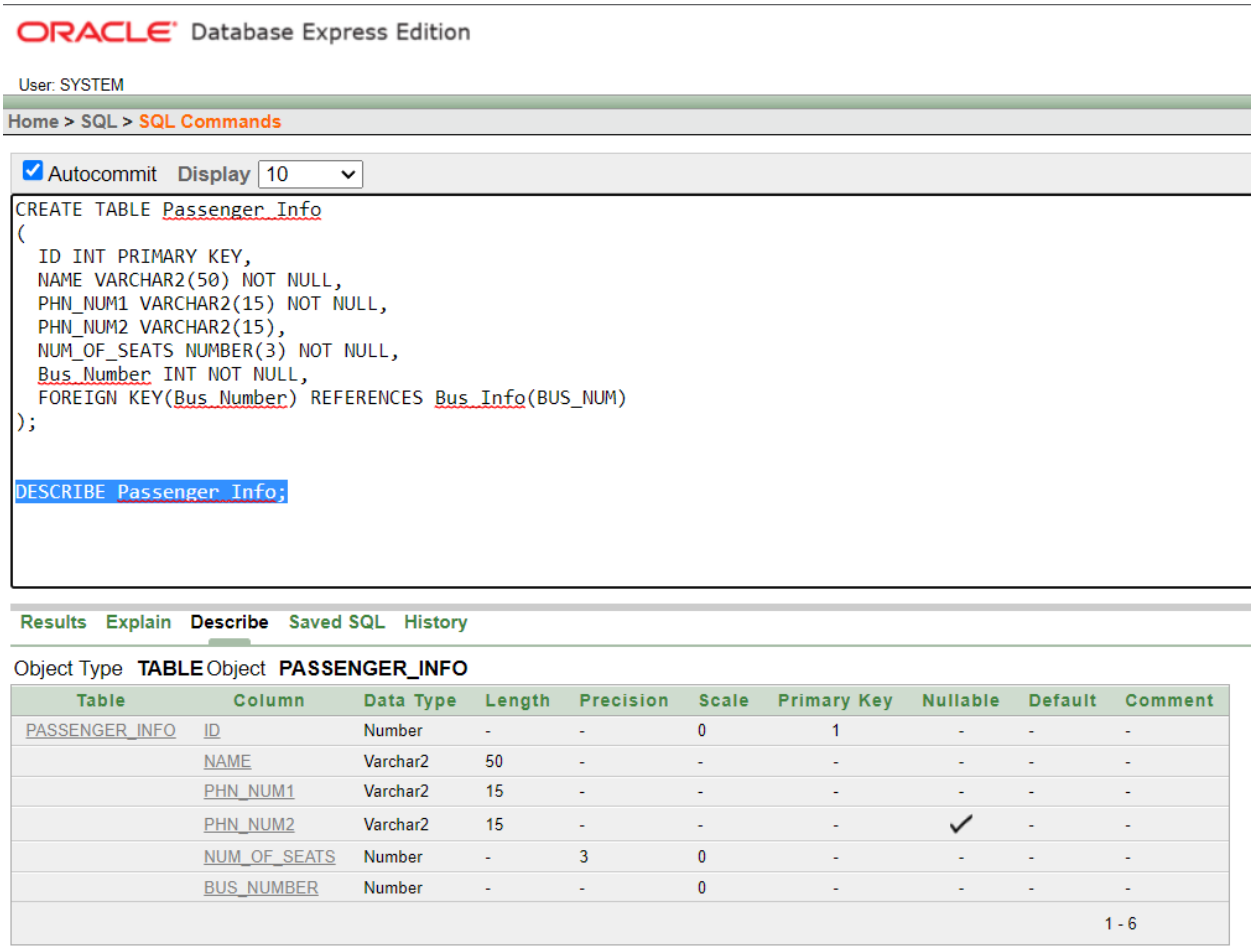


Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PASSENGER_INFO	ID	Number	-	-	0	1	-	-	-
	NAME	Varchar2	50	-	-	-	-	-	-
	PHN_NUM1	Varchar2	15	-	-	-	-	-	-
	PHN_NUM2	Varchar2	15	-	-	-	✓	-	-
	NUM_OF_SEATS	Number	-	3	0	-	-	-	-
	BUS_NUMBER	Number	-	-	0	-	-	-	-

1 - 6

xiv. CREATE TABLE Payment
(
PAY_ID INT PRIMARY KEY,
METHOD VARCHAR2(12) CHECK (METHOD IN ('Cash', 'Card', 'Nagad', 'Bikash')) NOT NULL,
TOTAL_PRICE NUMBER (7, 2) NOT NULL,
Passenger_ID INT NOT NULL,
FOREIGN KEY(Passenger_ID) REFERENCES Passenger_Info(ID)
);

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```
CREATE TABLE Payment
(
  PAY_ID INT PRIMARY KEY,
  METHOD VARCHAR2(12) CHECK (METHOD IN ('Cash', 'Card', 'Nagad', 'Bikash')) NOT NULL,
  TOTAL_PRICE NUMBER (7, 2) NOT NULL,
  Passenger_ID INT NOT NULL,
  FOREIGN KEY(Passenger_ID) REFERENCES Passenger_Info(ID)
);


DESCRIBE Payment;
```

Results Explain Describe Saved SQL History

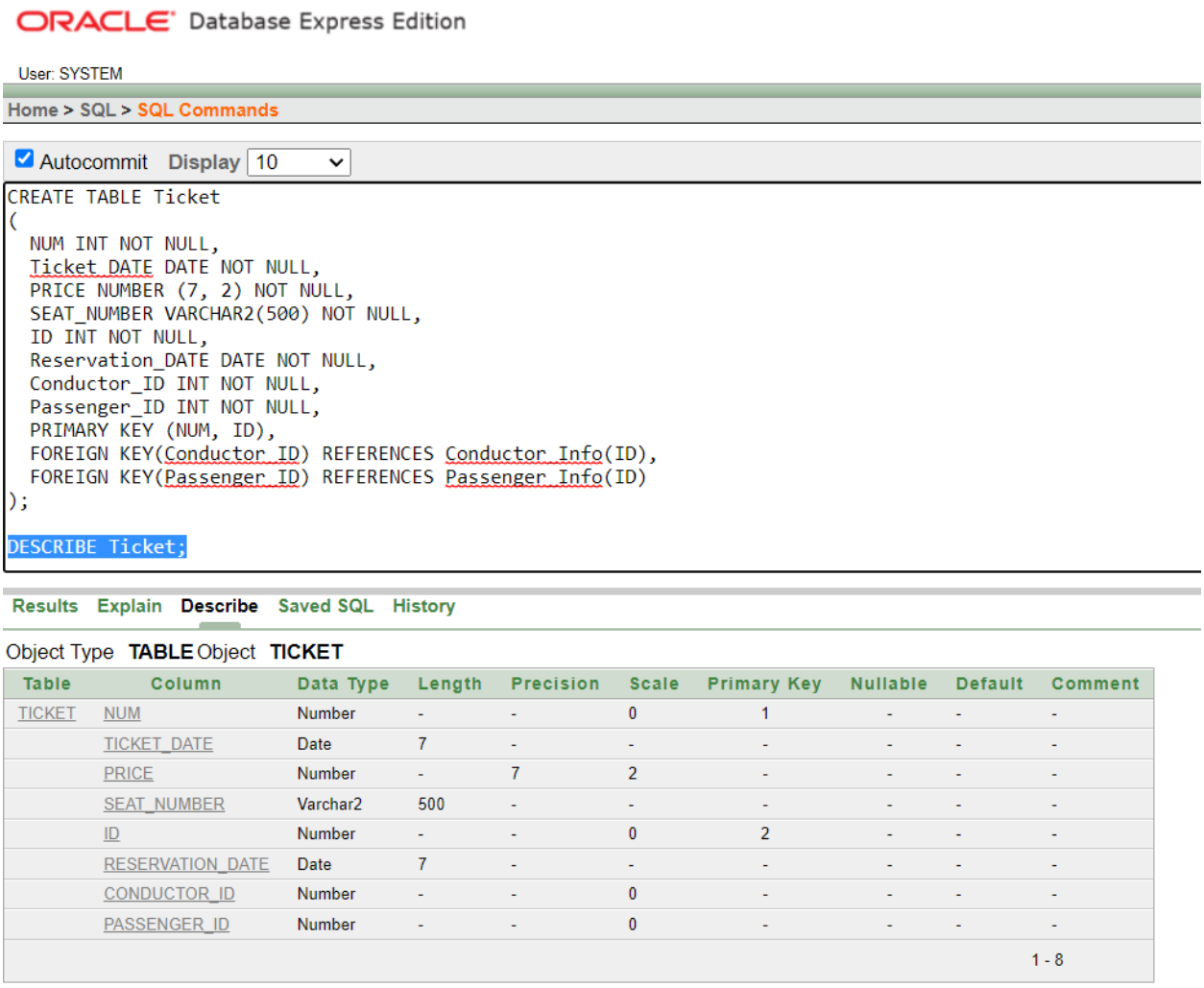
Object Type **TABLE** Object **PAYMENT**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PAYMENT	PAY_ID	Number	-	-	0	1	-	-	-
	METHOD	Varchar2	12	-	-	-	-	-	-
	TOTAL_PRICE	Number	-	7	2	-	-	-	-
	PASSENGER_ID	Number	-	-	0	-	-	-	-

1 - 4

xv. CREATE TABLE Ticket

