Online Airline Reservation System



1. **Aim: -**

The Airline Reservation System (ARS) is a software application which aims to assist an airline with transactions related to making ticket reservations, which includes booking, reserving, cancelling and rescheduling tickets. From the viewpoint of the airlines the system provides the following: -

* 1. The system should minimize repetitive work done by the system administrator and reservation clerks.
  2. The system should maintain customer information in case of emergency.
  3. The system should minimize the number of vacant seats on a flight and maximize flightcapacity utilization.
  4. The system should reduce effort and frustration for travellers in scheduling a trip,especially by reducing the search effort for the flight they need to take.
  5. The system should make it easy for travellers to check the ticket status or make changes to their trip.

1. **Entities and Attributes: -**
2. Passenger (customer): The person who is booking

## P\_ID

* 1. First\_name:
  2. Last\_name
  3. Passport\_no
  4. P\_age
  5. E\_mail
  6. Residence
  7. Phone\_no
  8. Relative\_phone\_no

1. Journey Details: Details of journey

## Journey\_ID

* 1. Meal
  2. Other\_info

1. Ticket Details: Details of ticket

## Ticket\_no

* 1. Journey\_ID
  2. Fair
  3. Class
  4. Status

1. Schedule: Details of journey schedule

## Schedule\_ID

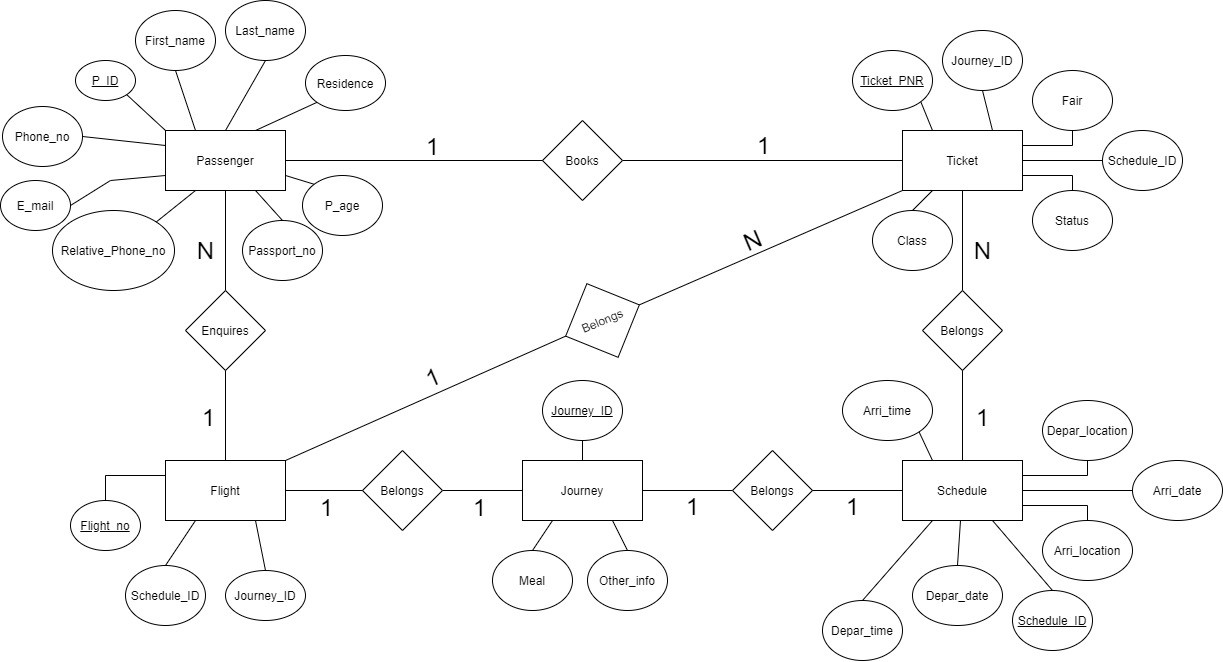
* 1. Depar\_location
  2. Arri\_location
  3. Depar\_time
  4. Arri\_time
  5. Journey\_ID

