DBS Lab Project

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INTRODUCTION OF THE ENTERPRISE:

TITLE: Railway Reservation System

The railway reservation system facilitates the passengers to enquire about the trains. It has several entities. Such as information about customers trains, station its different fares and booking and cancellation. It is a database, and it saves all the records. Basically, it is designed to facilitates the passengers to enquiry about the trains available on the basis of source and destination, booking and cancellation of tickets, enquiry about the status of the booked ticket, etc.

Functions Of the System:

IT has several functions such as it stores information about the **customers** it gives them a unique user id. Saves their basic information such as their name, age, email, phone number, cnic, state etc. This system also tells reservation status and seat number.

It also has the information about the **trains.** The trains have their unique number through which they are identified. It has Information about its arrival and departure timings.

As **Railway stations** have several stops so it is also important to save the information about the stations such as their name and station number and when the next train will arrive.

Railway Stations have **fare** which all the passengers give in order to get into the train, so it also has its information.

Pre-Booking Is also Included in this system and so as cancellation which is done by deleting the data of the existing user.

END USERS:

The End users are who actually uses the product. In this project the end users can be common people. Which want to travel through railways and also want to enquire about data it.

Data Obsolescence will be handled:

It Is how will be the data will be handled in it without loss. As it is a data base system so it has the ability to main integrity of the data by maintaining different relationships and constraints can also be added as it is a data base system, so it has minimum redundancy and duplication. We also have tried to establish it with proper relationships.

Idea Of this Project:

We got the idea of this project through internet by visiting different websites to see want does a railway system do. The main idea we got that it is designed to facilitates the passengers to enquiry about the trains available on the basis of source and destination, booking and cancellation of tickets, enquiry about the status of the booked ticket, etc.

Entity No 1 - Customers:

It gives them a unique user id. Saves their basic information such as their name, age, email, phone number, cnic, state etc. It will be used by railway station workers in order to maintain their passengers' records.

2 - Train:

It also has the information about the **trains.** The trains have their unique number through which they are identified. It has Information about its arrival and departure timings. It will be used by users in order to check the information about the trains without this it would be very difficult for them to travel.

3 - Station:

It has the information about the station such as station name its number it is also mainly used by the passengers for their convenience.

4 - Fare:

Different trains have different kinds of fares according to their facilities. It Is decided by the authorities, and it is important for passengers for their information.

5 - Passenger:

When the Person enters the train it becomes passenger so it has attributes such as what is their seat number also their common information and most importantly their ticket number**.**

6 - Ticket:

It is also an important entity in our project it contains information about the tickets and how many tickets a passenger has purchased and their ids also both the above are directly important for the users.

7 - Booking and Cancellation:

If a person wants to book advance, he can take help from this. It gives them A booking number.

If a person wants to cancel its booking, he can use this attribute this can be done by dropping that table from the database on basis of their user id.

Relationship and its types:

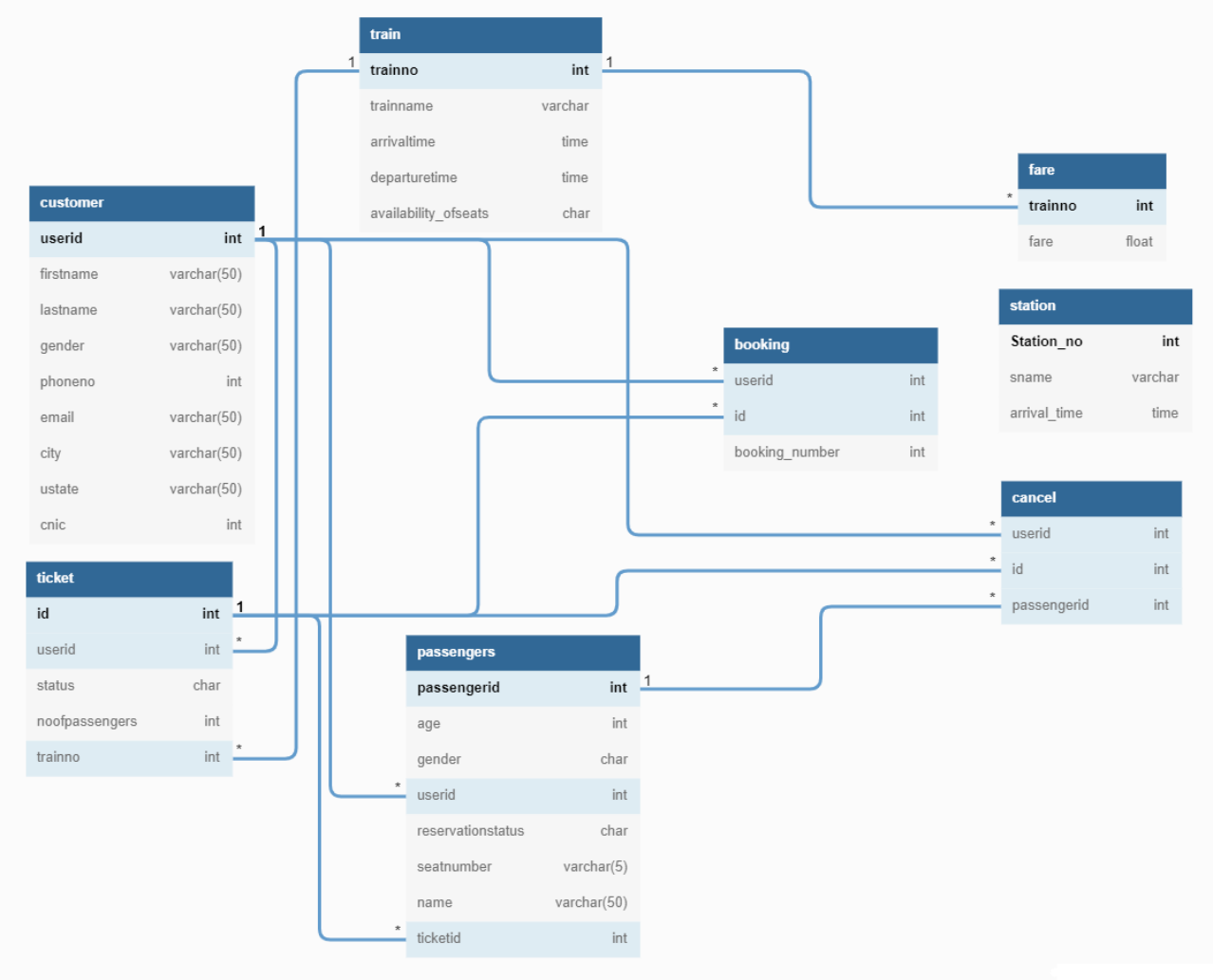
Booking ternary relation between user train passenger and ticket.