```
(
        NUM INT NOT NULL,
        Ticket_DATE DATE NOT NULL,
        PRICE NUMBER (7, 2) NOT NULL,
        SEAT_NUMBER VARCHAR2(500) NOT NULL,
        ID INT NOT NULL,
        Reservation_DATE DATE NOT NULL,
        Conductor_ID INT NOT NULL,
        Passenger_ID INT NOT NULL,
        PRIMARY KEY (NUM, ID),
        FOREIGN KEY(Conductor_ID) REFERENCES Conductor_Info(ID),
        FOREIGN KEY(Passenger_ID) REFERENCES Passenger_Info(ID)
);
```



xvi. CREATE TABLE Supervisor_Info
(
ID INT PRIMARY KEY,
NAME VARCHAR2(50) NOT NULL,
PHN_NUM1 VARCHAR2(15) NOT NULL,
PHN_NUM2 VARCHAR2(15),
Supervisor_DOB_ID INT NOT NULL,
Supervisor_Address_ID INT NOT NULL,
Bus_Number INT NOT NULL,
FOREIGN KEY(Supervisor_DOB_ID) REFERENCES Supervisor_DOB(ID),
FOREIGN KEY(Supervisor_Address_ID) REFERENCES Supervisor_Address(ID),
FOREIGN KEY(Bus_Number) REFERENCES Bus_Info(BUS_NUM)
);

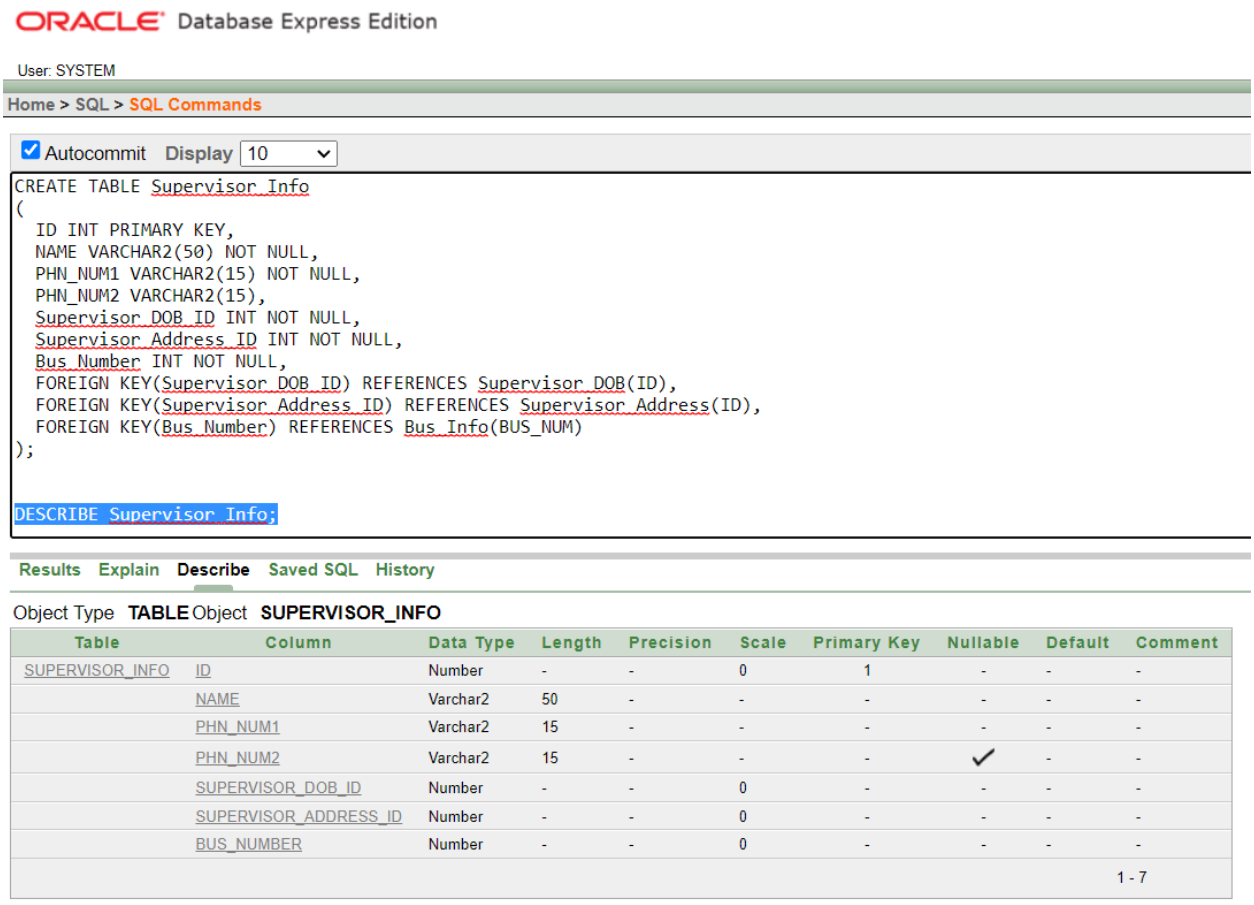


Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
SUPERVISOR_INFO	ID	Number	-	-	0	1	-	-	-
	NAME	Varchar2	50	-	-	-	-	-	-
	PHN_NUM1	Varchar2	15	-	-	-	-	-	-
	PHN_NUM2	Varchar2	15	-	-	-	✓	-	-
	SUPERVISOR_DOB_ID	Number	-	-	0	-	-	-	-
	SUPERVISOR_ADDRESS_ID	Number	-	-	0	-	-	-	-
	BUS_NUMBER	Number	-	-	0	-	-	-	-

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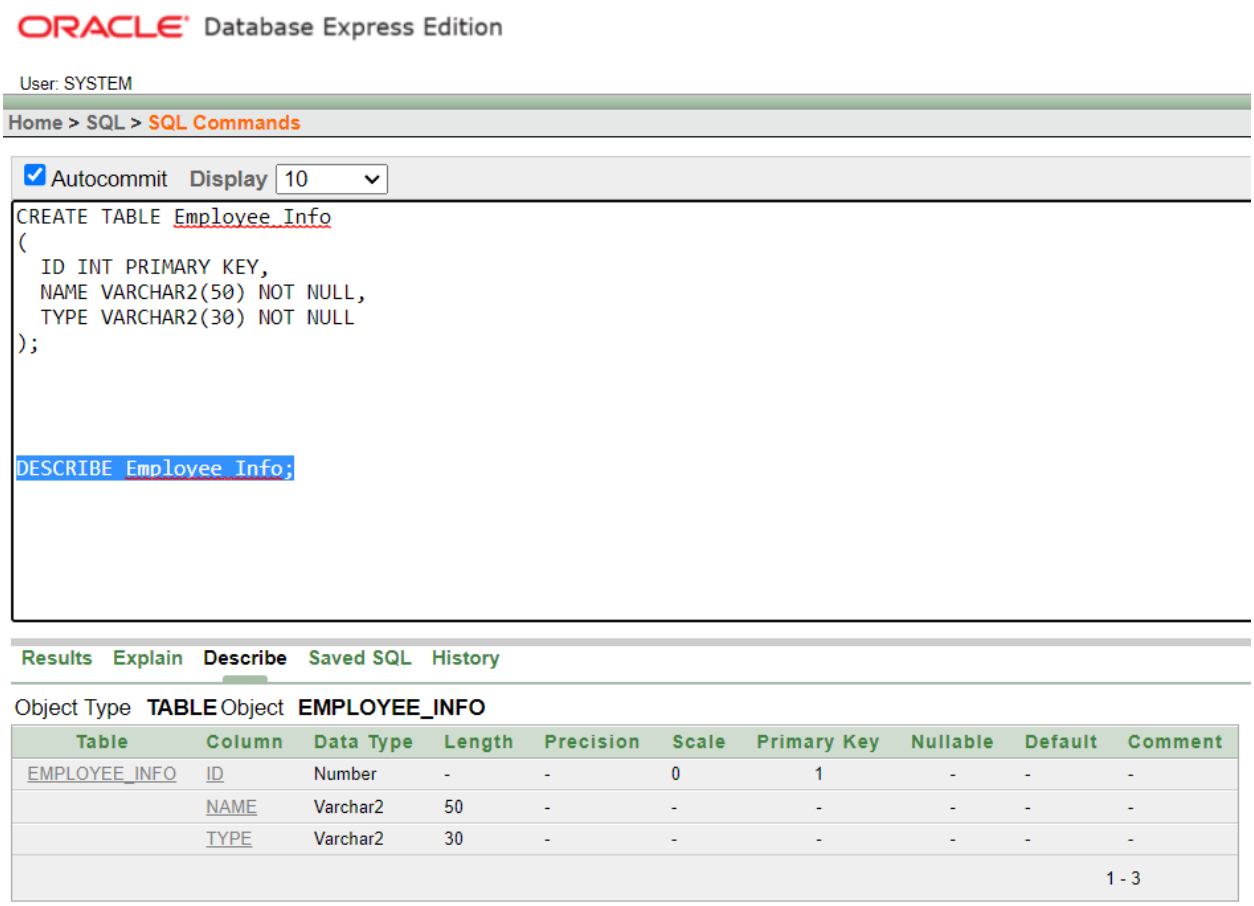
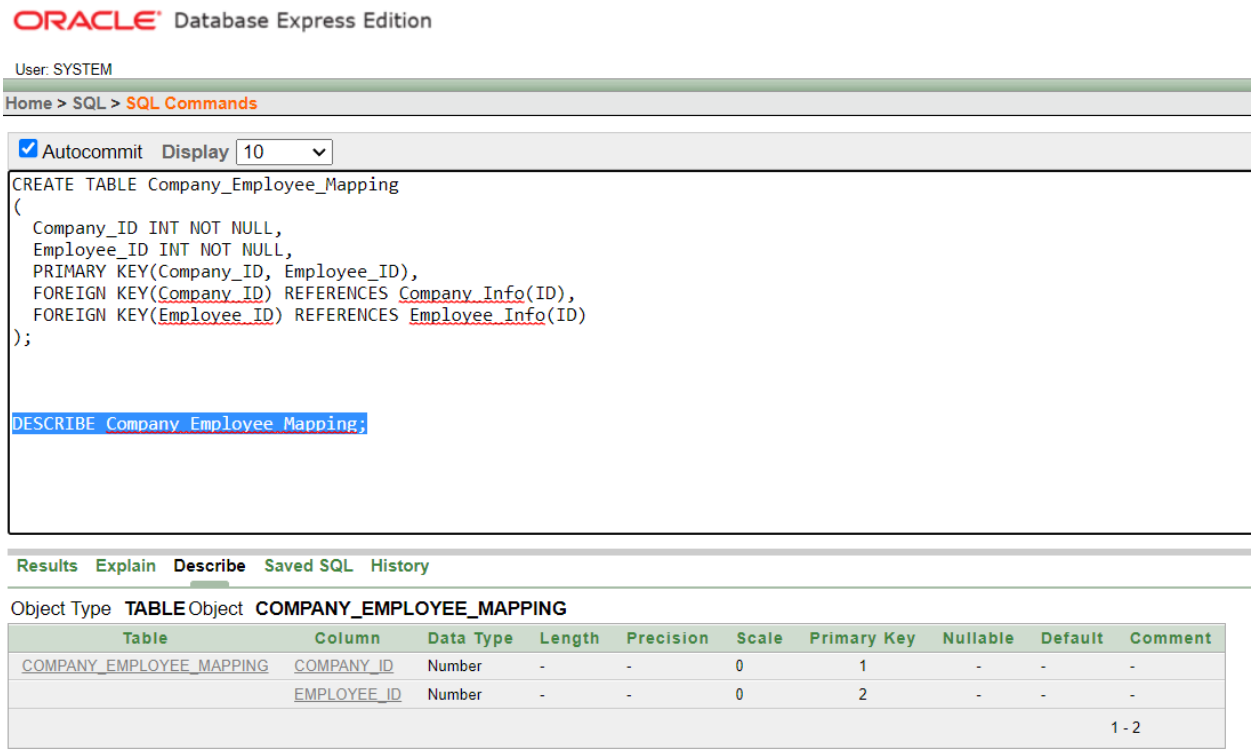
xvii. CREATE TABLE Employee_Info
(
ID INT PRIMARY KEY,
NAME VARCHAR2(50) NOT NULL,
TYPE VARCHAR2(30) NOT NULL
);



xviii. CREATE TABLE Company_Employee_Mapping
(
Company_ID INT NOT NULL,
Employee_ID INT NOT NULL,
PRIMARY KEY(Company_ID, Employee_ID),
FOREIGN KEY(Company_ID) REFERENCES Company_Info(ID),
FOREIGN KEY(Employee_ID) REFERENCES Employee_Info(ID)
);



b) Sequence Creation:

1. CREATE SEQUENCE Driver_DOB_ID
   INCREMENT BY 1
   START WITH 1
   MAXVALUE 1000
   NOCACHE
   NOCYCLE;

2. CREATE SEQUENCE Driver_Address_ID
   INCREMENT BY 1
   START WITH 1
   MAXVALUE 1000
   NOCACHE
   NOCYCLE;

3. CREATE SEQUENCE Conductor_DOB_ID
   INCREMENT BY 1
   START WITH 1
   MAXVALUE 1000
   NOCACHE
   NOCYCLE;

4. CREATE SEQUENCE Conductor_Address_ID
   INCREMENT BY 1
   START WITH 1
   MAXVALUE 1000
   NOCACHE
   NOCYCLE;

5. CREATE SEQUENCE Supervisor_DOB_ID
   INCREMENT BY 1
   START WITH 1
   MAXVALUE 1000
   NOCACHE
   NOCYCLE;

6. CREATE SEQUENCE Supervisor_Address_ID
   INCREMENT BY 1
   START WITH 1
   MAXVALUE 1000
   NOCACHE
   NOCYCLE;

7. CREATE SEQUENCE Company_Address_ID
   INCREMENT BY 1
   START WITH 1
   MAXVALUE 1000
   NOCACHE
   NOCYCLE;

8. CREATE SEQUENCE Company_Info_ID
   INCREMENT BY 1
   START WITH 1
   MAXVALUE 1000
   NOCACHE
   NOCYCLE;

9. CREATE SEQUENCE Company_Address_ID_fk1
   INCREMENT BY 1
   START WITH 1
   MAXVALUE 1000
   NOCACHE
   NOCYCLE;

10. CREATE SEQUENCE Schedule_ID
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

11. CREATE SEQUENCE Bus_Info_ID
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

12. CREATE SEQUENCE Schedule_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

13. CREATE SEQUENCE Company_Info_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

14. CREATE SEQUENCE Driver_Info_ID
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

15. CREATE SEQUENCE Bus_Info_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

16. CREATE SEQUENCE Driver_DOB_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

17. CREATE SEQUENCE Driver_Address_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

18. CREATE SEQUENCE Conductor_Info_ID
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

19. CREATE SEQUENCE Bus_Info_ID_fk2
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

20. CREATE SEQUENCE Conductor_DOB_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

21. CREATE SEQUENCE Conductor_Address_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

22. CREATE SEQUENCE Passenger_Info_ID
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

23. CREATE SEQUENCE Bus_Info_ID_fk3
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

24. CREATE SEQUENCE Pay_Info_ID
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

25. CREATE SEQUENCE Passenger_Info_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

26. CREATE SEQUENCE Ticket_ID
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

27. CREATE SEQUENCE Conductor_Info_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

28. CREATE SEQUENCE Passenger_Info_ID_fk2
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

29. CREATE SEQUENCE Supervisor_Info_ID
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

30. CREATE SEQUENCE Supervisor_DOB_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

31. CREATE SEQUENCE Supervisor_Address_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

32. CREATE SEQUENCE Bus_Info_ID_fk4
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

33. CREATE SEQUENCE Employee_Info_ID
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

34. CREATE SEQUENCE Company_Info_ID_fk2
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

35. CREATE SEQUENCE Employee_Info_ID_fk1
    INCREMENT BY 1
    START WITH 1
    MAXVALUE 1000
    NOCACHE
    NOCYCLE;

c) Inserting Data:

i. Driver_DOB

- INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Driver_DOB_ID.NEXTVAL, 1, 1, 1980);
- INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Driver_DOB_ID.NEXTVAL, 12, 6, 1980);
- INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Driver_DOB_ID.NEXTVAL, 18, 3, 1982);
- INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Driver_DOB_ID.NEXTVAL, 9, 2, 1987);
- INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Driver_DOB_ID.NEXTVAL, 10, 12, 1985);
- INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Driver_DOB_ID.NEXTVAL, 28, 2, 1983);
- INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Driver_DOB_ID.NEXTVAL, 12, 7, 1978);

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```
INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
                VALUES (Driver_DOB_ID.NEXTVAL, 1, 1, 1980);
INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
                VALUES (Driver_DOB_ID.NEXTVAL, 12, 6, 1980);
INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
                VALUES (Driver_DOB_ID.NEXTVAL, 18, 3, 1982);
INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
                VALUES (Driver_DOB_ID.NEXTVAL, 9, 2, 1987);
INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
                VALUES (Driver_DOB_ID.NEXTVAL, 10, 12, 1985);
INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
                VALUES (Driver_DOB_ID.NEXTVAL, 28, 2, 1983);
INSERT INTO Driver_DOB (ID, DAY, MONTH, YEAR)
                VALUES (Driver_DOB_ID.NEXTVAL, 12, 7, 1978);

SELECT * FROM Driver_DOB;
```

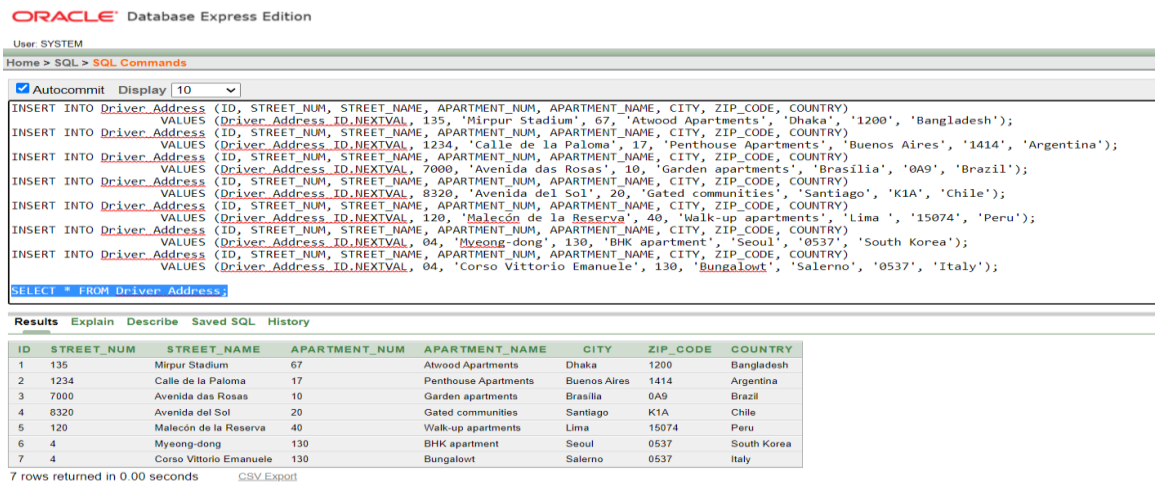
Results Explain Describe Saved SQL History

ID	DAY	MONTH	YEAR
1	1	1	1980
2	12	6	1980
3	18	3	1982
4	9	2	1987
5	10	12	1985
6	28	2	1983
7	12	7	1978

7 rows returned in 0.00 seconds CSV Export

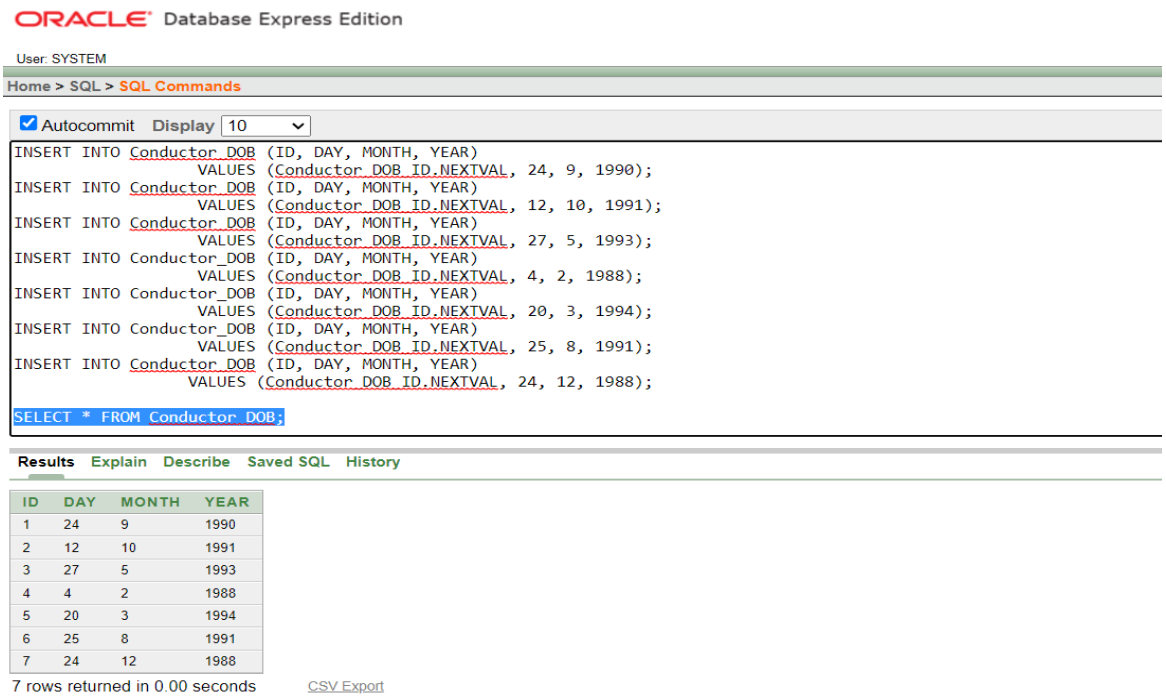
ii. Driver_Address

- INSERT INTO Driver_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Driver_Address_ID.NEXTVAL, 135, 'Mirpur Stadium', 67, 'Atwood Apartments', 'Dhaka', '1200', 'Bangladesh');
- INSERT INTO Driver_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Driver_Address_ID.NEXTVAL, 1234, 'Calle de la Paloma', 17, 'Penthouse Apartments', 'Buenos Aires', '1414', 'Argentina');
- INSERT INTO Driver_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Driver_Address_ID.NEXTVAL, 7000, 'Avenida das Rosas', 10, 'Garden apartments', 'Brasília', '0A9', 'Brazil');
- INSERT INTO Driver_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Driver_Address_ID.NEXTVAL, 8320, 'Avenida del Sol', 20, 'Gated communities', 'Santiago', 'K1A', 'Chile');
- INSERT INTO Driver_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Driver_Address_ID.NEXTVAL, 120, 'Malecón de la Reserva', 40, 'Walk-up apartments', 'Lima ', '15074', 'Peru');
- INSERT INTO Driver_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Driver_Address_ID.NEXTVAL, 04, 'Myeong-dong', 130, 'BHK apartment', 'Seoul', '0537', 'South Korea');
- INSERT INTO Driver_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Driver_Address_ID.NEXTVAL, 04, 'Corso Vittorio Emanuele', 130, 'Bungalowt', 'Salerno', '0537', 'Italy');