1. Flight Details: Details of flight

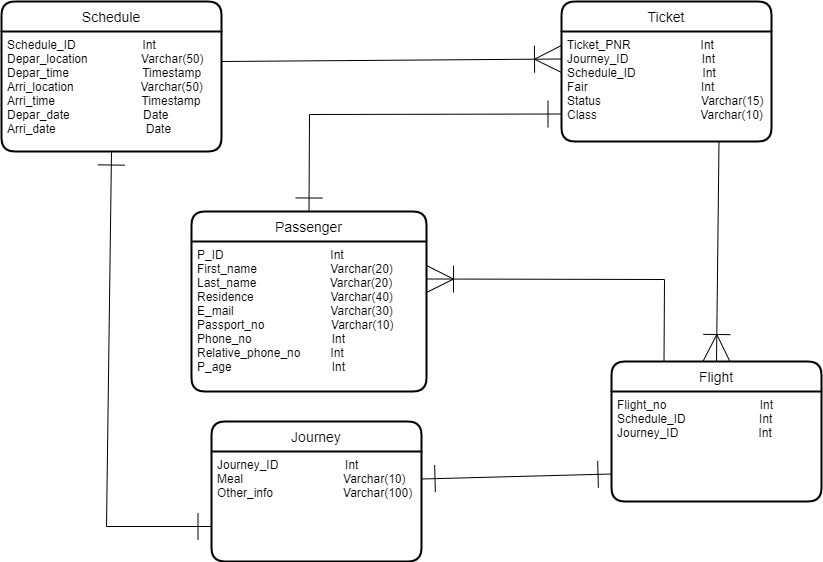
## Flight\_no

* 1. Journey\_ID
  2. Schedule\_ID

1. ER Diagram: -



# Relational Schema: -



1. Implementation on SQL Server: -

# Code for creating tables on SQL Server: -

Create table passenger (P\_ID numeric(10) not null,

First\_Name Varchar(20) not null, Last\_Name Varchar(20) not null, P\_age numeric(3),

Residence Varchar(40) not null,

Phone\_no Numeric(10) not null, Relative\_phone\_no numeric(10), Email\_Address varchar(20) not null, Passport\_no varchar(10) not null, Ticket\_PNR varchar(10),

constraint passenger\_up unique (passport\_no), constraint passenger\_pk primary key (P\_ID)

);

Create table Schedule (

Schedule\_Id numeric(10) not null, Depar\_location varchar(50) not null, Depar\_date Date not null, Depar\_time time not null, Arri\_location Varchar(50) not null, Arri\_date date not null,

Arri\_time time not null,

constraint schedule\_pk primary key (schedule\_ID)

);

Create table Journey (

Journey\_Id numeric(10) not null, Meal varchar(10) not null, Other\_info Varchar(100),

constraint journey\_pk primary key (Journey\_ID)

);

Create table Ticket (

Ticket\_PNR Varchar(10) not null, Journey\_Id numeric(10) not null, Schedule\_ID numeric(10) not null, Fair int not null,

Class Varchar(10) not null, Status Varchar(15) not null,

constraint ticket\_pk primary key (ticket\_PNR)

);

Create table Flight (

Flight\_no varchar(5) not null, Schedule\_id numeric(10) not null, Journey\_id numeric(10) not null,

constraint Flight\_pk primary key (flight\_no)

);

# Code for Inserting Values into the table: -

INSERT INTO Passenger

VALUES (6458972345,'Vaibhav','Rawal',17,'Delhi',5674328896,6314895627,'vaibhav@gmail.com','D568749125','PNQ001');

INSERT INTO Passenger

VALUES (6458972346,'Ashutosh','Sareen',18,'Delhi',6314895627,2467831435,'ashu@gmail.com','E364785521','PNQ002');