Cancellation between user and ticket.

Fare between user and train.

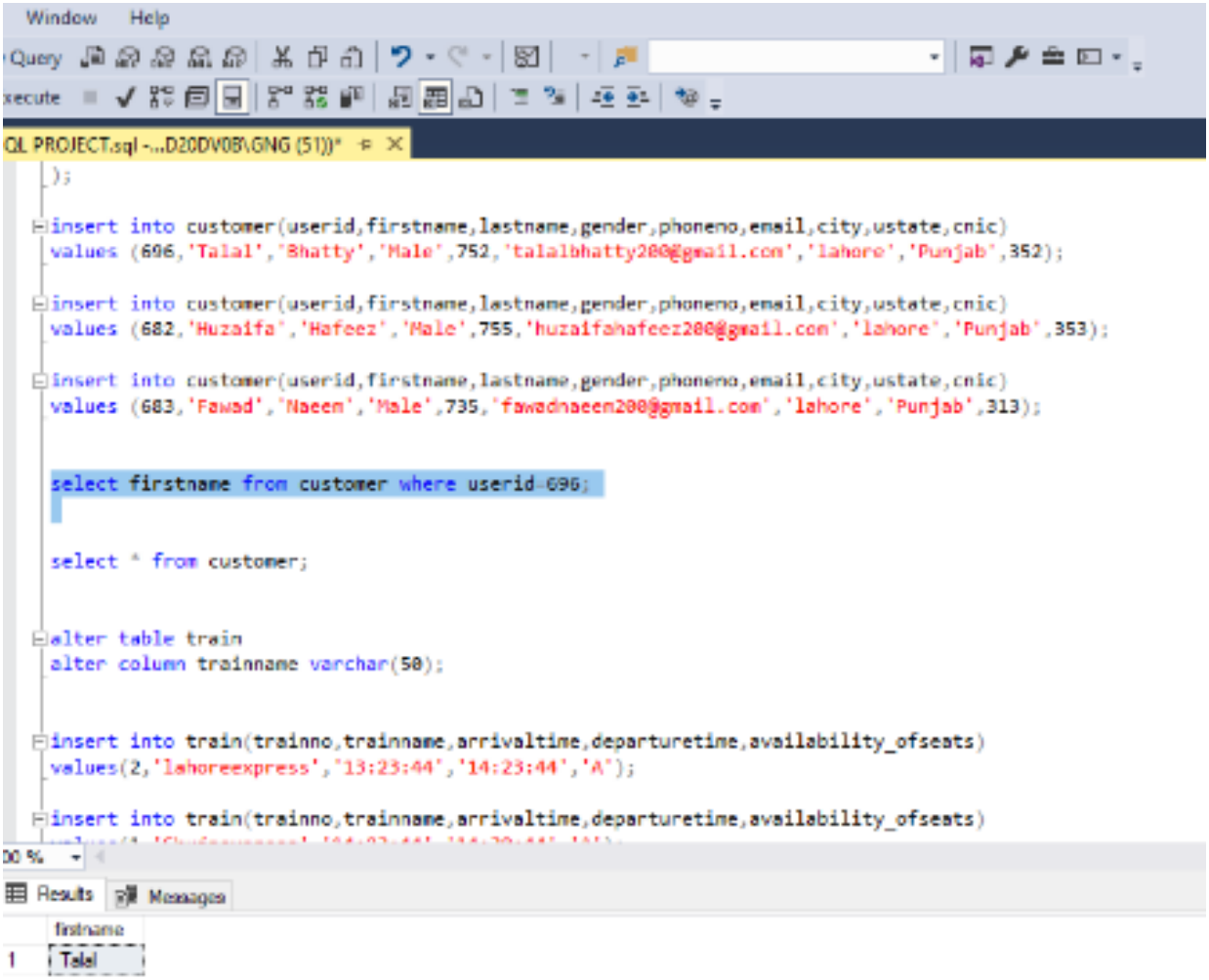
The other are also given below in ER Diagram.