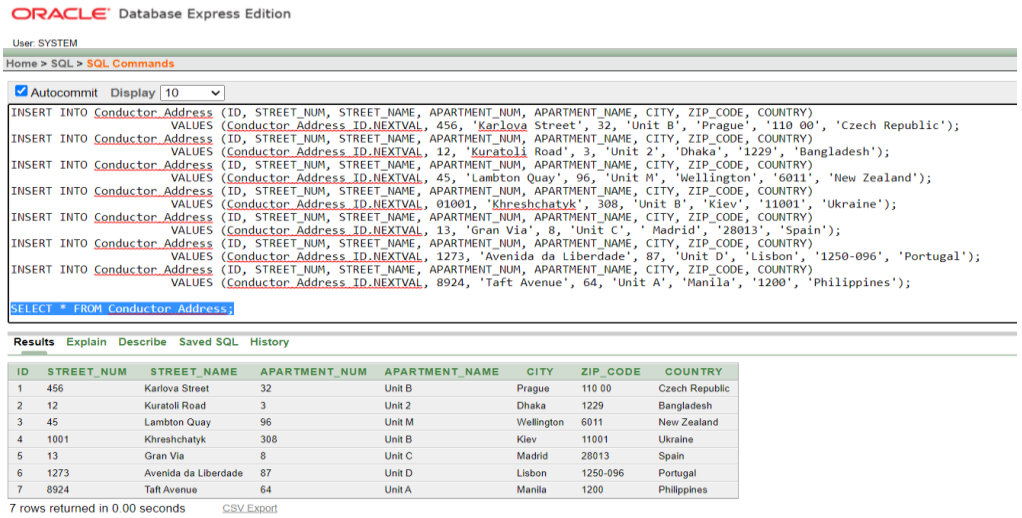
iii. Conductor_DOB

- INSERT INTO Conductor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Conductor_DOB_ID.NEXTVAL, 24, 9, 1990);
- INSERT INTO Conductor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Conductor_DOB_ID.NEXTVAL, 12, 10, 1991);
- INSERT INTO Conductor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Conductor_DOB_ID.NEXTVAL, 27, 5, 1993);
- INSERT INTO Conductor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Conductor_DOB_ID.NEXTVAL, 4, 2, 1988);
- INSERT INTO Conductor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Conductor_DOB_ID.NEXTVAL, 20, 3, 1994);
- INSERT INTO Conductor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Conductor_DOB_ID.NEXTVAL, 25, 8, 1991);
- INSERT INTO Conductor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Conductor_DOB_ID.NEXTVAL, 24, 12, 1988);



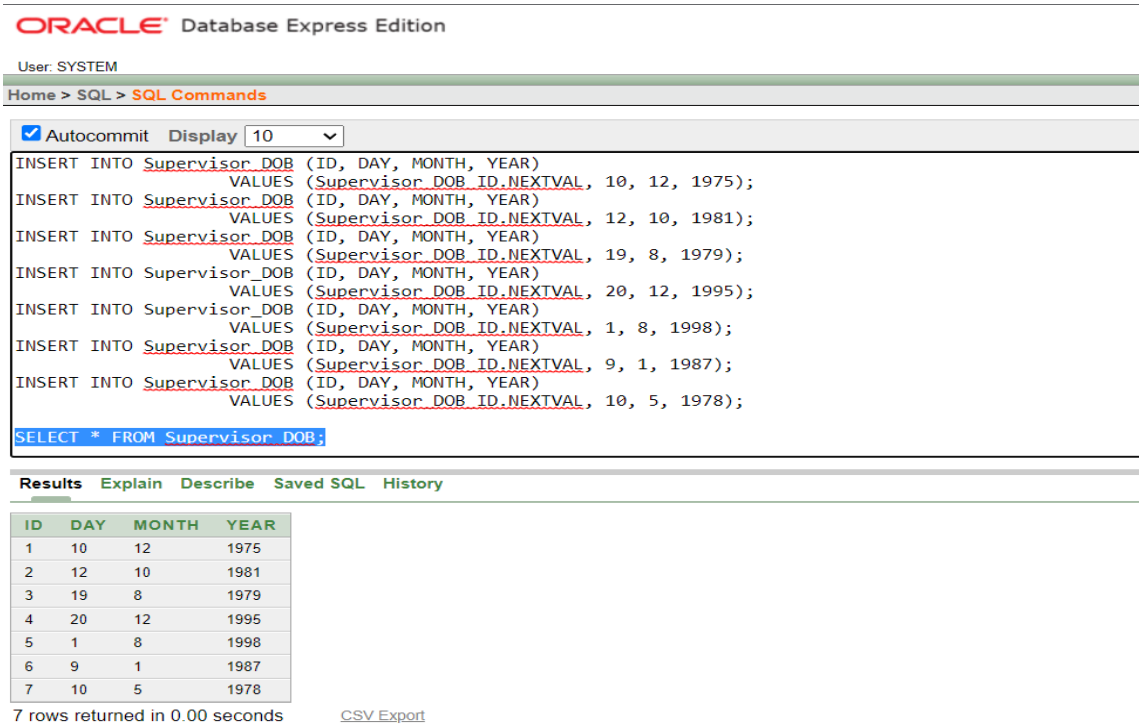
iv. Conductor_Address:

- INSERT INTO Conductor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Conductor_Address_ID.NEXTVAL, 456, 'Karlova Street', 32, 'Unit B', 'Prague', '110 00', 'Czech Republic');
- INSERT INTO Conductor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Conductor_Address_ID.NEXTVAL, 12, 'Kuratoli Road', 3, 'Unit 2', 'Dhaka', '1229', 'Bangladesh');
- INSERT INTO Conductor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Conductor_Address_ID.NEXTVAL, 45, 'Lambton Quay', 96, 'Unit M', 'Wellington', '6011', 'New Zealand');
- INSERT INTO Conductor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Conductor_Address_ID.NEXTVAL, 01001, 'Khreshchatyk', 308, 'Unit B', 'Kiev', '11001', 'Ukraine');
- INSERT INTO Conductor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Conductor_Address_ID.NEXTVAL, 13, 'Gran Via', 8, 'Unit C', ' Madrid', '28013', 'Spain');
- INSERT INTO Conductor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Conductor_Address_ID.NEXTVAL, 1273, 'Avenida da Liberdade', 87, 'Unit D', 'Lisbon', '1250-096', 'Portugal');
- INSERT INTO Conductor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Conductor_Address_ID.NEXTVAL, 8924, 'Taft Avenue', 64, 'Unit A', 'Manila', '1200', 'Philippines');



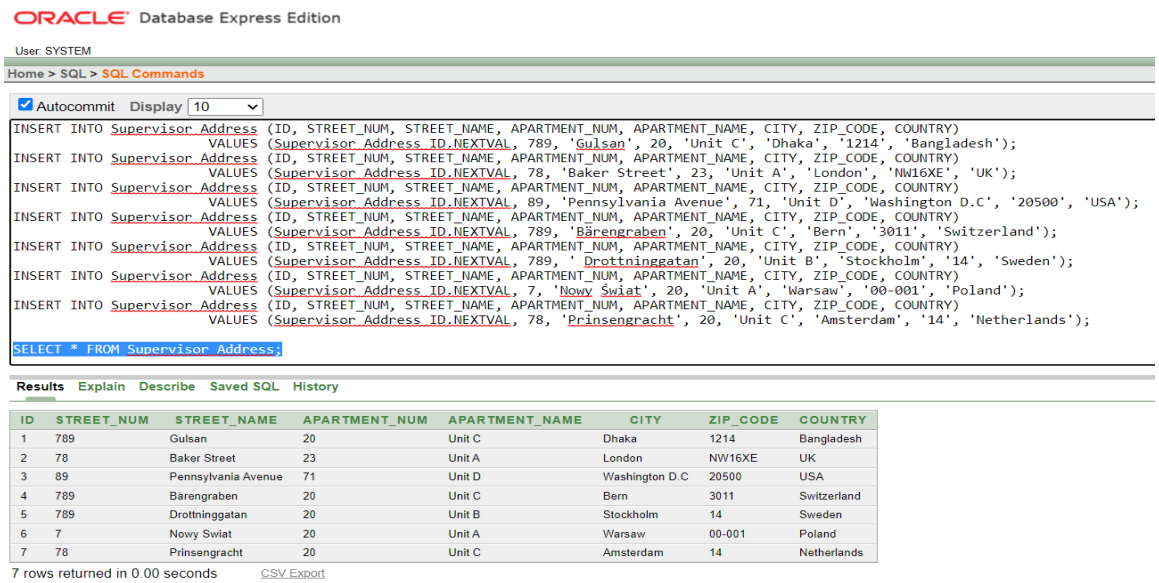
v. Supervisor_DOB

- INSERT INTO Supervisor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Supervisor_DOB_ID.NEXTVAL, 10, 12, 1975);
- INSERT INTO Supervisor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Supervisor_DOB_ID.NEXTVAL, 12, 10, 1981);
- INSERT INTO Supervisor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Supervisor_DOB_ID.NEXTVAL, 19, 8, 1979);
- INSERT INTO Supervisor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Supervisor_DOB_ID.NEXTVAL, 20, 12, 1995);
- INSERT INTO Supervisor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Supervisor_DOB_ID.NEXTVAL, 1, 8, 1998);
- INSERT INTO Supervisor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Supervisor_DOB_ID.NEXTVAL, 9, 1, 1987);
- INSERT INTO Supervisor_DOB (ID, DAY, MONTH, YEAR)
  VALUES (Supervisor_DOB_ID.NEXTVAL, 10, 5, 1978);



vi. Supervisor_Address

- INSERT INTO Supervisor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Supervisor_Address_ID.NEXTVAL, 789, 'Gulsan', 20, 'Unit C', 'Dhaka', '1214', 'Bangladesh');
- INSERT INTO Supervisor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Supervisor_Address_ID.NEXTVAL, 78, 'Baker Street', 23, 'Unit A', 'London', 'NW16XE', 'UK');
- INSERT INTO Supervisor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Supervisor_Address_ID.NEXTVAL, 89, 'Pennsylvania Avenue', 71, 'Unit D', 'Washington D.C', '20500', 'USA');
- INSERT INTO Supervisor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Supervisor_Address_ID.NEXTVAL, 789, 'Bärengraben', 20, 'Unit C', 'Bern', '3011', 'Switzerland');
- INSERT INTO Supervisor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Supervisor_Address_ID.NEXTVAL, 789, ' Drottninggatan', 20, 'Unit B', 'Stockholm', '14', 'Sweden');
- INSERT INTO Supervisor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Supervisor_Address_ID.NEXTVAL, 7, 'Nowy Świat', 20, 'Unit A', 'Warsaw', '00-001', 'Poland');
- INSERT INTO Supervisor_Address (ID, STREET_NUM, STREET_NAME, APARTMENT_NUM, APARTMENT_NAME, CITY, ZIP_CODE, COUNTRY)
  VALUES (Supervisor_Address_ID.NEXTVAL, 78, 'Prinsengracht', 20, 'Unit C', 'Amsterdam', '14', 'Netherlands');



vii. Company_Address

- INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY) VALUES (Company_Address_ID.NEXTVAL, 82, 'Unter den Linden', 'Berlin', 'Germany');
- INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY) VALUES (Company_Address_ID.NEXTVAL, 8, 'Königstraße', 'Stuttgart', 'Germany');
- INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY) VALUES (Company_Address_ID.NEXTVAL, 2, ' Königsallee', 'Düsseldorf', 'Germany');
- INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY) VALUES (Company_Address_ID.NEXTVAL, 88, 'Spring Garden Road', 'Halifax, NS', 'Canada');
- INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY) VALUES (Company_Address_ID.NEXTVAL, 82, 'Buchanan Street', 'Glasgow', 'UK');
- INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY) VALUES (Company_Address_ID.NEXTVAL, 82, 'Northumberland', 'Newcastle', 'UK');
- INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY) VALUES (Company_Address_ID.NEXTVAL, 82, 'Camelback Road', 'Phoenix, AZ', 'US');

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```
INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY)
                    VALUES (Company_Address_ID.NEXTVAL, 82, 'Unter den Linden', 'Berlin',  'Germany');
INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY)
                    VALUES (Company_Address_ID.NEXTVAL, 8, 'Königstraße', 'Stuttgart', 'Germany');
INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY)
                    VALUES (Company_Address_ID.NEXTVAL, 2, ' Königsallee', 'Düsseldorf', 'Germany');
INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY)
                    VALUES (Company_Address_ID.NEXTVAL, 88, 'Spring Garden Road', 'Halifax, NS', 'Canada');
INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY)
                    VALUES (Company_Address_ID.NEXTVAL, 82, 'Buchanan Street', 'Glasgow', 'UK');
INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY)
                    VALUES (Company_Address_ID.NEXTVAL, 82, 'Northumberland', 'Newcastle', 'UK');
INSERT INTO Company_Address (ID, STREET_NUM, STREET_NAME, CITY, COUNTRY)
                    VALUES (Company_Address_ID.NEXTVAL, 82, 'Camelback Road', 'Phoenix, AZ', 'US');

SELECT * FROM Company_Address;
```

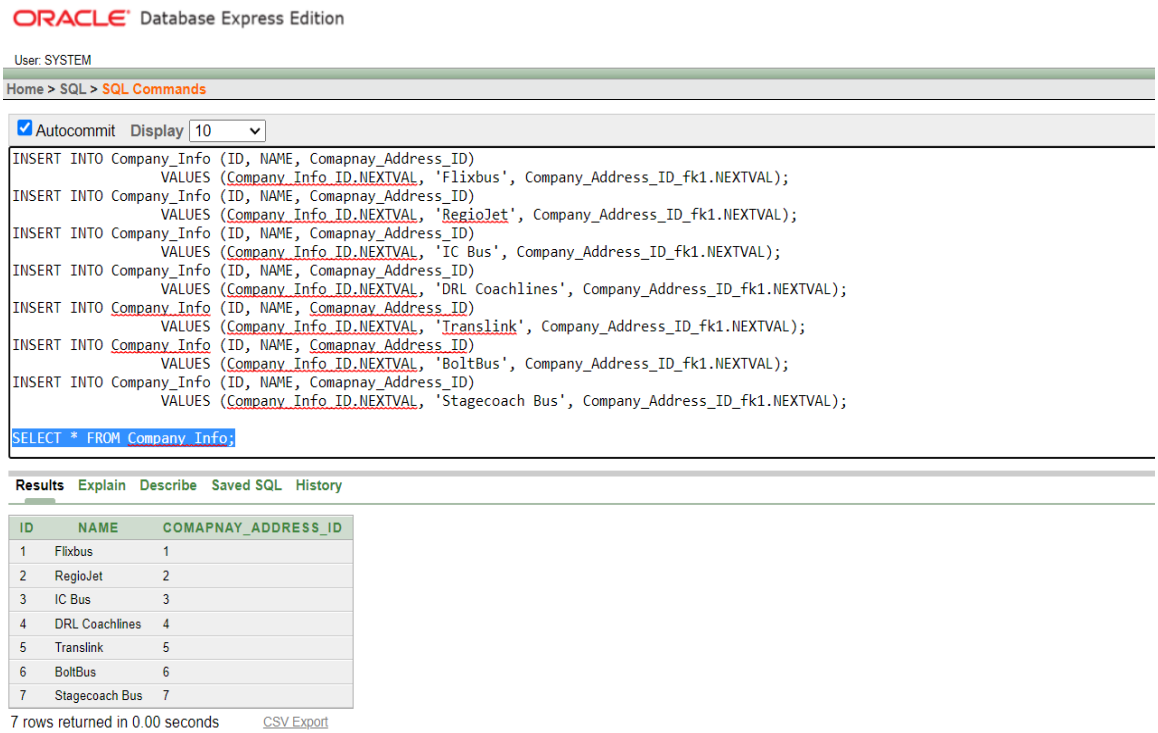
Results Explain Describe Saved SQL History

ID	STREET_NUM	STREET_NAME	CITY	COUNTRY
1	82	Unter den Linden	Berlin	Germany
2	8	Königstraße	Stuttgart	Germany
3	2	Königsallee	Düsseldorf	Germany
4	88	Spring Garden Road	Halifax, NS	Canada
5	82	Buchanan Street	Glasgow	UK
6	82	Northumberland	Newcastle	UK
7	82	Camelback Road	Phoenix, AZ	US

7 rows returned in 0.00 seconds CSV Export

viii. Company_Info

- INSERT INTO Company_Info (ID, NAME, Comapnay_Address_ID)
  VALUES (Company_Info_ID.NEXTVAL, 'Flixbus', Company_Address_ID_fk1.NEXTVAL);
- INSERT INTO Company_Info (ID, NAME, Comapnay_Address_ID)
  VALUES (Company_Info_ID.NEXTVAL, 'RegioJet', Company_Address_ID_fk1.NEXTVAL);
- INSERT INTO Company_Info (ID, NAME, Comapnay_Address_ID)
  VALUES (Company_Info_ID.NEXTVAL, 'IC Bus', Company_Address_ID_fk1.NEXTVAL);
- INSERT INTO Company_Info (ID, NAME, Comapnay_Address_ID)
  VALUES (Company_Info_ID.NEXTVAL, 'DRL Coachlines', Company_Address_ID_fk1.NEXTVAL);
- INSERT INTO Company_Info (ID, NAME, Comapnay_Address_ID)
  VALUES (Company_Info_ID.NEXTVAL, 'Translink', Company_Address_ID_fk1.NEXTVAL);
- INSERT INTO Company_Info (ID, NAME, Comapnay_Address_ID)
  VALUES (Company_Info_ID.NEXTVAL, 'BoltBus', Company_Address_ID_fk1.NEXTVAL);
- INSERT INTO Company_Info (ID, NAME, Comapnay_Address_ID)
  VALUES (Company_Info_ID.NEXTVAL, 'Stagecoach Bus', Company_Address_ID_fk1.NEXTVAL);



ix. Schedule

- INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
  VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 05:30:00', 'Munich');
- INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
  VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 05:45:00', 'Cologne');
- INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
  VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 06:00:00', 'Leipzig');
- INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
  VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 06:10:00', 'Toronto, ON');
- INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
  VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 06:30:00', 'Bristol');
- INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
  VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 06:45:00', 'Liverpool');
- INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
  VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 07:15:00', 'Miami');

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```
INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
              VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023  05:30:00', 'Munich');
INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
              VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 05:45:00', 'Cologne');
INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
              VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 06:00:00', 'Leipzig');
INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
              VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 06:10:00', 'Toronto, ON');
INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
              VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 06:30:00', 'Bristol');
INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
              VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 06:45:00', 'Liverpool');
INSERT INTO Schedule (ID, DEPARTURE_TIME, DESTINATION)
              VALUES (Schedule_ID.NEXTVAL, '04-MAY-2023 07:15:00', 'Miami');

SELECT * FROM Schedule;
```