INSERT INTO Passenger

VALUES (6458972347,'Vijay','Sahu',30,'Jaipur',2467831596,9875546258,'vijay@gmail.com','F578942451','PNQ003');

INSERT INTO Passenger

VALUES (6458972348,'Raghav','Yadav',35,'Indore',6489521374,9865421374,'raghav@gmail.com','G246458713','PNQ004');

INSERT INTO Passenger

VALUES (6458972349,'Rishab','Mathur',30,'Mumbai',9547623815,9658423614,'rishab@gmail.com','H341578426','PNQ005');

INSERT INTO Schedule

VALUES (201, 'Delhi', '2021-10-25', '06:30:00', 'Dubai', '2021-10-25','9:00:00');

INSERT INTO Schedule

VALUES (202, 'Dubai', '2021-10-26', '10:30:00', 'Delhi', '2021-10-25','12:00:00');

INSERT INTO Schedule

VALUES (203, 'Delhi', '2021-10-26', '06:30:00', 'New York','2021-10-27','2:00:00');

INSERT INTO Schedule

VALUES (204, 'New York', '2021-10-28', '12:30:00', 'Delhi','2021-10-29','14:00:00');

INSERT INTO Schedule

VALUES (205, 'Delhi', '2021-10-30', '15:30:00', 'Mumbai', '2021-10-30','17:00:00');

INSERT INTO Journey

VALUES (513, 'YES', 'Require Wheelchair');

INSERT INTO Journey

VALUES (514, 'NO', NULL);

INSERT INTO Journey

VALUES (515, 'YES', 'Require Wheelchair');

INSERT INTO Journey

VALUES (516, 'NO', 'Require Wheelchair');

INSERT INTO Journey

VALUES (517, 'YES', NULL);

INSERT INTO Ticket

VALUES ('PNQ001',513, 201, 25000,'ECONOMY','CONFIRMED');

INSERT INTO Ticket

VALUES ('PNQ002', 514, 202, 55000,'BUSINESS','CONFIRMED');

INSERT INTO Ticket

VALUES ('PNQ003', 513, 203, 85000,'FIRST','CONFIRMED');

INSERT INTO Ticket

VALUES ('PNQ004', 515, 204, 20000,'ECONOMY','NOT CONFIRMED');

INSERT INTO Ticket

VALUES ('PNQ005',517, 205, 25000,'ECONOMY','NOT CONFIRMED');

INSERT INTO Flight

VALUES ('AI407',201,513);

INSERT INTO Flight

VALUES ('AI408',202,514);

INSERT INTO Flight

VALUES ('AI409',203,516);

INSERT INTO Flight

VALUES ('AI410',202,517);

INSERT INTO Flight

VALUES ('AI411',205,514);

select \* from passenger;