ER Diagram:

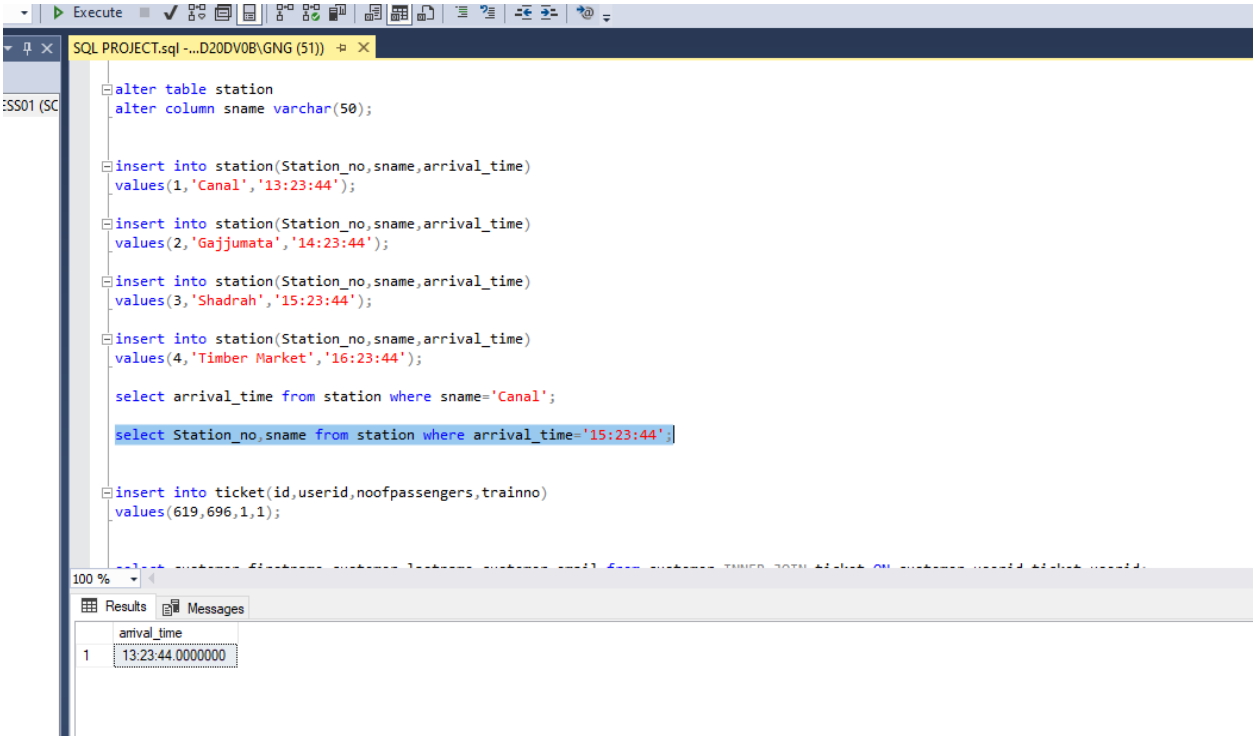

train
trainno int
trainname varchar
arrivaltime time
departuretime time
availability_ofseats char
fare
trainno int
fare float
customer
userid int
firstname varchar(50)
lastname varchar(50)
gender varchar(50)
phoneno int
email varchar(50)
city varchar(50)
ustate varchar(50)
cnic int
booking
userid int
id int
booking_number int
station
Station_no int
sname varchar
arrival_time time
cancel
userid int
id int
passengerid int
ticket
id int
userid int
status char
noofpassengers int
trainno int
passengers
passengerid int
age int
gender char
userid int
reservationstatus char
seatnumber varchar(5)
name varchar(50)
ticketid int

Frequent Queries:

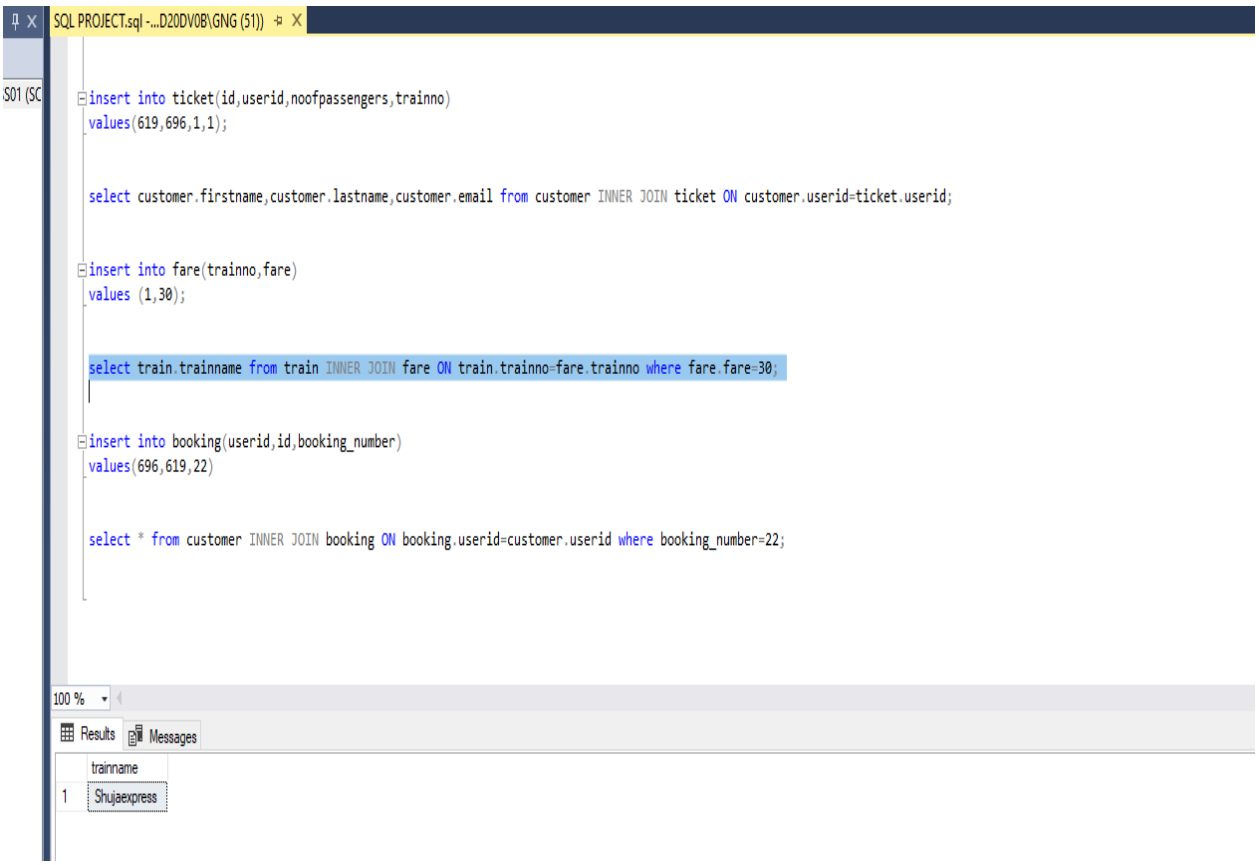
1:



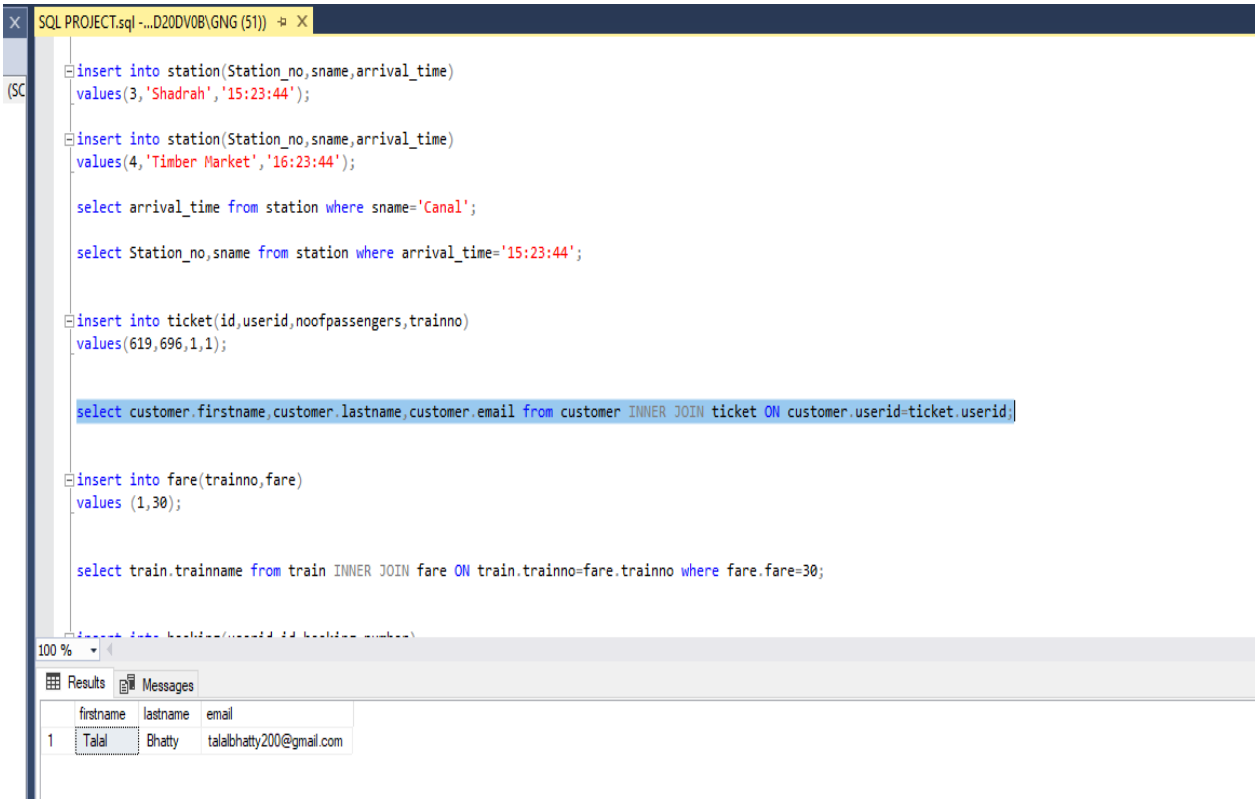
2:


Execute
SQL PROJECT.sql -...D20DV0B\GNG (51))
alter table station
alter column sname varchar(50);
insert into station(Station_no,sname,arrival_time)
values(1,'Canal','13:23:44');
insert into station(Station_no,sname,arrival_time)
values(2,'Gajjumata','14:23:44');
insert into station(Station_no,sname,arrival_time)
values(3,'Shadrah','15:23:44');
insert into station(Station_no,sname,arrival_time)
values(4,'Timber Market','16:23:44');
select arrival_time from station where sname='Canal';
select Station_no,sname from station where arrival_time='15:23:44';
insert into ticket(id,userid,noofpassengers,trainno)
values(619,696,1,1);
100 %
Results
Messages
arrival_time
1
13:23:44.0000000

3: By USING JOINS



4:BY USING JOINS



5:

SQL PROJECT.sql -...D20DV0B\GNG (51))

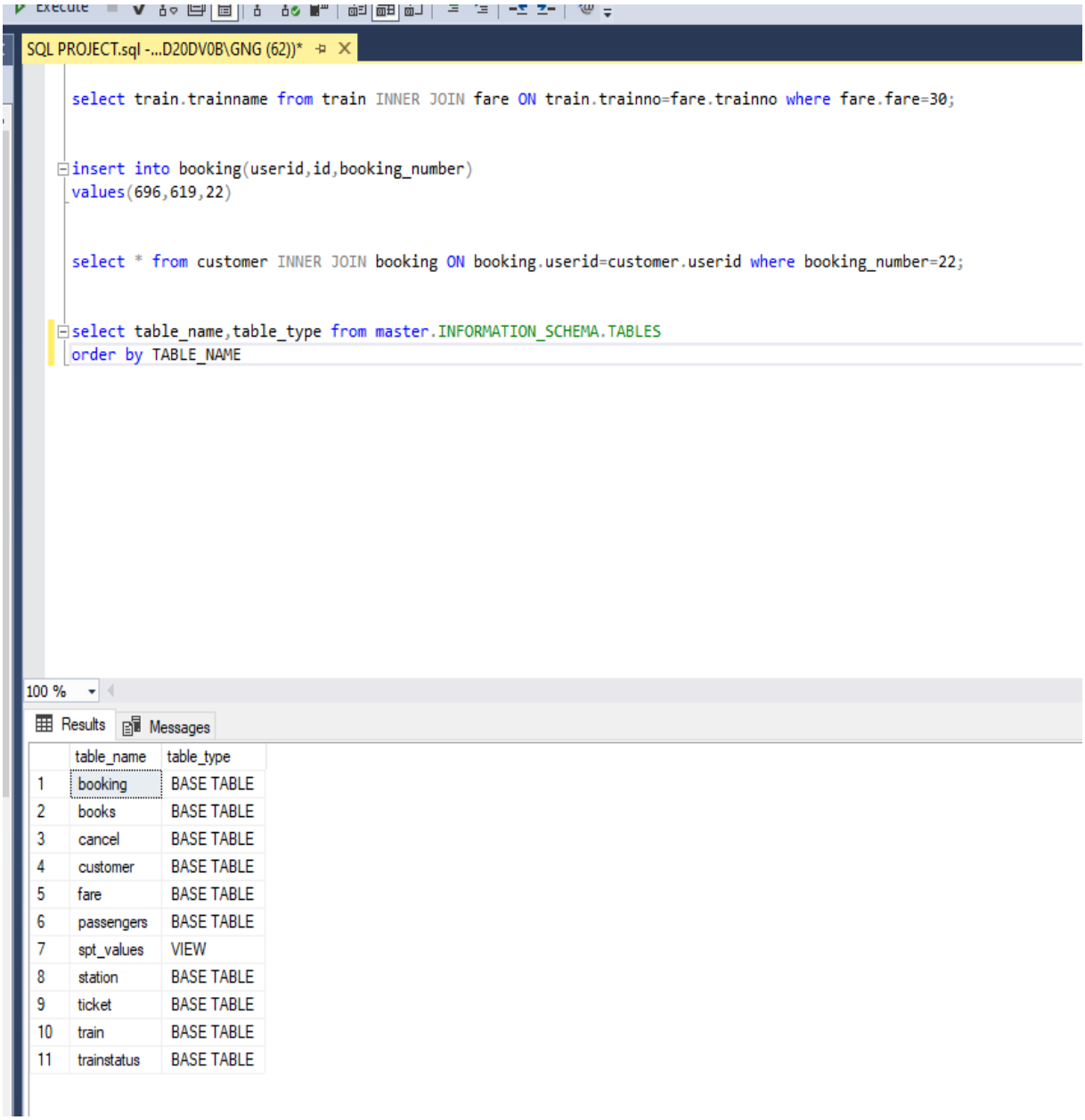
```
select * from customer;


alter table train
alter column trainname varchar(50);


insert into train(trainno,trainname,arrivaltime,departuretime,availability_ofseats)
values(2,'lahoreexpress','13:23:44','14:23:44','A');

insert into train(trainno,trainname,arrivaltime,departuretime,availability_ofseats)
values(1,'Shujaexpress','14:23:44','14:30:44','A');

insert into passengers(passengerid,age,gender,seatnumber,userid,reservationstatus)
values(1,20,'M',5,696,'A')


select trainno from train where trainname='lahoreexpress';


alter table station
alter column sname varchar(50);


insert into station(Station_no,sname,arrival_time)
```

100 %

Results | Messages

	trainno
1	2

DATA DICTIONARY:

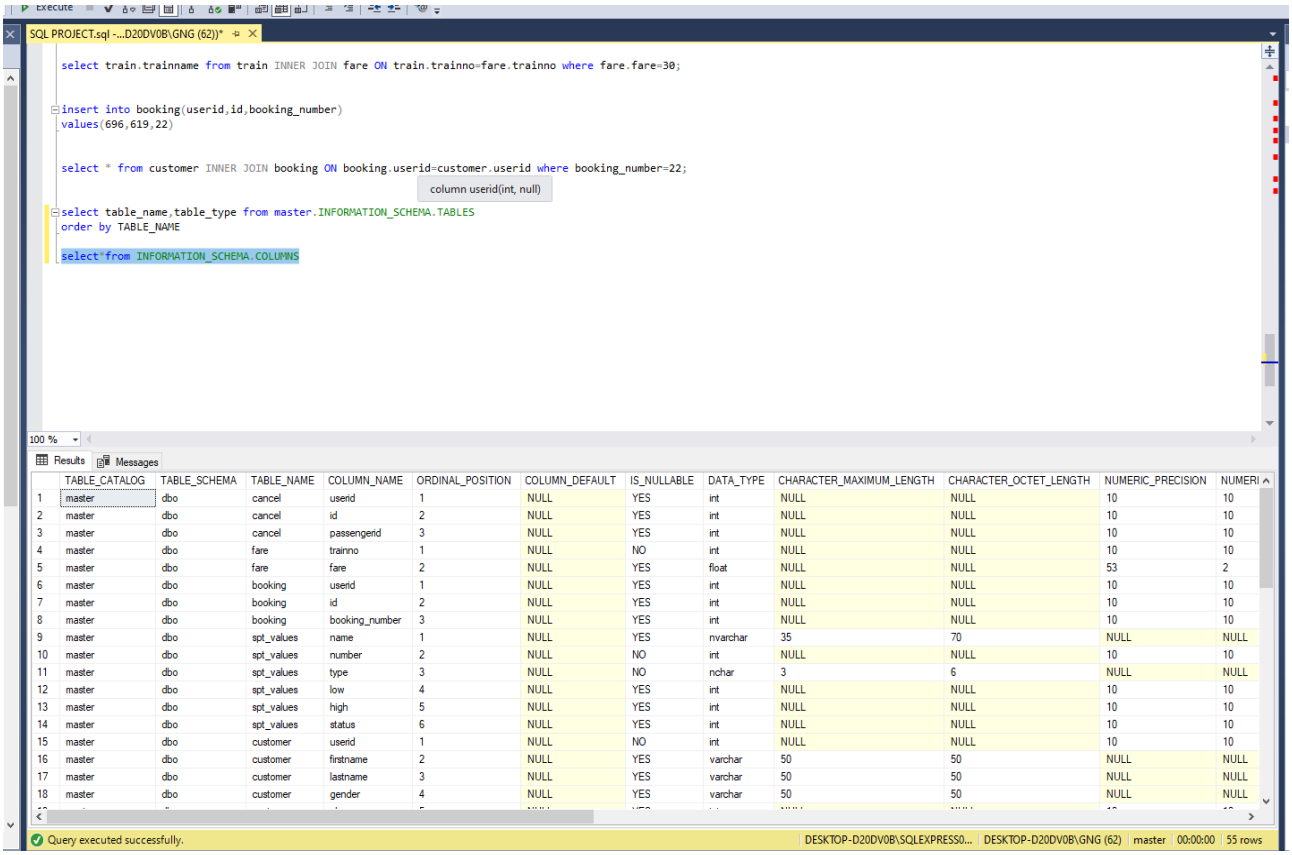


	table_name	table_type
1	booking	BASE TABLE
2	books	BASE TABLE
3	cancel	BASE TABLE
4	customer	BASE TABLE
5	fare	BASE TABLE
6	passengers	BASE TABLE
7	spt_values	VIEW
8	station	BASE TABLE
9	ticket	BASE TABLE
10	train	BASE TABLE
11	trainstatus	BASE TABLE

Query:

select table_name,table_type from master.INFORMATION_SCHEMA.TABLES

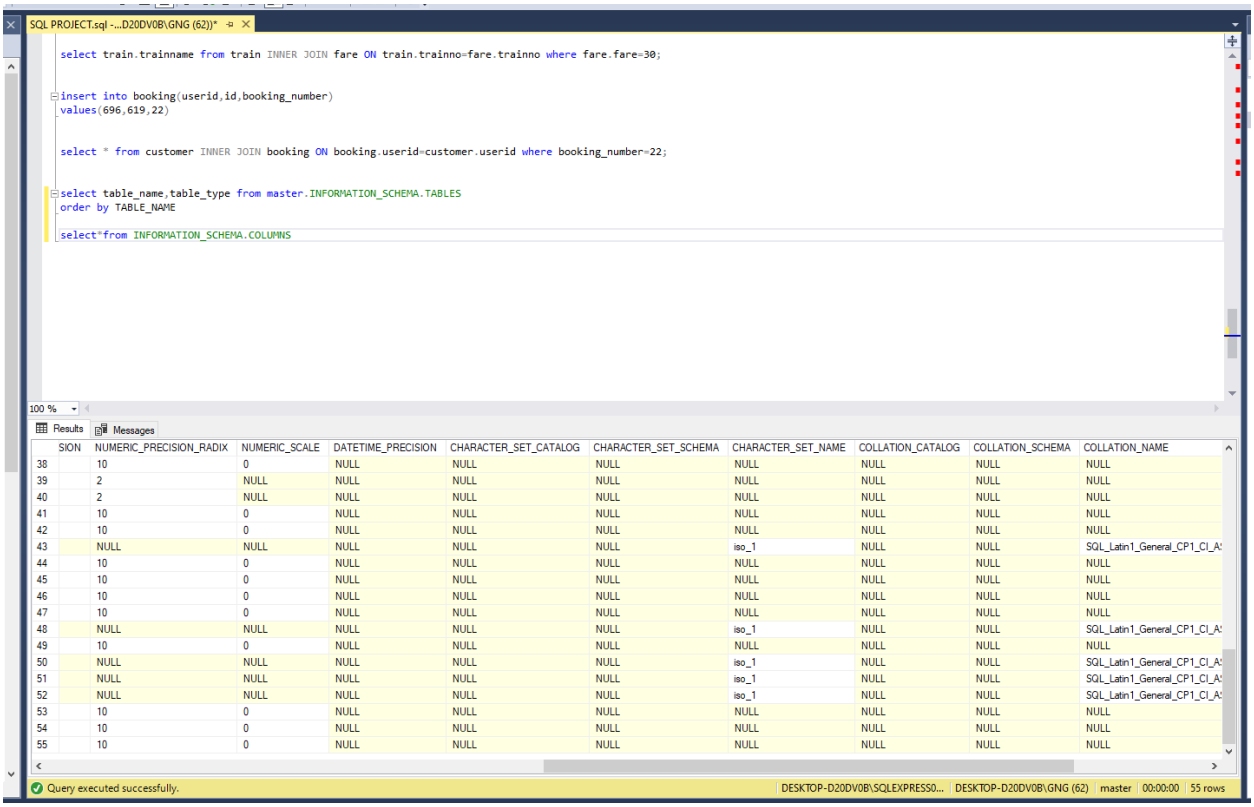
order by TABLE_NAME



	TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME	COLUMN_NAME	ORDINAL_POSITION	COLUMN_DEFAULT	IS_NULLABLE	DATA_TYPE	CHARACTER_MAXIMUM_LENGTH	CHARACTER_OCTET_LENGTH	NUMERIC_PRECISION	NUMERI
1	master	dbo	cancel	userid	1	NULL	YES	int	NULL	NULL	10	10
2	master	dbo	cancel	id	2	NULL	YES	int	NULL	NULL	10	10
3	master	dbo	cancel	passengerid	3	NULL	YES	int	NULL	NULL	10	10
4	master	dbo	fare	trainno	1	NULL	NO	int	NULL	NULL	10	10
5	master	dbo	fare	fare	2	NULL	YES	float	NULL	NULL	53	2
6	master	dbo	booking	userid	1	NULL	YES	int	NULL	NULL	10	10
7	master	dbo	booking	id	2	NULL	YES	int	NULL	NULL	10	10
8	master	dbo	booking	booking_number	3	NULL	YES	int	NULL	NULL	10	10
9	master	dbo	spt_values	name	1	NULL	YES	nvarchar	35	70	NULL	NULL
10	master	dbo	spt_values	number	2	NULL	NO	int	NULL	NULL	10	10
11	master	dbo	spt_values	type	3	NULL	NO	nchar	3	6	NULL	NULL
12	master	dbo	spt_values	low	4	NULL	YES	int	NULL	NULL	10	10
13	master	dbo	spt_values	high	5	NULL	YES	int	NULL	NULL	10	10
14	master	dbo	spt_values	status	6	NULL	YES	int	NULL	NULL	10	10
15	master	dbo	customer	userid	1	NULL	NO	int	NULL	NULL	10	10
16	master	dbo	customer	firstname	2	NULL	YES	varchar	50	50	NULL	NULL
17	master	dbo	customer	lastname	3	NULL	YES	varchar	50	50	NULL	NULL
18	master	dbo	customer	gender	4	NULL	YES	varchar	50	50	NULL	NULL

Query:

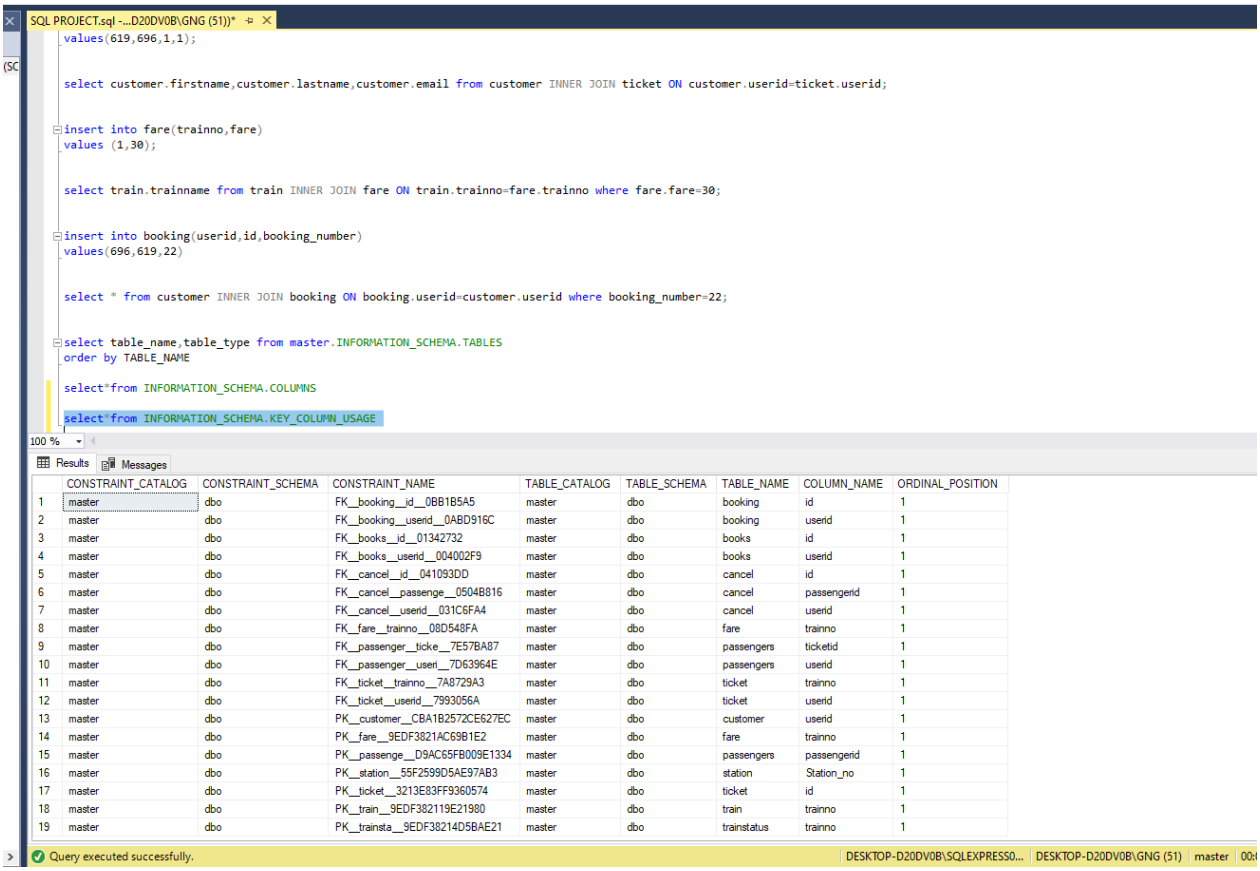
select*from INFORMATION_SCHEMA.COLUMNS



	SION	NUMERIC_PRECISION_RADIX	NUMERIC_SCALE	DATETIME_PRECISION	CHARACTER_SET_CATALOG	CHARACTER_SET_SCHEMA	CHARACTER_SET_NAME	COLLATION_CATALOG	COLLATION_SCHEMA	COLLATION_NAME
38		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
39		2	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL
40		2	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL
41		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
42		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
43		NULL	NULL	NULL	NULL	NULL	iso_1	NULL	NULL	SQL_Latin1_General_CP1_CI_A
44		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
45		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
46		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
47		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
48		NULL	NULL	NULL	NULL	NULL	iso_1	NULL	NULL	SQL_Latin1_General_CP1_CI_A
49		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
50		NULL	NULL	NULL	NULL	NULL	iso_1	NULL	NULL	SQL_Latin1_General_CP1_CI_A
51		NULL	NULL	NULL	NULL	NULL	iso_1	NULL	NULL	SQL_Latin1_General_CP1_CI_A
52		NULL	NULL	NULL	NULL	NULL	iso_1	NULL	NULL	SQL_Latin1_General_CP1_CI_A
53		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
54		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL
55		10	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Query:

select*from INFORMATION_SCHEMA.KEY_COLUMN_USAGE



```
SQL PROJECT.sql -...D20DV0B\GNG (51))*
values(619,696,1,1);

select customer.firstname,customer.lastname,customer.email from customer INNER JOIN ticket ON customer.userid=ticket.userid;

insert into fare(trainno,fare)
values (1,30);

select train.trainname from train INNER JOIN fare ON train.trainno=fare.trainno where fare.fare=30;

insert into booking(userid,id,booking_number)
values(696,619,22)

select * from customer INNER JOIN booking ON booking.userid=customer.userid where booking_number=22;

select table_name,table_type from master.INFORMATION_SCHEMA.TABLES
order by TABLE_NAME

select*from INFORMATION_SCHEMA.COLUMNS

select*from INFORMATION_SCHEMA.KEY_COLUMN_USAGE
```

100 %

Results | Messages

	CONSTRAINT_CATALOG	CONSTRAINT_SCHEMA	CONSTRAINT_NAME	TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME	COLUMN_NAME	ORDINAL_POSITION
1	master	dbo	FK__booking__id__0BB1B5A5	master	dbo	booking	id	1
2	master	dbo	FK__booking__userid__0ABD916C	master	dbo	booking	userid	1
3	master	dbo	FK__books__id__01342732	master	dbo	books	id	1
4	master	dbo	FK__books__userid__004002F9	master	dbo	books	userid	1
5	master	dbo	FK__cancel__id__041093DD	master	dbo	cancel	id	1
6	master	dbo	FK__cancel__passenge__0504B816	master	dbo	cancel	passengerid	1
7	master	dbo	FK__cancel__userid__031C6FA4	master	dbo	cancel	userid	1
8	master	dbo	FK__fare__trainno__08D548FA	master	dbo	fare	trainno	1
9	master	dbo	FK__passenger__ticke__7E57BA87	master	dbo	passengers	ticketid	1
10	master	dbo	FK__passenger__useri__7D63964E	master	dbo	passengers	userid	1
11	master	dbo	FK__ticket__trainno__7A8729A3	master	dbo	ticket	trainno	1
12	master	dbo	FK__ticket__userid__7993056A	master	dbo	ticket	userid	1
13	master	dbo	PK__customer__CBA1B2572CE627EC	master	dbo	customer	userid	1
14	master	dbo	PK__fare__9EDF3821AC69B1E2	master	dbo	fare	trainno	1
15	master	dbo	PK__passenge__D9AC65FB009E1334	master	dbo	passengers	passengerid	1
16	master	dbo	PK__station__55F2599D5AE97AB3	master	dbo	station	Station_no	1
17	master	dbo	PK__ticket__3213E83FF9360574	master	dbo	ticket	id	1
18	master	dbo	PK__train__9EDF382119E21980	master	dbo	train	trainno	1
19	master	dbo	PK__trainsta__9EDF38214D5BAE21	master	dbo	trainstatus	trainno	1

Query executed successfully. DESKTOP-D20DV0B\SQLEXPRESS0... | DESKTOP-D20DV0B\GNG (51) | master | 00:

[redacted]