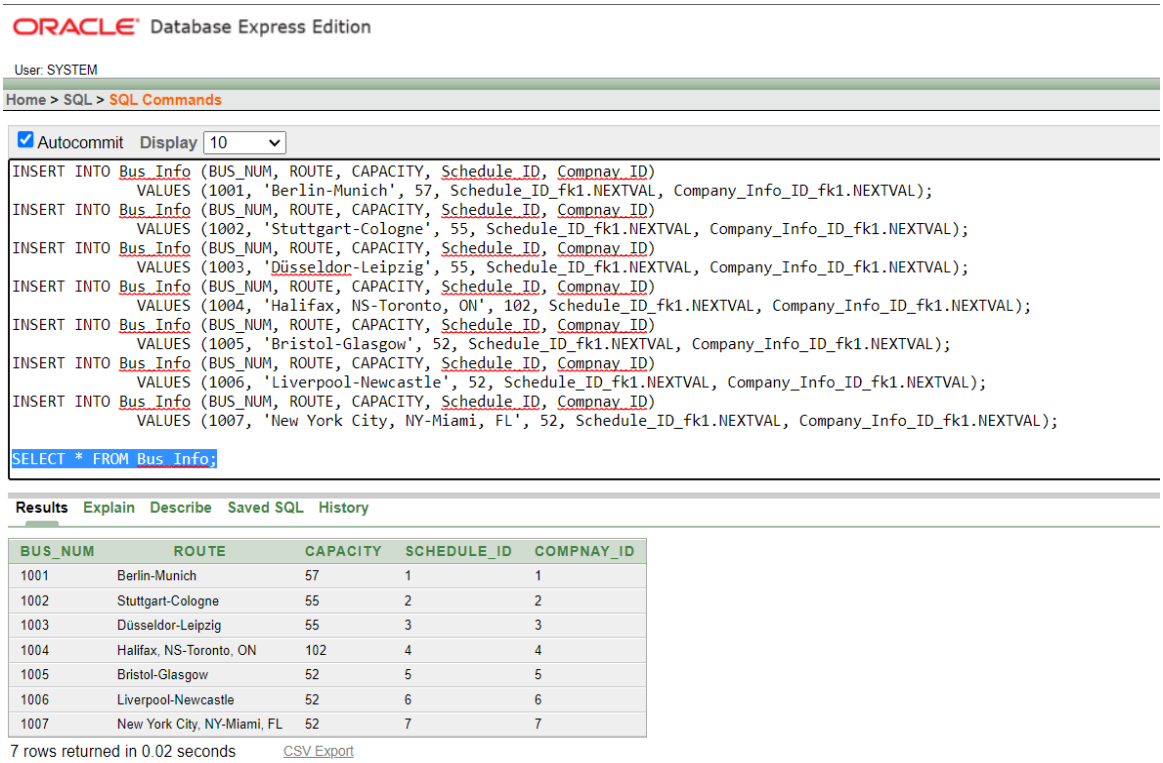
Results Explain Describe Saved SQL History

ID	DEPARTURE_TIME	DESTINATION
1	04-MAY-23 05.30.00.000000 AM	Munich
2	04-MAY-23 05.45.00.000000 AM	Cologne
3	04-MAY-23 06.00.00.000000 AM	Leipzig
4	04-MAY-23 06.10.00.000000 AM	Toronto, ON
5	04-MAY-23 06.30.00.000000 AM	Bristol
6	04-MAY-23 06.45.00.000000 AM	Liverpool
7	04-MAY-23 07.15.00.000000 AM	Miami

7 rows returned in 0.02 seconds CSV Export

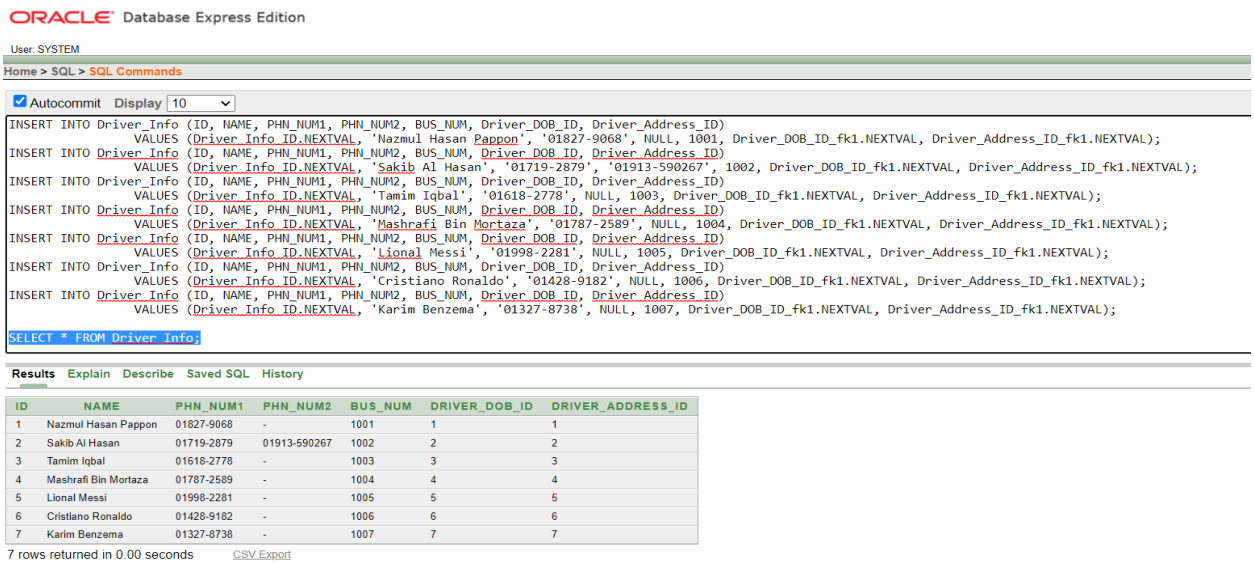
x. Bus_Info

- INSERT INTO Bus_Info (BUS_NUM, ROUTE, CAPACITY, Schedule_ID, Compnay_ID)
  VALUES (1001, 'Berlin-Munich', 57, Schedule_ID_fk1.NEXTVAL, Company_Info_ID_fk1.NEXTVAL);
- INSERT INTO Bus_Info (BUS_NUM, ROUTE, CAPACITY, Schedule_ID, Compnay_ID)
  VALUES (1002, 'Stuttgart-Cologne', 55, Schedule_ID_fk1.NEXTVAL, Company_Info_ID_fk1.NEXTVAL);
- INSERT INTO Bus_Info (BUS_NUM, ROUTE, CAPACITY, Schedule_ID, Compnay_ID)
  VALUES (1003, 'Düsseldor-Leipzig', 55, Schedule_ID_fk1.NEXTVAL, Company_Info_ID_fk1.NEXTVAL);
- INSERT INTO Bus_Info (BUS_NUM, ROUTE, CAPACITY, Schedule_ID, Compnay_ID)
  VALUES (1004, 'Halifax, NS-Toronto, ON', 102, Schedule_ID_fk1.NEXTVAL, Company_Info_ID_fk1.NEXTVAL);
- INSERT INTO Bus_Info (BUS_NUM, ROUTE, CAPACITY, Schedule_ID, Compnay_ID)
  VALUES (1005, 'Bristol-Glasgow', 52, Schedule_ID_fk1.NEXTVAL, Company_Info_ID_fk1.NEXTVAL);
- INSERT INTO Bus_Info (BUS_NUM, ROUTE, CAPACITY, Schedule_ID, Compnay_ID)
  VALUES (1006, 'Liverpool-Newcastle', 52, Schedule_ID_fk1.NEXTVAL, Company_Info_ID_fk1.NEXTVAL);
- INSERT INTO Bus_Info (BUS_NUM, ROUTE, CAPACITY, Schedule_ID, Compnay_ID)
  VALUES (1007, 'New York City, NY-Miami, FL', 52, Schedule_ID_fk1.NEXTVAL, Company_Info_ID_fk1.NEXTVAL);



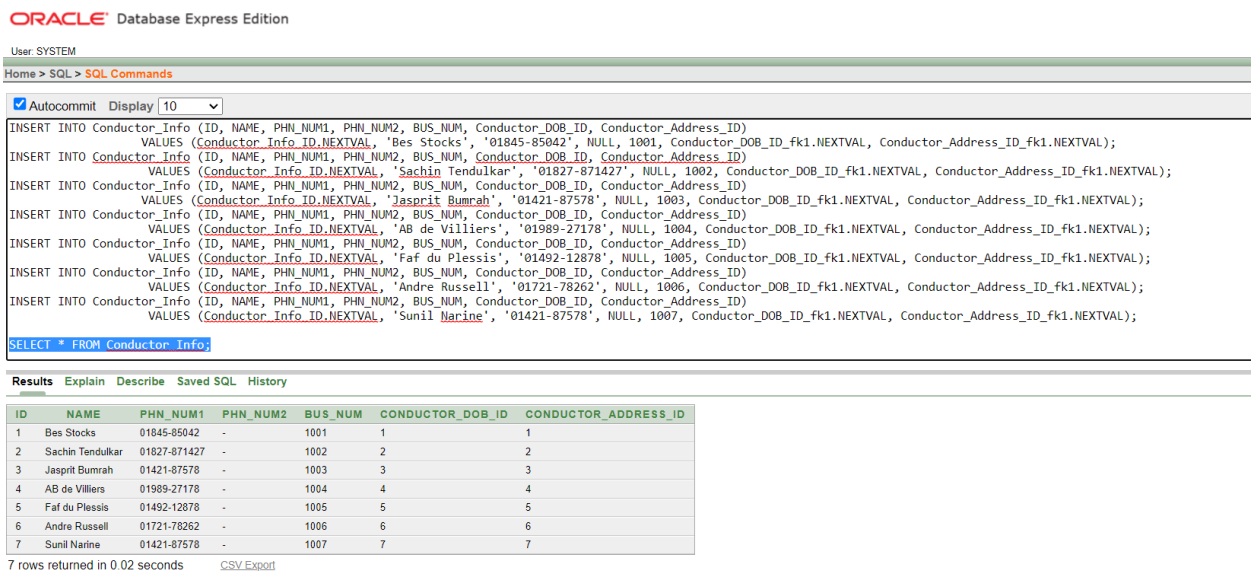
xi. Driver_Info

- INSERT INTO Driver_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Driver_DOB_ID, Driver_Address_ID)
  VALUES (Driver_Info_ID.NEXTVAL, 'Nazmul Hasan Pappon', '01827-9068', NULL, 1001, Driver_DOB_ID_fk1.NEXTVAL, Driver_Address_ID_fk1.NEXTVAL);
- INSERT INTO Driver_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Driver_DOB_ID, Driver_Address_ID)
  VALUES (Driver_Info_ID.NEXTVAL, 'Sakib Al Hasan', '01719-2879', '01913-590267', 1002, Driver_DOB_ID_fk1.NEXTVAL, Driver_Address_ID_fk1.NEXTVAL);
- INSERT INTO Driver_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Driver_DOB_ID, Driver_Address_ID)
  VALUES (Driver_Info_ID.NEXTVAL, 'Tamim Iqbal', '01618-2778', NULL, 1003, Driver_DOB_ID_fk1.NEXTVAL, Driver_Address_ID_fk1.NEXTVAL);
- INSERT INTO Driver_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Driver_DOB_ID, Driver_Address_ID)
  VALUES (Driver_Info_ID.NEXTVAL, 'Mashrafi Bin Mortaza', '01787-2589', NULL, 1004, Driver_DOB_ID_fk1.NEXTVAL, Driver_Address_ID_fk1.NEXTVAL);
- INSERT INTO Driver_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Driver_DOB_ID, Driver_Address_ID)
  VALUES (Driver_Info_ID.NEXTVAL, 'Lional Messi', '01998-2281', NULL, 1005, Driver_DOB_ID_fk1.NEXTVAL, Driver_Address_ID_fk1.NEXTVAL);
- INSERT INTO Driver_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Driver_DOB_ID, Driver_Address_ID)
  VALUES (Driver_Info_ID.NEXTVAL, 'Cristiano Ronaldo', '01428-9182', NULL, 1006, Driver_DOB_ID_fk1.NEXTVAL, Driver_Address_ID_fk1.NEXTVAL);
- INSERT INTO Driver_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Driver_DOB_ID, Driver_Address_ID)
  VALUES (Driver_Info_ID.NEXTVAL, 'Karim Benzema', '01327-8738', NULL, 1007, Driver_DOB_ID_fk1.NEXTVAL, Driver_Address_ID_fk1.NEXTVAL);