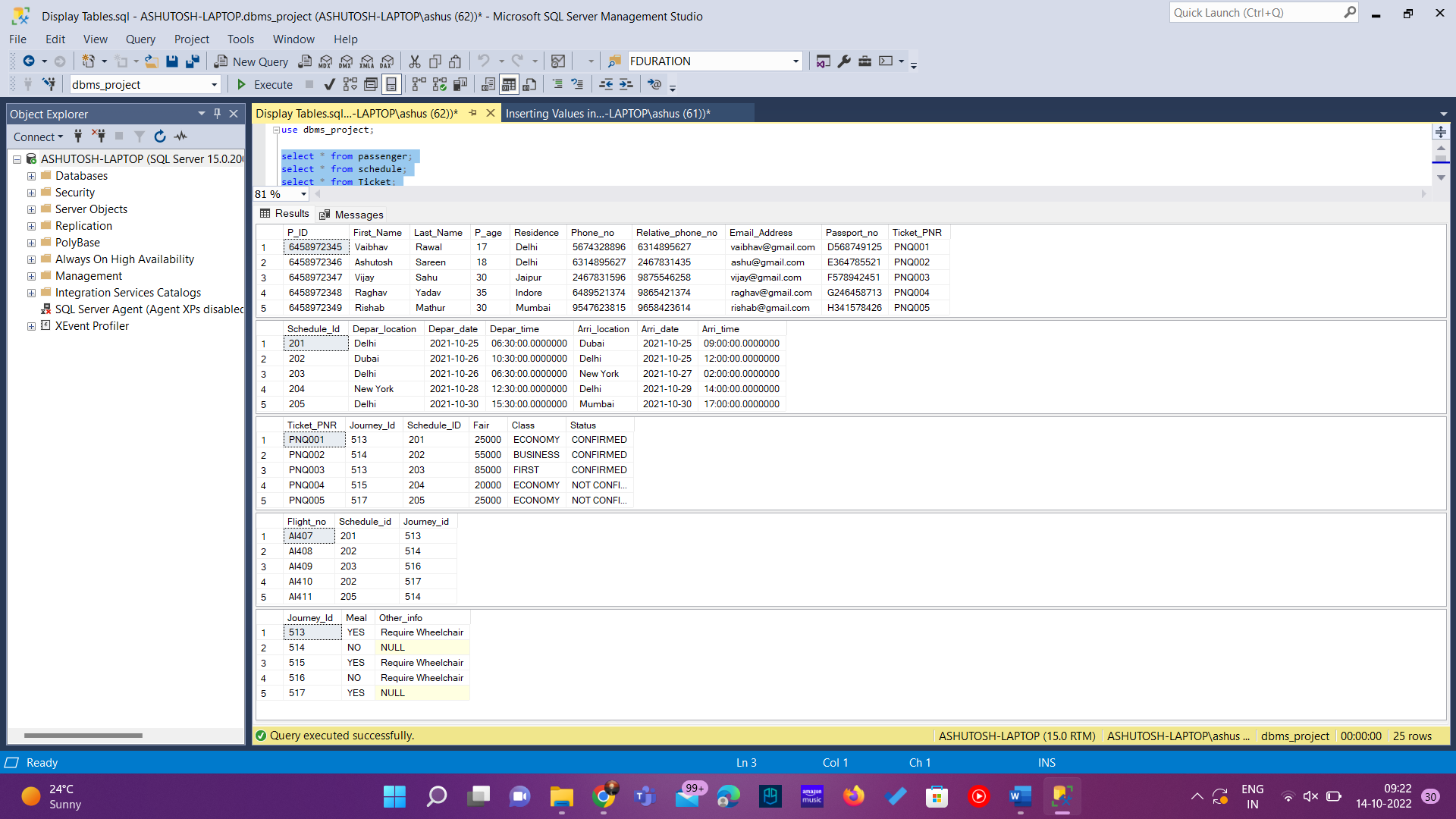
select \* from schedule;

select \* from Ticket;

select \* from Flight;

select \* from Journey;

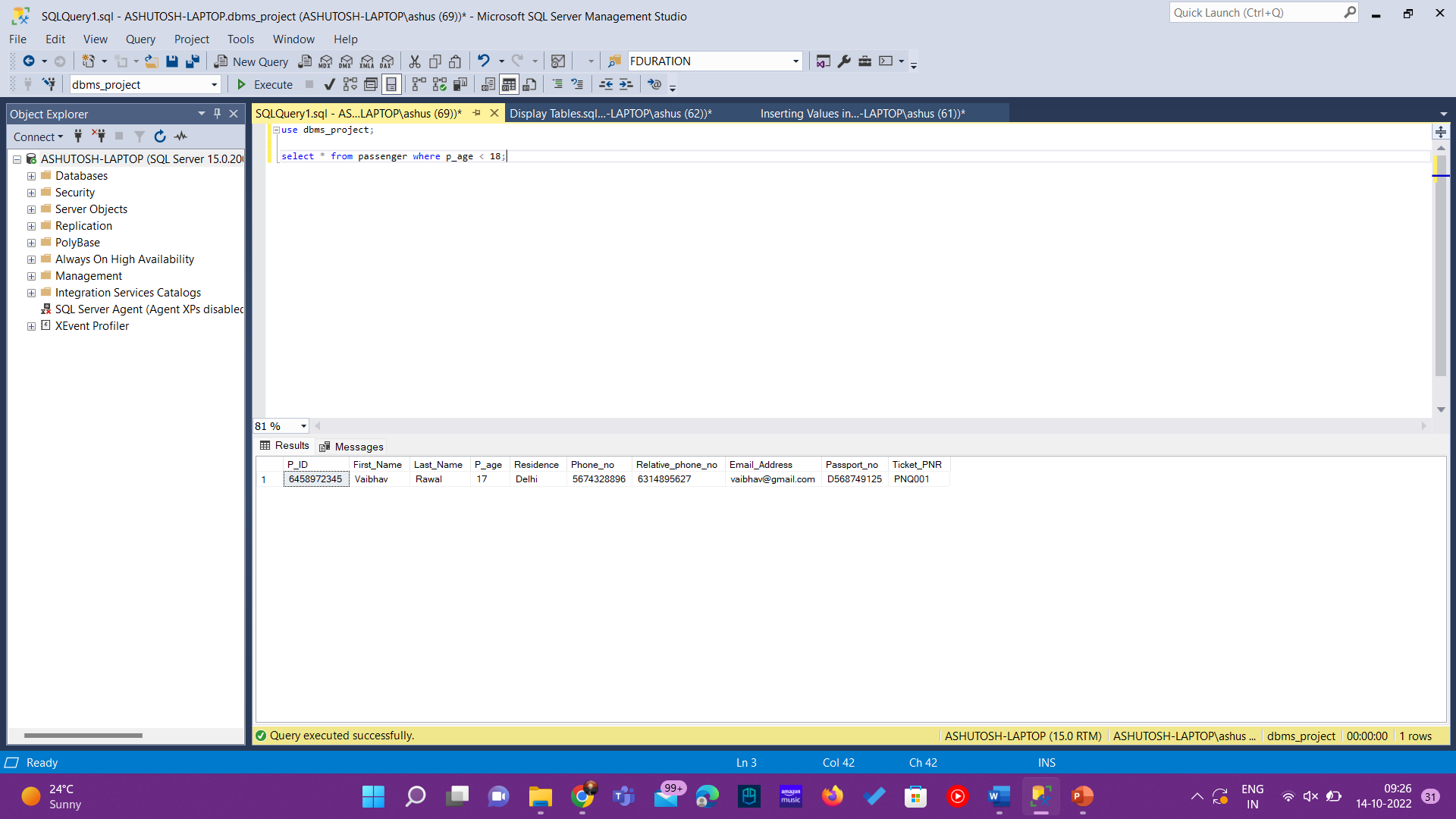
Output: -



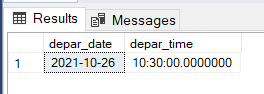
# Queries related to database: -

1. Find the information of the passengers who are below 18 years.

select \* from passenger where p\_age < 18;

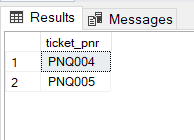


1. Find the departure time and date of ticket PNR = PNQ002. select depar\_date, depar\_time from schedule where schedule\_id=(select schedule\_id from ticket where ticket\_PNR='PNQ002');