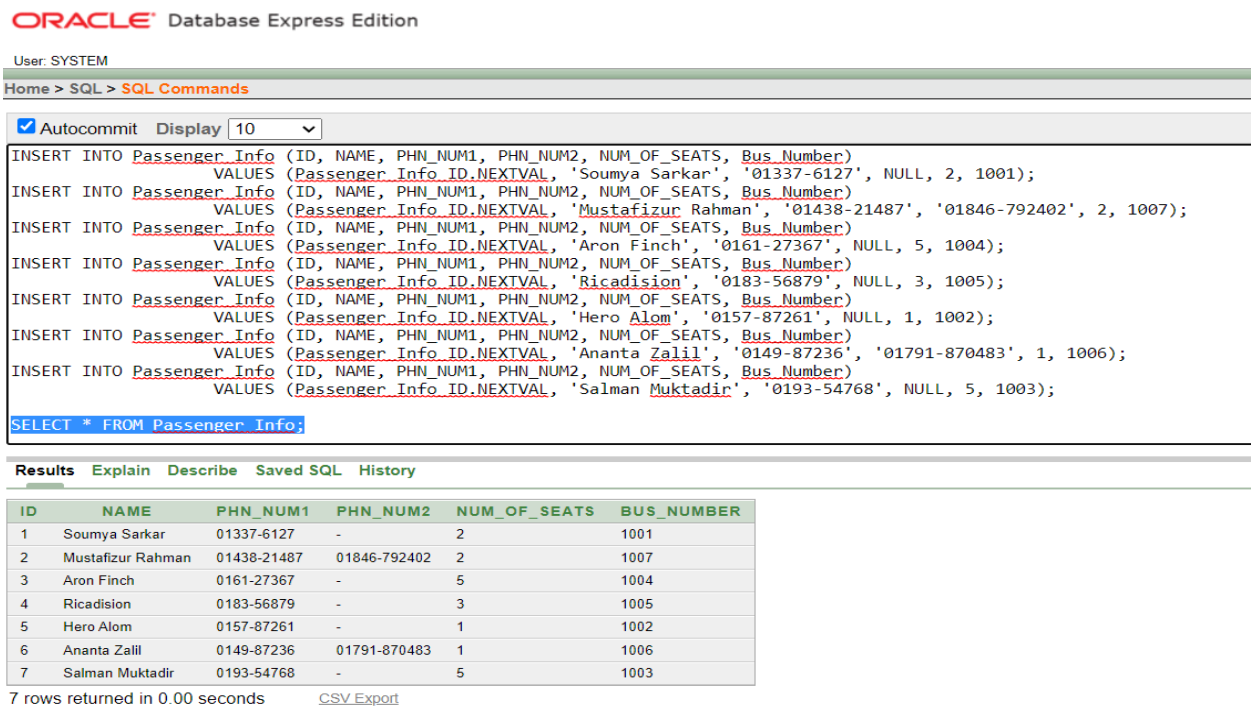
xii. Conductor_Info

- INSERT INTO Conductor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Conductor_DOB_ID, Conductor_Address_ID)
  VALUES (Conductor_Info_ID.NEXTVAL, 'Bes Stocks', '01845-85042', NULL, 1001, Conductor_DOB_ID_fk1.NEXTVAL, Conductor_Address_ID_fk1.NEXTVAL);
- INSERT INTO Conductor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Conductor_DOB_ID, Conductor_Address_ID)
  VALUES (Conductor_Info_ID.NEXTVAL, 'Sachin Tendulkar', '01827-871427', NULL, 1002, Conductor_DOB_ID_fk1.NEXTVAL, Conductor_Address_ID_fk1.NEXTVAL);
- INSERT INTO Conductor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Conductor_DOB_ID, Conductor_Address_ID)
  VALUES (Conductor_Info_ID.NEXTVAL, 'Jasprit Bumrah', '01421-87578', NULL, 1003, Conductor_DOB_ID_fk1.NEXTVAL, Conductor_Address_ID_fk1.NEXTVAL);
- INSERT INTO Conductor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Conductor_DOB_ID, Conductor_Address_ID)
  VALUES (Conductor_Info_ID.NEXTVAL, 'AB de Villiers', '01989-27178', NULL, 1004, Conductor_DOB_ID_fk1.NEXTVAL, Conductor_Address_ID_fk1.NEXTVAL);
- INSERT INTO Conductor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Conductor_DOB_ID, Conductor_Address_ID)
  VALUES (Conductor_Info_ID.NEXTVAL, 'Faf du Plessis', '01492-12878', NULL, 1005, Conductor_DOB_ID_fk1.NEXTVAL, Conductor_Address_ID_fk1.NEXTVAL);
- INSERT INTO Conductor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Conductor_DOB_ID, Conductor_Address_ID)
  VALUES (Conductor_Info_ID.NEXTVAL, 'Andre Russell', '01721-78262', NULL, 1006, Conductor_DOB_ID_fk1.NEXTVAL, Conductor_Address_ID_fk1.NEXTVAL);
- INSERT INTO Conductor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, BUS_NUM, Conductor_DOB_ID, Conductor_Address_ID)
  VALUES (Conductor_Info_ID.NEXTVAL, 'Sunil Narine', '01421-87578', NULL, 1007, Conductor_DOB_ID_fk1.NEXTVAL, Conductor_Address_ID_fk1.NEXTVAL);



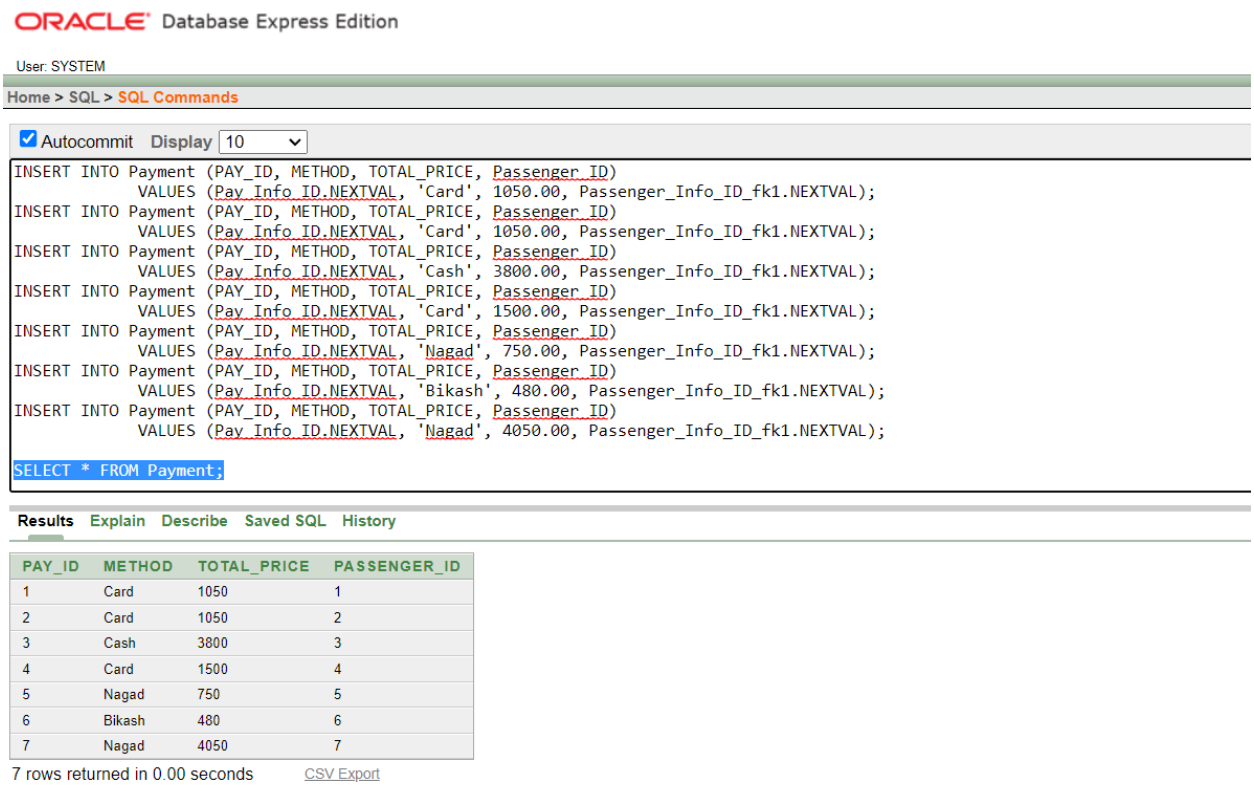
xiii. Passenger_Info

- INSERT INTO Passenger_Info (ID, NAME, PHN_NUM1, PHN_NUM2, NUM_OF_SEATS, Bus_Number) VALUES (Passenger_Info_ID.NEXTVAL, 'Soumya Sarkar', '01337-6127', NULL, 2, 1001);
- INSERT INTO Passenger_Info (ID, NAME, PHN_NUM1, PHN_NUM2, NUM_OF_SEATS, Bus_Number) VALUES (Passenger_Info_ID.NEXTVAL, 'Mustafizur Rahman', '01438-21487', '01846-792402', 2, 1007);
- INSERT INTO Passenger_Info (ID, NAME, PHN_NUM1, PHN_NUM2, NUM_OF_SEATS, Bus_Number) VALUES (Passenger_Info_ID.NEXTVAL, 'Aron Finch', '0161-27367', NULL, 5, 1004);
- INSERT INTO Passenger_Info (ID, NAME, PHN_NUM1, PHN_NUM2, NUM_OF_SEATS, Bus_Number) VALUES (Passenger_Info_ID.NEXTVAL, 'Ricadision', '0183-56879', NULL, 3, 1005);
- INSERT INTO Passenger_Info (ID, NAME, PHN_NUM1, PHN_NUM2, NUM_OF_SEATS, Bus_Number) VALUES (Passenger_Info_ID.NEXTVAL, 'Hero Alom', '0157-87261', NULL, 1, 1002);
- INSERT INTO Passenger_Info (ID, NAME, PHN_NUM1, PHN_NUM2, NUM_OF_SEATS, Bus_Number) VALUES (Passenger_Info_ID.NEXTVAL, 'Ananta Zalil', '0149-87236', '01791-870483', 1, 1006);
- INSERT INTO Passenger_Info (ID, NAME, PHN_NUM1, PHN_NUM2, NUM_OF_SEATS, Bus_Number) VALUES (Passenger_Info_ID.NEXTVAL, 'Salman Muktadir', '0193-54768', NULL, 5, 1003);



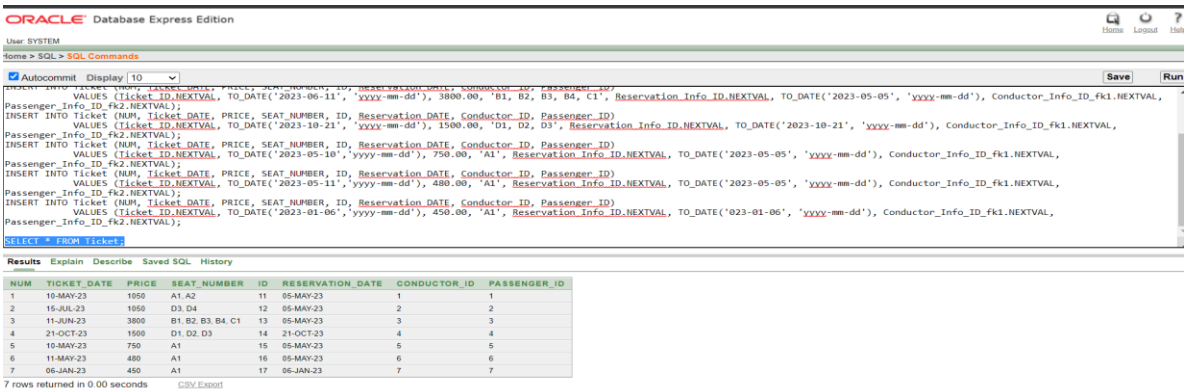
xiv. Payment

- INSERT INTO Payment (PAY_ID, METHOD, TOTAL_PRICE, Passenger_ID)
  VALUES (Pay_Info_ID.NEXTVAL, 'Card', 1050.00, Passenger_Info_ID_fk1.NEXTVAL);
- INSERT INTO Payment (PAY_ID, METHOD, TOTAL_PRICE, Passenger_ID)
  VALUES (Pay_Info_ID.NEXTVAL, 'Card', 1050.00, Passenger_Info_ID_fk1.NEXTVAL);
- INSERT INTO Payment (PAY_ID, METHOD, TOTAL_PRICE, Passenger_ID)
  VALUES (Pay_Info_ID.NEXTVAL, 'Cash', 3800.00, Passenger_Info_ID_fk1.NEXTVAL);
- INSERT INTO Payment (PAY_ID, METHOD, TOTAL_PRICE, Passenger_ID)
  VALUES (Pay_Info_ID.NEXTVAL, 'Card', 1500.00, Passenger_Info_ID_fk1.NEXTVAL);
- INSERT INTO Payment (PAY_ID, METHOD, TOTAL_PRICE, Passenger_ID)
  VALUES (Pay_Info_ID.NEXTVAL, 'Nagad', 750.00, Passenger_Info_ID_fk1.NEXTVAL);
- INSERT INTO Payment (PAY_ID, METHOD, TOTAL_PRICE, Passenger_ID)
  VALUES (Pay_Info_ID.NEXTVAL, 'Bikash', 480.00, Passenger_Info_ID_fk1.NEXTVAL);
- INSERT INTO Payment (PAY_ID, METHOD, TOTAL_PRICE, Passenger_ID)
  VALUES (Pay_Info_ID.NEXTVAL, 'Nagad', 4050.00, Passenger_Info_ID_fk1.NEXTVAL);



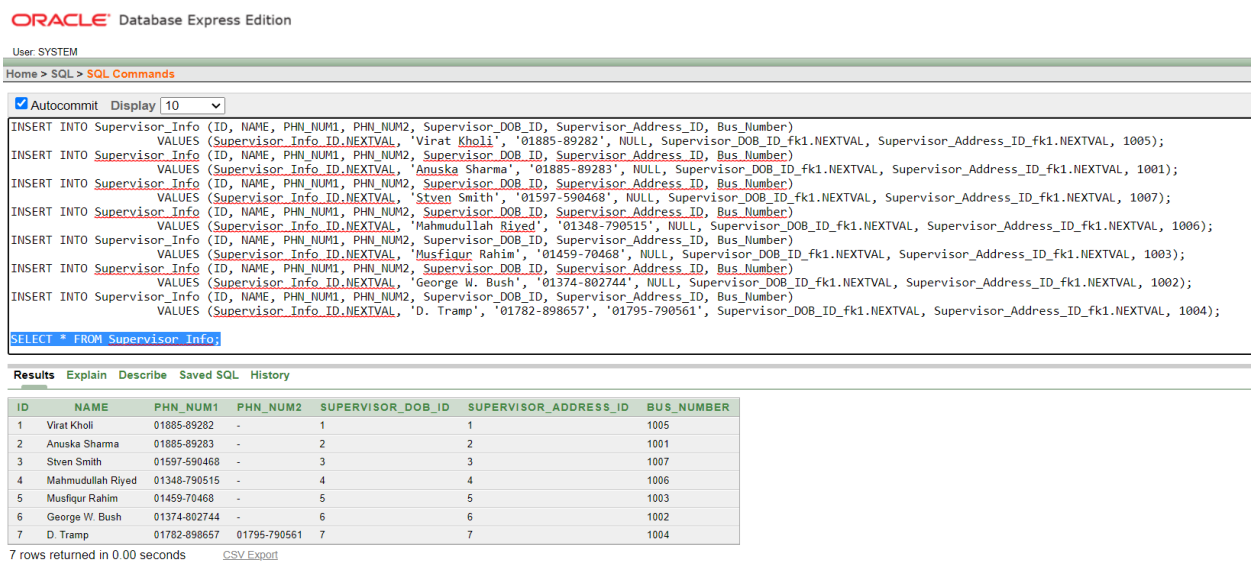
xv. Ticket

- INSERT INTO Ticket (NUM, Ticket_DATE, PRICE, SEAT_NUMBER, ID, Reservation_DATE, Conductor_ID, Passenger_ID)
  VALUES (Ticket_ID.NEXTVAL, TO_DATE('2023-05-10','yyyy-mm-dd'), 1050.00, 'A1, A2', Reservation_Info_ID.NEXTVAL, TO_DATE('2023-05-05', 'yyyy-mm-dd'), Conductor_Info_ID_fk1.NEXTVAL, Passenger_Info_ID_fk2.NEXTVAL);
- INSERT INTO Ticket (NUM, Ticket_DATE, PRICE, SEAT_NUMBER, ID, Reservation_DATE, Conductor_ID, Passenger_ID)
  VALUES (Ticket_ID.NEXTVAL, TO_DATE('2023-07-15', 'yyyy-mm-dd'), 1050.00, 'D3, D4', Reservation_Info_ID.NEXTVAL, TO_Date('2023-05-05', 'yyyy-mm-dd'), Conductor_Info_ID_fk1.NEXTVAL, Passenger_Info_ID_fk2.NEXTVAL);
- INSERT INTO Ticket (NUM, Ticket_DATE, PRICE, SEAT_NUMBER, ID, Reservation_DATE, Conductor_ID, Passenger_ID)
  VALUES (Ticket_ID.NEXTVAL, TO_DATE('2023-06-11', 'yyyy-mm-dd'), 3800.00, 'B1, B2, B3, B4, C1', Reservation_Info_ID.NEXTVAL, TO_DATE('2023-05-05', 'yyyy-mm-dd'), Conductor_Info_ID_fk1.NEXTVAL, Passenger_Info_ID_fk2.NEXTVAL);
- INSERT INTO Ticket (NUM, Ticket_DATE, PRICE, SEAT_NUMBER, ID, Reservation_DATE, Conductor_ID, Passenger_ID)
  VALUES (Ticket_ID.NEXTVAL, TO_DATE('2023-10-21', 'yyyy-mm-dd'), 1500.00, 'D1, D2, D3', Reservation_Info_ID.NEXTVAL, TO_DATE('2023-10-21', 'yyyy-mm-dd'), Conductor_Info_ID_fk1.NEXTVAL, Passenger_Info_ID_fk2.NEXTVAL);
- INSERT INTO Ticket (NUM, Ticket_DATE, PRICE, SEAT_NUMBER, ID, Reservation_DATE, Conductor_ID, Passenger_ID)
  VALUES (Ticket_ID.NEXTVAL, TO_DATE('2023-05-10','yyyy-mm-dd'), 750.00, 'A1', Reservation_Info_ID.NEXTVAL, TO_DATE('2023-05-05', 'yyyy-mm-dd'), Conductor_Info_ID_fk1.NEXTVAL, Passenger_Info_ID_fk2.NEXTVAL);
- INSERT INTO Ticket (NUM, Ticket_DATE, PRICE, SEAT_NUMBER, ID, Reservation_DATE, Conductor_ID, Passenger_ID)
  VALUES (Ticket_ID.NEXTVAL, TO_DATE('2023-05-11','yyyy-mm-dd'), 480.00, 'A1', Reservation_Info_ID.NEXTVAL, TO_DATE('2023-05-05', 'yyyy-mm-dd'), Conductor_Info_ID_fk1.NEXTVAL, Passenger_Info_ID_fk2.NEXTVAL);
- INSERT INTO Ticket (NUM, Ticket_DATE, PRICE, SEAT_NUMBER, ID, Reservation_DATE, Conductor_ID, Passenger_ID)
  VALUES (Ticket_ID.NEXTVAL, TO_DATE('2023-01-06','yyyy-mm-dd'), 450.00, 'A1', Reservation_Info_ID.NEXTVAL, TO_DATE('023-01-06', 'yyyy-mm-dd'), Conductor_Info_ID_fk1.NEXTVAL, Passenger_Info_ID_fk2.NEXTVAL);