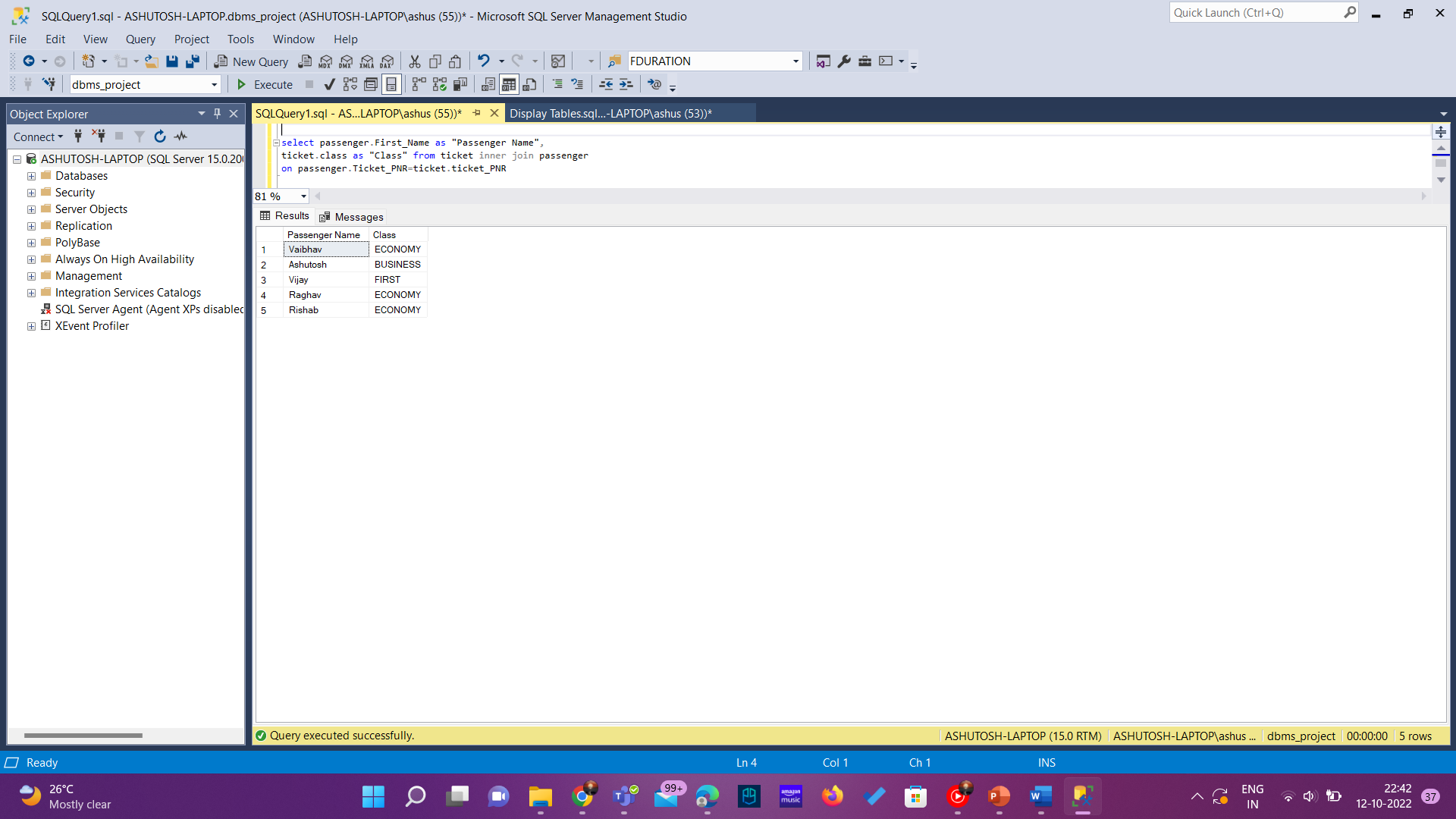


1. Find the ticket\_pnr whose ticket is not confirmed.

select ticket\_pnr from ticket where status='NOT CONFIRMED';