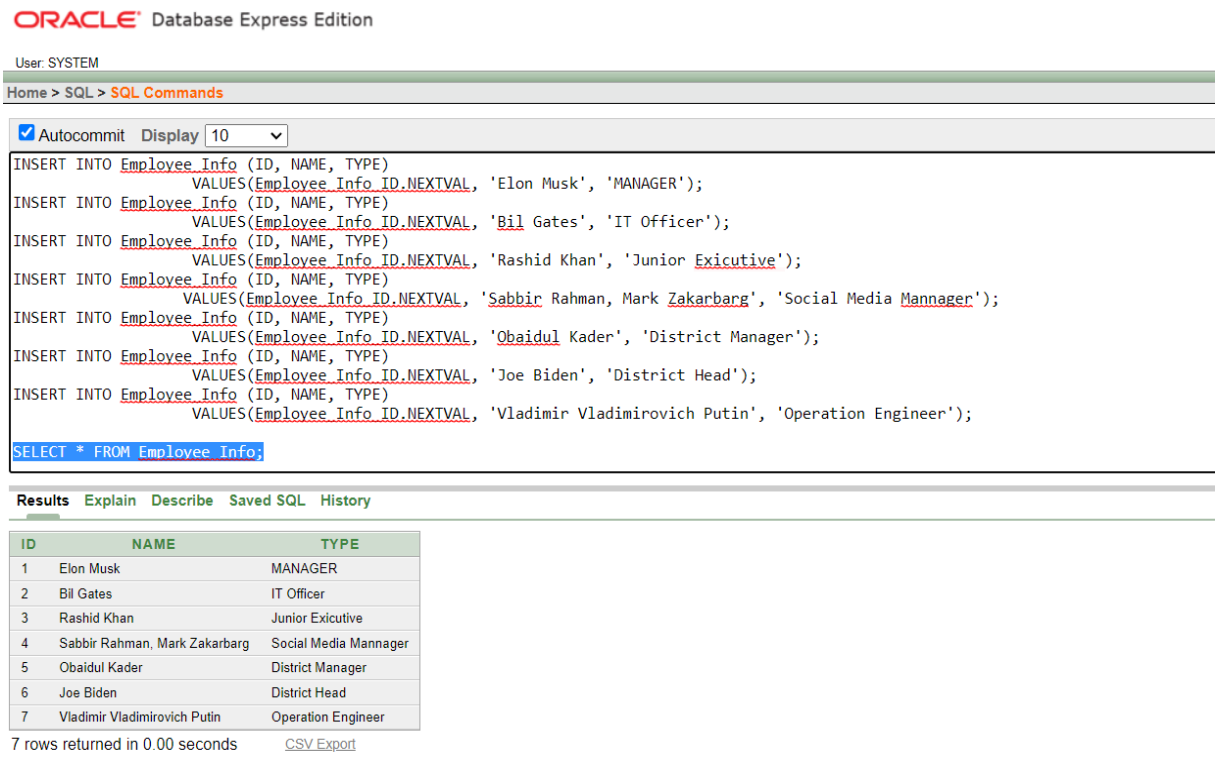
xvi. Supervisor_Info

- INSERT INTO Supervisor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, Supervisor_DOB_ID, Supervisor_Address_ID, Bus_Number)
  VALUES (Supervisor_Info_ID.NEXTVAL, 'Virat Kholi', '01885-89282', NULL, Supervisor_DOB_ID_fk1.NEXTVAL, Supervisor_Address_ID_fk1.NEXTVAL, 1005);
- INSERT INTO Supervisor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, Supervisor_DOB_ID, Supervisor_Address_ID, Bus_Number)
  VALUES (Supervisor_Info_ID.NEXTVAL, 'Anuska Sharma', '01885-89283', NULL, Supervisor_DOB_ID_fk1.NEXTVAL, Supervisor_Address_ID_fk1.NEXTVAL, 1001);
- INSERT INTO Supervisor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, Supervisor_DOB_ID, Supervisor_Address_ID, Bus_Number)
  VALUES (Supervisor_Info_ID.NEXTVAL, 'Stven Smith', '01597-590468', NULL, Supervisor_DOB_ID_fk1.NEXTVAL, Supervisor_Address_ID_fk1.NEXTVAL, 1007);
- INSERT INTO Supervisor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, Supervisor_DOB_ID, Supervisor_Address_ID, Bus_Number)
  VALUES (Supervisor_Info_ID.NEXTVAL, 'Mahmudullah Riyed', '01348-790515', NULL, Supervisor_DOB_ID_fk1.NEXTVAL, Supervisor_Address_ID_fk1.NEXTVAL, 1006);
- INSERT INTO Supervisor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, Supervisor_DOB_ID, Supervisor_Address_ID, Bus_Number)
  VALUES (Supervisor_Info_ID.NEXTVAL, 'Musfiqur Rahim', '01459-70468', NULL, Supervisor_DOB_ID_fk1.NEXTVAL, Supervisor_Address_ID_fk1.NEXTVAL, 1003);
- INSERT INTO Supervisor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, Supervisor_DOB_ID, Supervisor_Address_ID, Bus_Number)
  VALUES (Supervisor_Info_ID.NEXTVAL, 'George W. Bush', '01374-802744', NULL, Supervisor_DOB_ID_fk1.NEXTVAL, Supervisor_Address_ID_fk1.NEXTVAL, 1002);
- INSERT INTO Supervisor_Info (ID, NAME, PHN_NUM1, PHN_NUM2, Supervisor_DOB_ID, Supervisor_Address_ID, Bus_Number)
  VALUES (Supervisor_Info_ID.NEXTVAL, 'D. Tramp', '01782-898657', '01795-790561', Supervisor_DOB_ID_fk1.NEXTVAL, Supervisor_Address_ID_fk1.NEXTVAL, 1004);



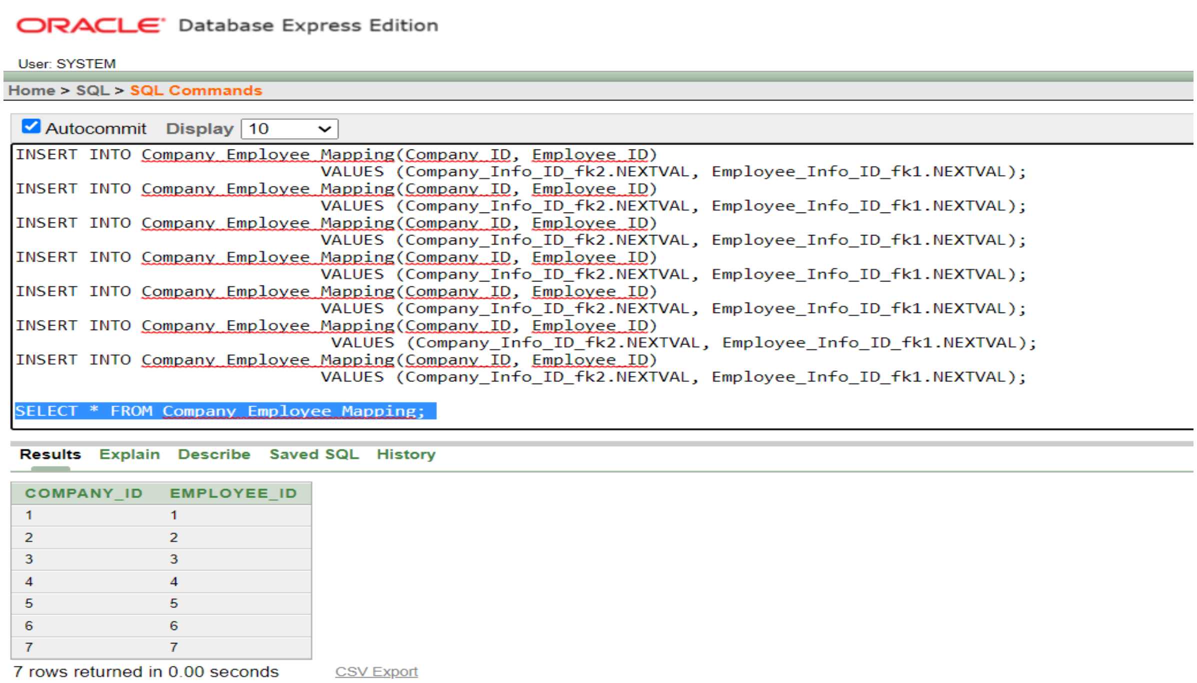
xvii. Employee_Info

- INSERT INTO Employee_Info (ID, NAME, TYPE)
  VALUES (Employee_Info_ID.NEXTVAL, 'Elon Musk', 'MANAGER');
- INSERT INTO Employee_Info (ID, NAME, TYPE)
  VALUES (Employee_Info_ID.NEXTVAL, 'Bil Gates', 'IT Officer');
- INSERT INTO Employee_Info (ID, NAME, TYPE)
  VALUES (Employee_Info_ID.NEXTVAL, 'Rashid Khan', 'Junior Exicutive');
- INSERT INTO Employee_Info (ID, NAME, TYPE)
  VALUES (Employee_Info_ID.NEXTVAL, 'Sabbir Rahman, Mark Zakarbarg', 'Social Media Mannager');
- INSERT INTO Employee_Info (ID, NAME, TYPE)
  VALUES (Employee_Info_ID.NEXTVAL, 'Obaidul Kader', 'District Manager');
- INSERT INTO Employee_Info (ID, NAME, TYPE)
  VALUES(Employee_Info_ID.NEXTVAL, 'Joe Biden', 'District Head');
- INSERT INTO Employee_Info (ID, NAME, TYPE)
  VALUES(Employee_Info_ID.NEXTVAL, 'Vladimir Vladimirovich Putin', 'Operation Engineer');



xviii. Company_Employee_Mapping

- INSERT INTO Company_Employee_Mapping (Company_ID, Employee_ID) VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
- INSERT INTO Company_Employee_Mapping (Company_ID, Employee_ID) VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
- INSERT INTO Company_Employee_Mapping (Company_ID, Employee_ID) VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
- INSERT INTO Company_Employee_Mapping (Company_ID, Employee_ID) VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
- INSERT INTO Company_Employee_Mapping (Company_ID, Employee_ID) VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
- INSERT INTO Company_Employee_Mapping (Company_ID, Employee_ID) VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
- INSERT INTO Company_Employee_Mapping (Company_ID, Employee_ID) VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);


ORACLE Database Express Edition

User: SYSTEM

Home > SQL > SQL Commands

Autocommit Display 10

```
INSERT INTO Company_Employee_Mapping(Company_ID, Employee_ID)
                    VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
INSERT INTO Company_Employee_Mapping(Company_ID, Employee_ID)
                    VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
INSERT INTO Company_Employee_Mapping(Company_ID, Employee_ID)
                    VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
INSERT INTO Company_Employee_Mapping(Company_ID, Employee_ID)
                    VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
INSERT INTO Company_Employee_Mapping(Company_ID, Employee_ID)
                    VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
INSERT INTO Company_Employee_Mapping(Company_ID, Employee_ID)
                     VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);
INSERT INTO Company_Employee_Mapping(Company_ID, Employee_ID)
                    VALUES (Company_Info_ID_fk2.NEXTVAL, Employee_Info_ID_fk1.NEXTVAL);

SELECT * FROM Company_Employee_Mapping;
```

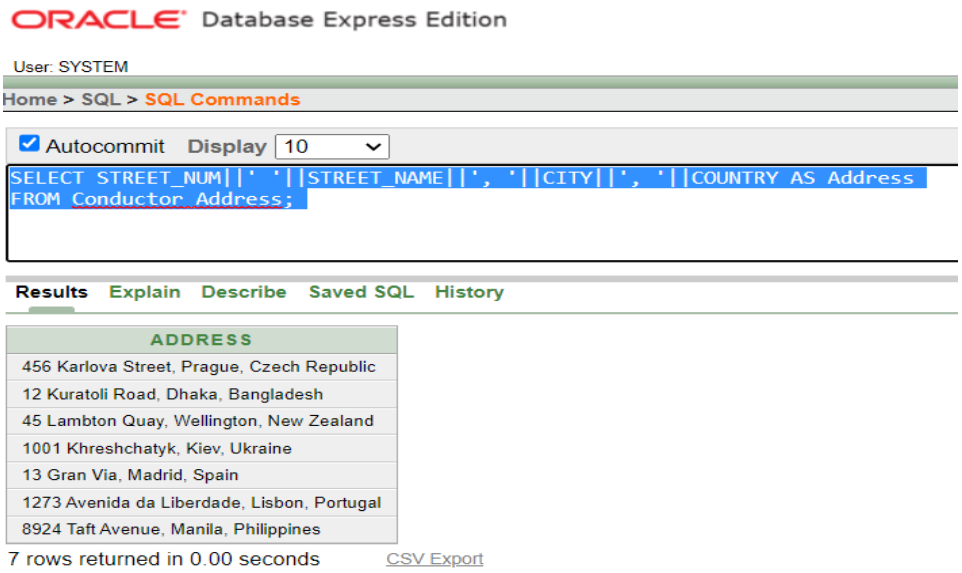
Results Explain Describe Saved SQL History

COMPANY_ID	EMPLOYEE_ID
1	1
2	2
3	3
4	4
5	5
6	6
7	7

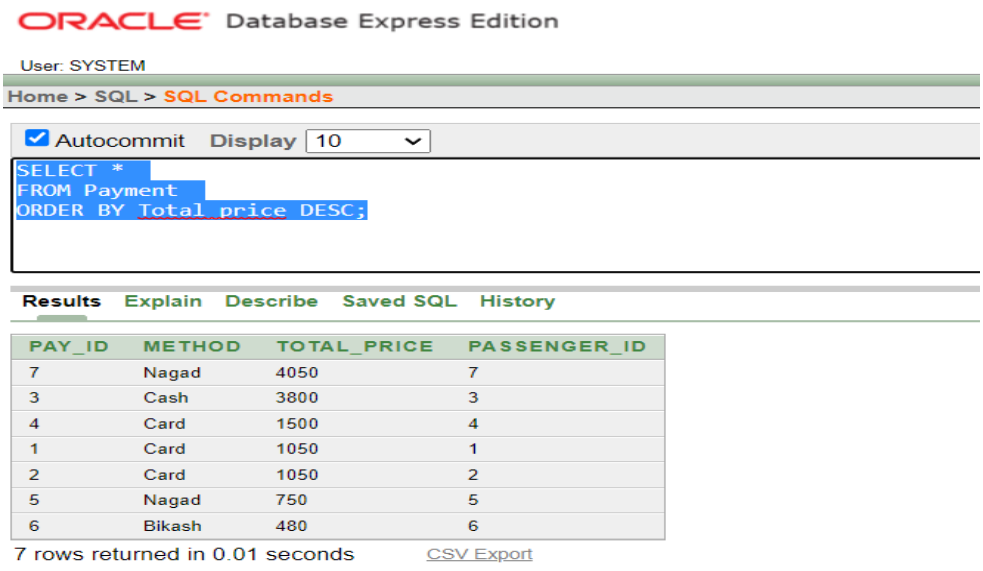
7 rows returned in 0.00 seconds CSV Export

d) Data Retrieval (Single Row Functions)

i. SELECT STREET_NUM||' '||STREET_NAME||', '||CITY||', '||COUNTRY AS Address
FROM Conductor_Address;

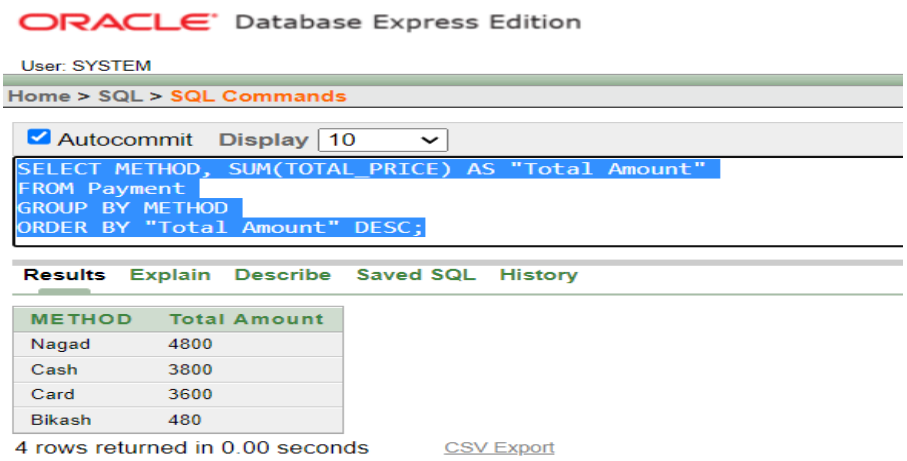


ii. SELECT *
FROM Payment
ORDER BY Total_price DESC;

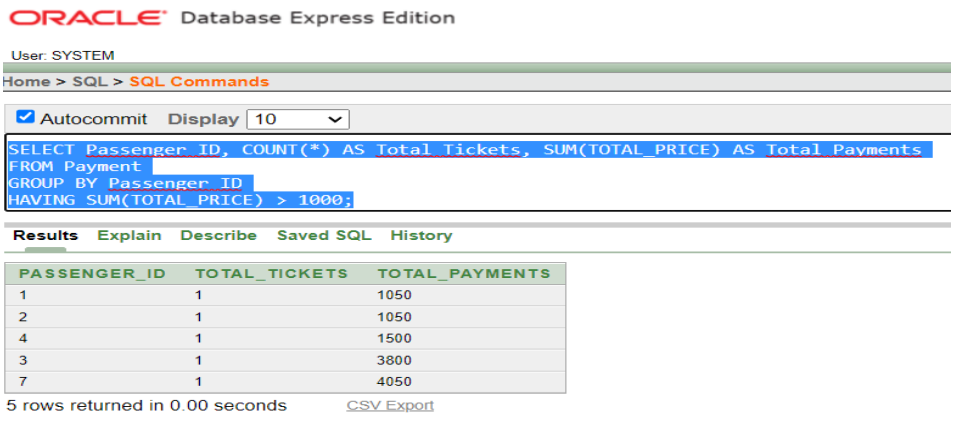


e) Data Aggregation (Group Functions)

i. SELECT METHOD, SUM(TOTAL_PRICE) AS “Total Amount”
FROM Payment
GROUP BY METHOD
ORDER BY “Total Amount”DESC;

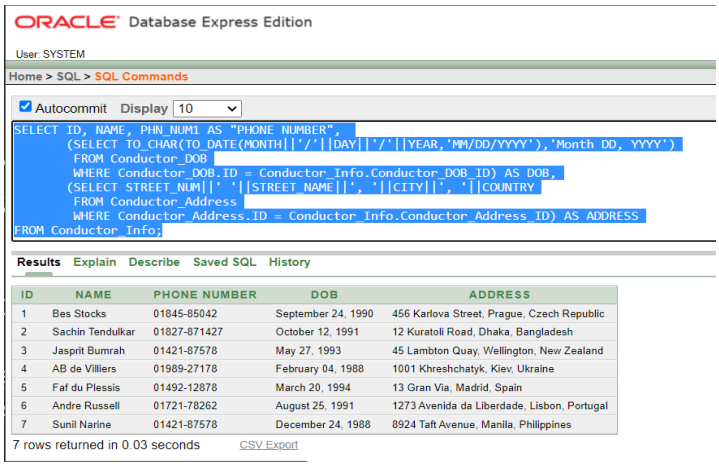


ii. SELECT Passenger_ID, COUNT(*) AS Total_Tickets, SUM(TOTAL_PRICE) AS Total_Payments
FROM Payment
GROUP BY Passenger_ID
HAVING SUM(TOTAL_PRICE) > 1000;

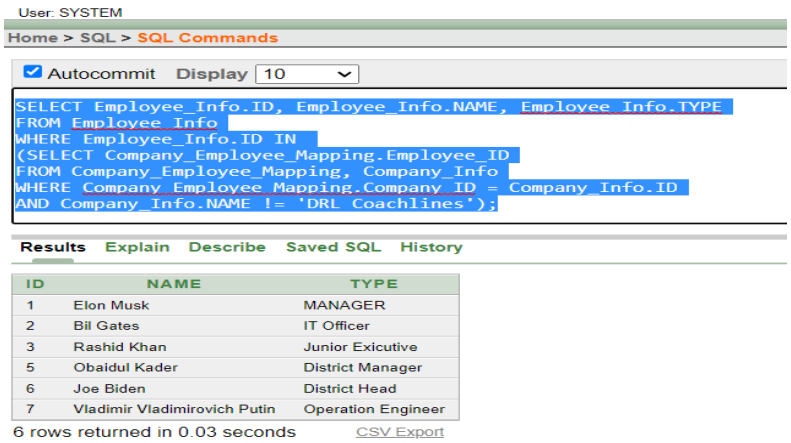


f) Sub Query:

i. SELECT ID, NAME, PHN_NUM1 AS "PHONE NUMBER",
(SELECT TO_CHAR(TO_DATE(MONTH||'/'||DAY||'/'||YEAR,'MM/DD/YYYY'),'Month DD, YYYY')
FROM Conductor_DOB
WHERE Conductor_DOB.ID = Conductor_Info.Conductor_DOB_ID) AS DOB,
(SELECT STREET_NUM||' '||STREET_NAME||', '||CITY||', '||COUNTRY
FROM Conductor_Address
WHERE Conductor_Address.ID = Conductor_Info.Conductor_Address_ID) AS ADDRESS
FROM Conductor_Info;

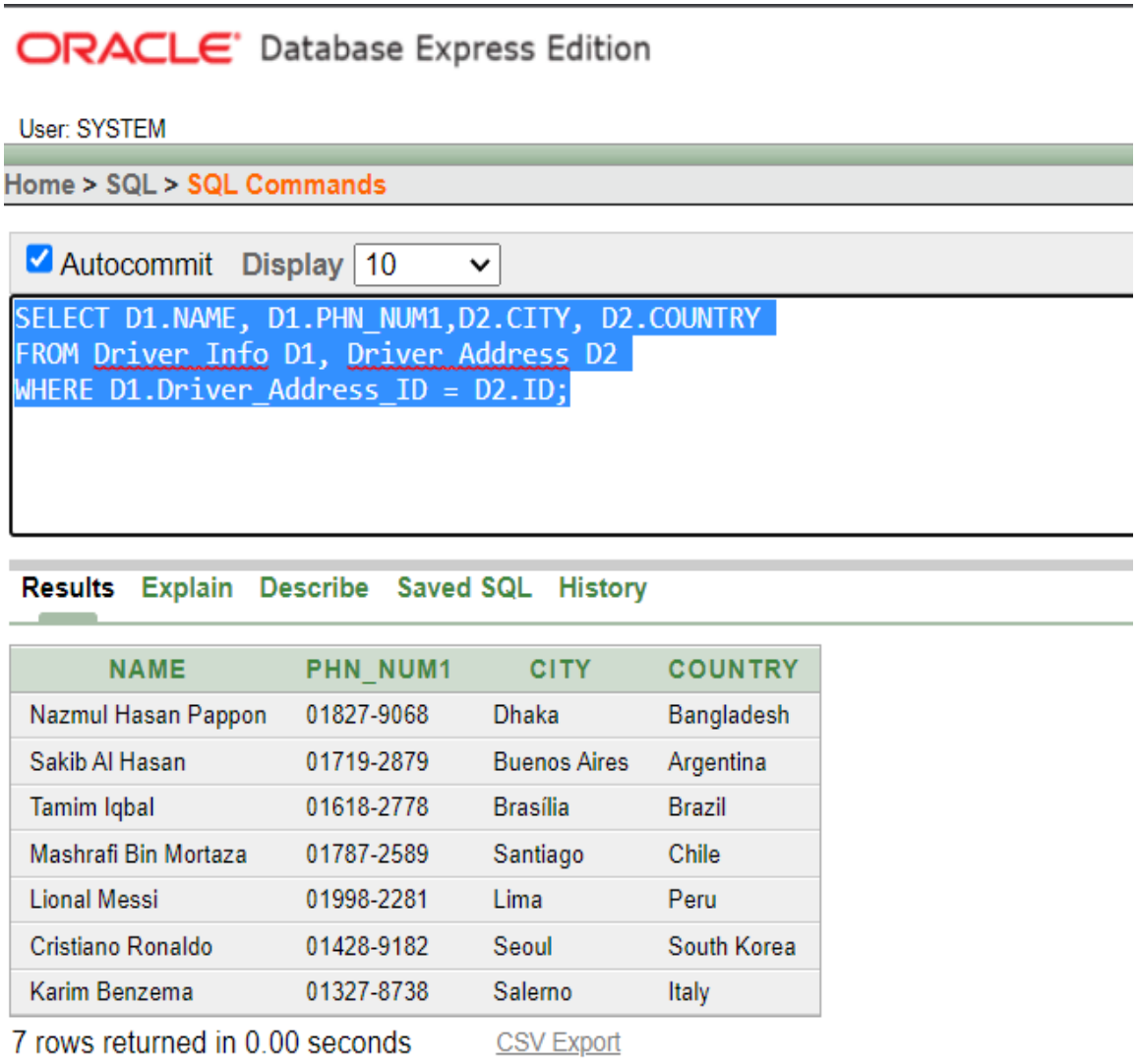


ii. SELECT Employee_Info.ID, Employee_Info.NAME, Employee_Info.TYPE
FROM Employee_Info
WHERE Employee_Info.ID IN
(SELECT Company_Employee_Mapping.Employee_ID
FROM Company_Employee_Mapping, Company_Info
WHERE Company_Employee_Mapping.Company_ID = Company_Info.ID
AND Company_Info.NAME != 'DRL Coachlines');



g) Joining:

i. SELECT D1.NAME, D1.PHN_NUM1,D2.CITY, D2.COUNTRY
FROM Driver_Info D1, Driver_Address D2
WHERE D1.Driver_Address_ID = D2.ID;

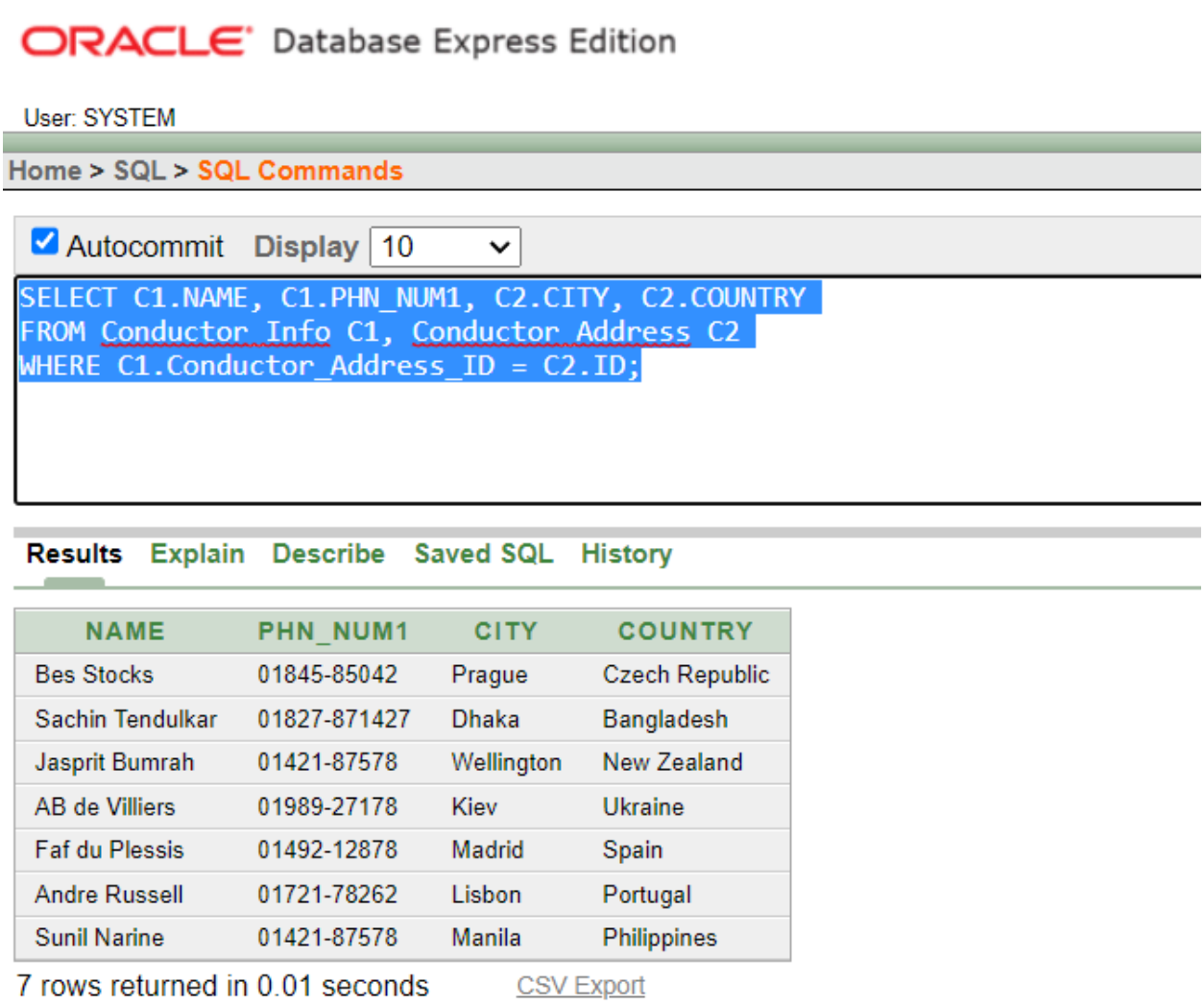


NAME	PHN_NUM1	CITY	COUNTRY
Nazmul Hasan Pappon	01827-9068	Dhaka	Bangladesh
Sakib Al Hasan	01719-2879	Buenos Aires	Argentina
Tamim Iqbal	01618-2778	Brasília	Brazil
Mashrafi Bin Mortaza	01787-2589	Santiago	Chile
Lional Messi	01998-2281	Lima	Peru
Cristiano Ronaldo	01428-9182	Seoul	South Korea
Karim Benzema	01327-8738	Salerno	Italy

7 rows returned in 0.00 seconds CSV Export

ii.

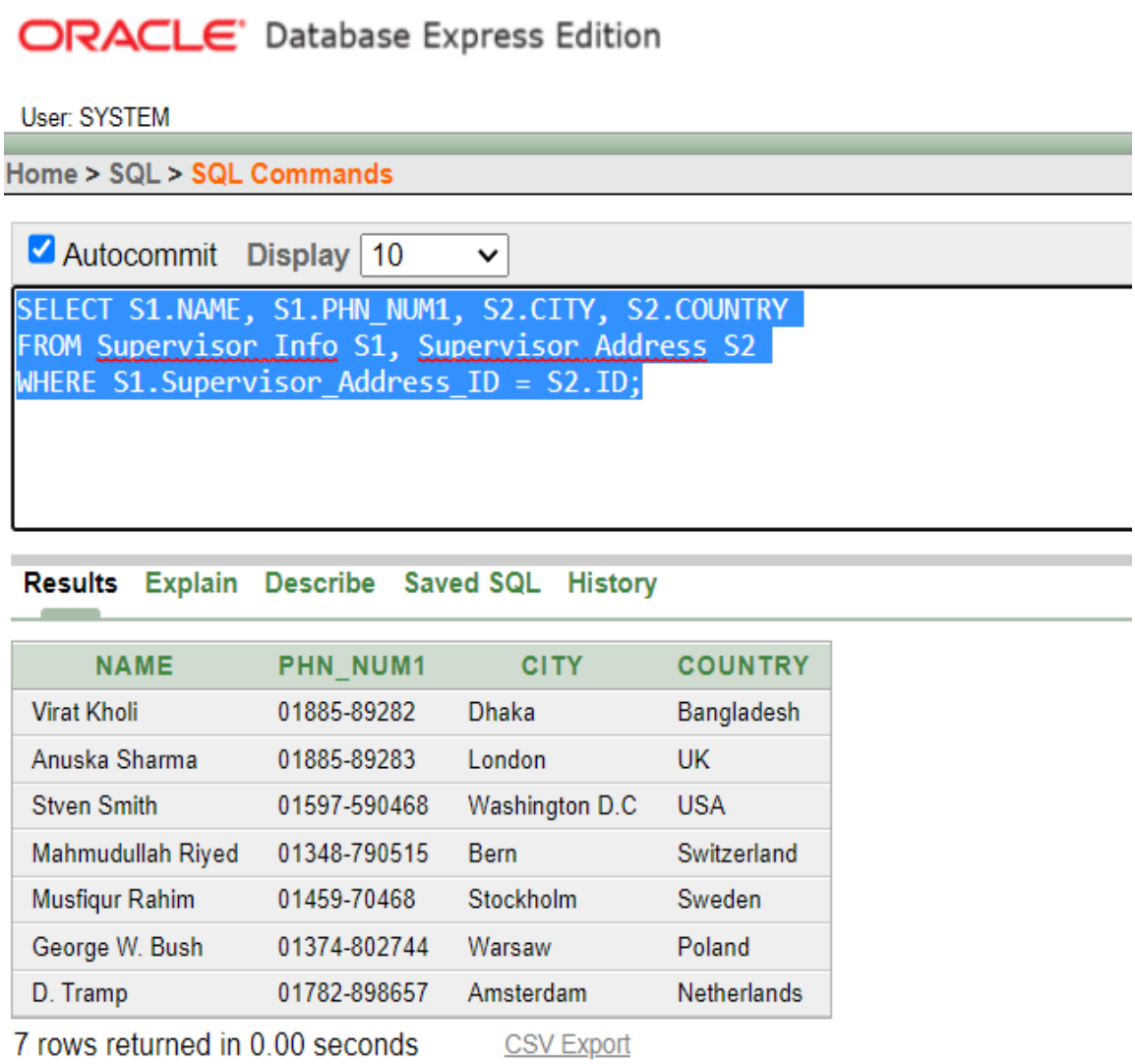
```
SELECT C1.NAME, C1.PHN_NUM1, C2.CITY, C2.COUNTRY
FROM Conductor_Info C1, Conductor_Address C2
WHERE C1.Conductor_Address_ID = C2.ID;
```



NAME	PHN_NUM1	CITY	COUNTRY
Bes Stocks	01845-85042	Prague	Czech Republic
Sachin Tendulkar	01827-871427	Dhaka	Bangladesh
Jasprit Bumrah	01421-87578	Wellington	New Zealand
AB de Villiers	01989-27178	Kiev	Ukraine
Faf du Plessis	01492-12878	Madrid	Spain
Andre Russell	01721-78262	Lisbon	Portugal
Sunil Narine	01421-87578	Manila	Philippines

7 rows returned in 0.01 seconds CSV Export

iii. SELECT S1.NAME, S1.PHN_NUM1, S2.CITY, S2.COUNTRY
FROM Supervisor_Info S1, Supervisor_Address S2
WHERE S1.Supervisor_Address_ID = S2.ID;

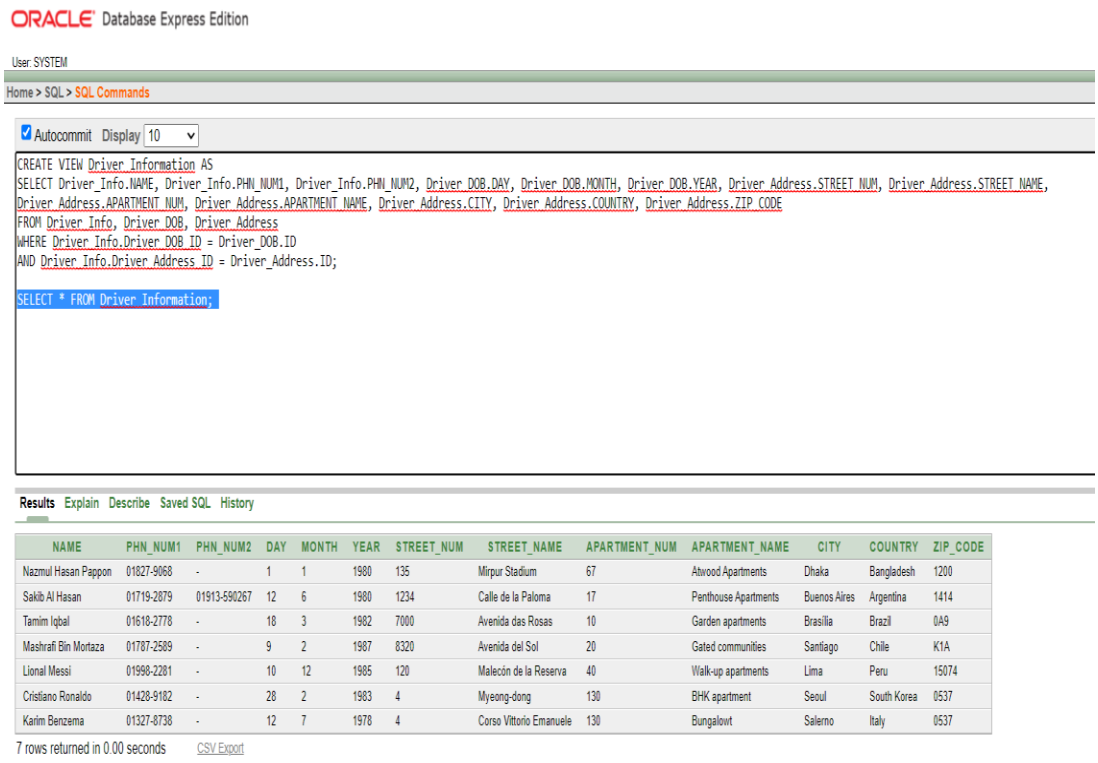


NAME	PHN_NUM1	CITY	COUNTRY
Virat Kholi	01885-89282	Dhaka	Bangladesh
Anuska Sharma	01885-89283	London	UK
Stven Smith	01597-590468	Washington D.C	USA
Mahmudullah Riyed	01348-790515	Bern	Switzerland
Musfiqur Rahim	01459-70468	Stockholm	Sweden
George W. Bush	01374-802744	Warsaw	Poland
D. Tramp	01782-898657	Amsterdam	Netherlands

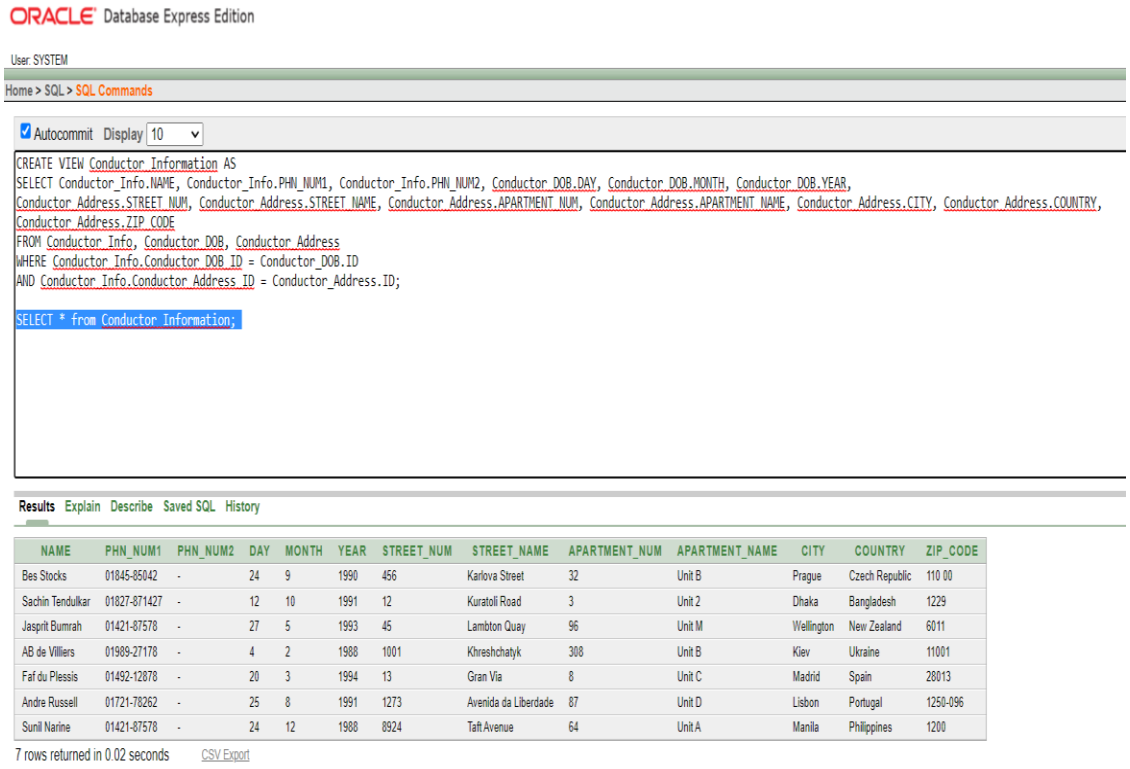
7 rows returned in 0.00 seconds CSV Export

h) View Creation:

i. CREATE VIEW Driver_Information AS
SELECT Driver_Info.NAME, Driver_Info.PHN_NUM1, Driver_Info.PHN_NUM2, Driver_DOB.DAY, Driver_DOB.MONTH, Driver_DOB.YEAR, Driver_Address.STREET_NUM, Driver_Address.STREET_NAME, Driver_Address.APARTMENT_NUM, Driver_Address.APARTMENT_NAME, Driver_Address.CITY, Driver_Address.COUNTRY, Driver_Address.ZIP_CODE
FROM Driver_Info, Driver_DOB, Driver_Address
WHERE Driver_Info.Driver_DOB_ID = Driver_DOB.ID
AND Driver_Info.Driver_Address_ID = Driver_Address.ID;



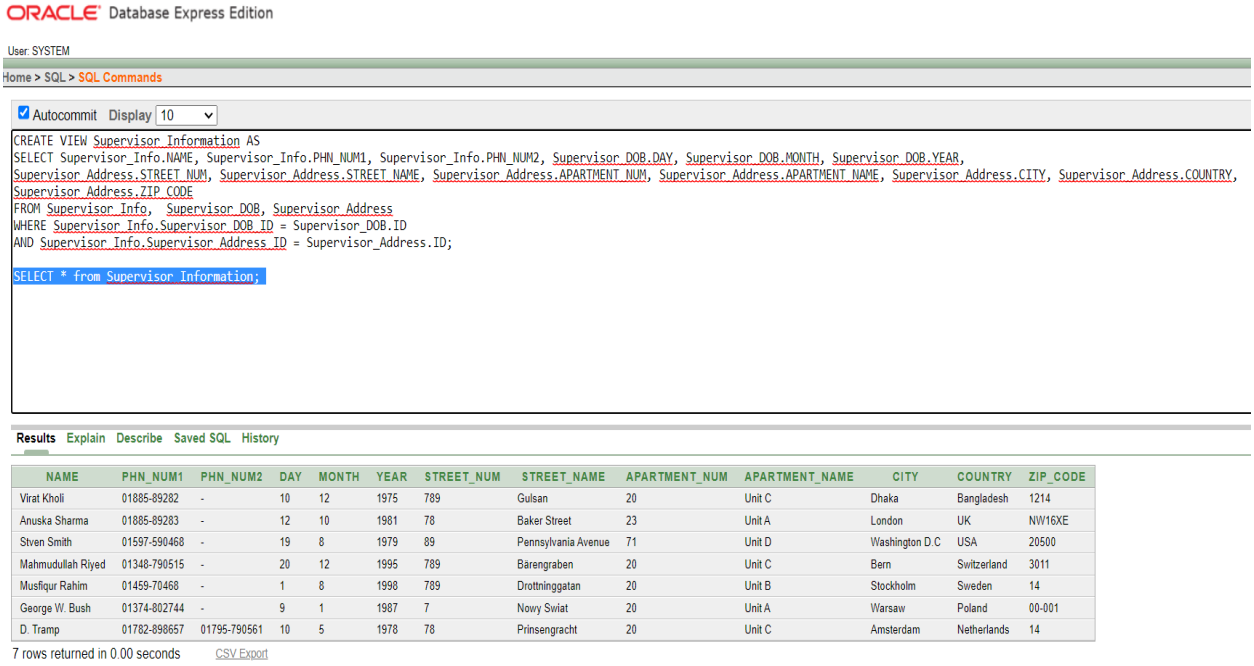
ii. CREATE VIEW Conductor_Information AS
SELECT Conductor_Info.NAME, Conductor_Info.PHN_NUM1, Conductor_Info.PHN_NUM2,
Conductor_DOB.DAY, Conductor_DOB.MONTH, Conductor_DOB.YEAR,
Conductor_Address.STREET_NUM, Conductor_Address.STREET_NAME,
Conductor_Address.APARTMENT_NUM, Conductor_Address.APARTMENT_NAME,
Conductor_Address.CITY, Conductor_Address.COUNTRY, Conductor_Address.ZIP_CODE
FROM Conductor_Info, Conductor_DOB, Conductor_Address
WHERE Conductor_Info.Conductor_DOB_ID = Conductor_DOB.ID
AND Conductor_Info.Conductor_Address_ID = Conductor_Address.ID;



NAME	PHN_NUM1	PHN_NUM2	DAY	MONTH	YEAR	STREET_NUM	STREET_NAME	APARTMENT_NUM	APARTMENT_NAME	CITY	COUNTRY	ZIP_CODE
Bes Stocks	01845-85042	-	24	9	1990	456	Karlova Street	32	Unit B	Prague	Czech Republic	110 00
Sachin Tendulkar	01827-871427	-	12	10	1991	12	Kuratoli Road	3	Unit 2	Dhaka	Bangladesh	1229
Jasprit Bumrah	01421-87578	-	27	5	1993	45	Lambton Quay	96	Unit M	Wellington	New Zealand	6011
AB de Villiers	01989-27178	-	4	2	1988	1001	Khreshchatyk	308	Unit B	Kiev	Ukraine	11001
Faf du Plessis	01492-12878	-	20	3	1994	13	Gran Via	8	Unit C	Madrid	Spain	28013
Andre Russell	01721-78262	-	25	8	1991	1273	Avenida da Liberdade	87	Unit D	Lisbon	Portugal	1250-096
Sunil Narine	01421-87578	-	24	12	1988	8924	Taft Avenue	64	Unit A	Manila	Philippines	1200

7 rows returned in 0.02 seconds CSV Export

iii. CREATE VIEW Supervisor_Information AS
SELECT Supervisor_Info.NAME, Supervisor_Info.PHN_NUM1, Supervisor_Info.PHN_NUM2, Supervisor_DOB.DAY, Supervisor_DOB.MONTH, Supervisor_DOB.YEAR, Supervisor_Address.STREET_NUM, Supervisor_Address.STREET_NAME, Supervisor_Address.APARTMENT_NUM, Supervisor_Address.APARTMENT_NAME, Supervisor_Address.CITY, Supervisor_Address.COUNTRY, Supervisor_Address.ZIP_CODE
FROM Supervisor_Info, Supervisor_DOB, Supervisor_Address
WHERE Supervisor_Info.Supervisor_DOB_ID = Supervisor_DOB.ID
AND Supervisor_Info.Supervisor_Address_ID = Supervisor_Address.ID;



7. Relational Algebra Expressions:

1. Find the PASSENGER NAME WHERE the total price is more than 1000 from Passenger_info Table.
   $\prod_{NAME}(\sigma_{TOTAL\_PRICE>1000}(\text{Payment} \bowtie \text{Passenger\_Info}))$

2. Find the payment method WHERE the total price is more than 2000 from Passenger_info Table.
   $\prod_{METHOD}(\sigma_{TOTAL\_PRICE>2000}(\text{Payment}))$

3. Find the ticket date, reservation date and seat number from the Ticket_Info table where the ticket date and reservation date are same.
   $\prod_{TICKET\_DATE,\ RESERVATION\_DATE,\ SEAT\_NUMBER}(\sigma_{TICKET\_DATE\ =\ RESERVATION\_DATE,}(\text{Ticket\_Info}))$

4. Find the employee's name from the employee_Info table where the employee type is IT Officer.
   $\prod_{NAME}(\sigma_{type\ =\ \text{“IT Officer”}}(\text{Employee\_Info}))$

5. Find the names of all the routes from the Bus_Info table where bus capacity is more than equal to 55.
   $\prod_{ROUTE}(\sigma_{CAPACITY\ >=\ 55}(\text{Bus\_Info}))$