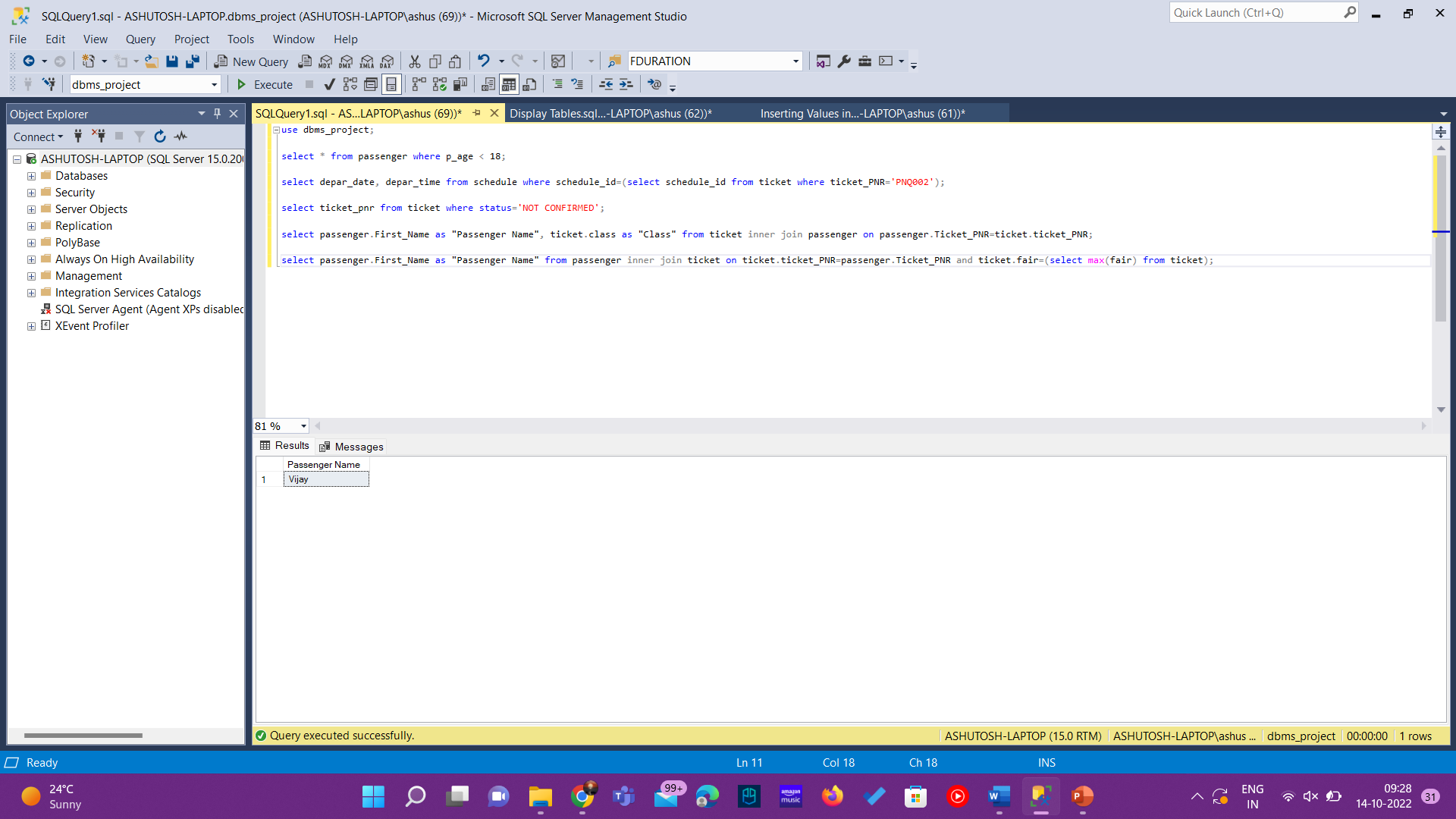


1. Show the passenger’s name along with the class in which they will travel. select passenger.First\_Name as "Passenger Name", ticket.class as "Class" from ticket inner join passenger on passenger.Ticket\_PNR=ticket.ticket\_PNR;

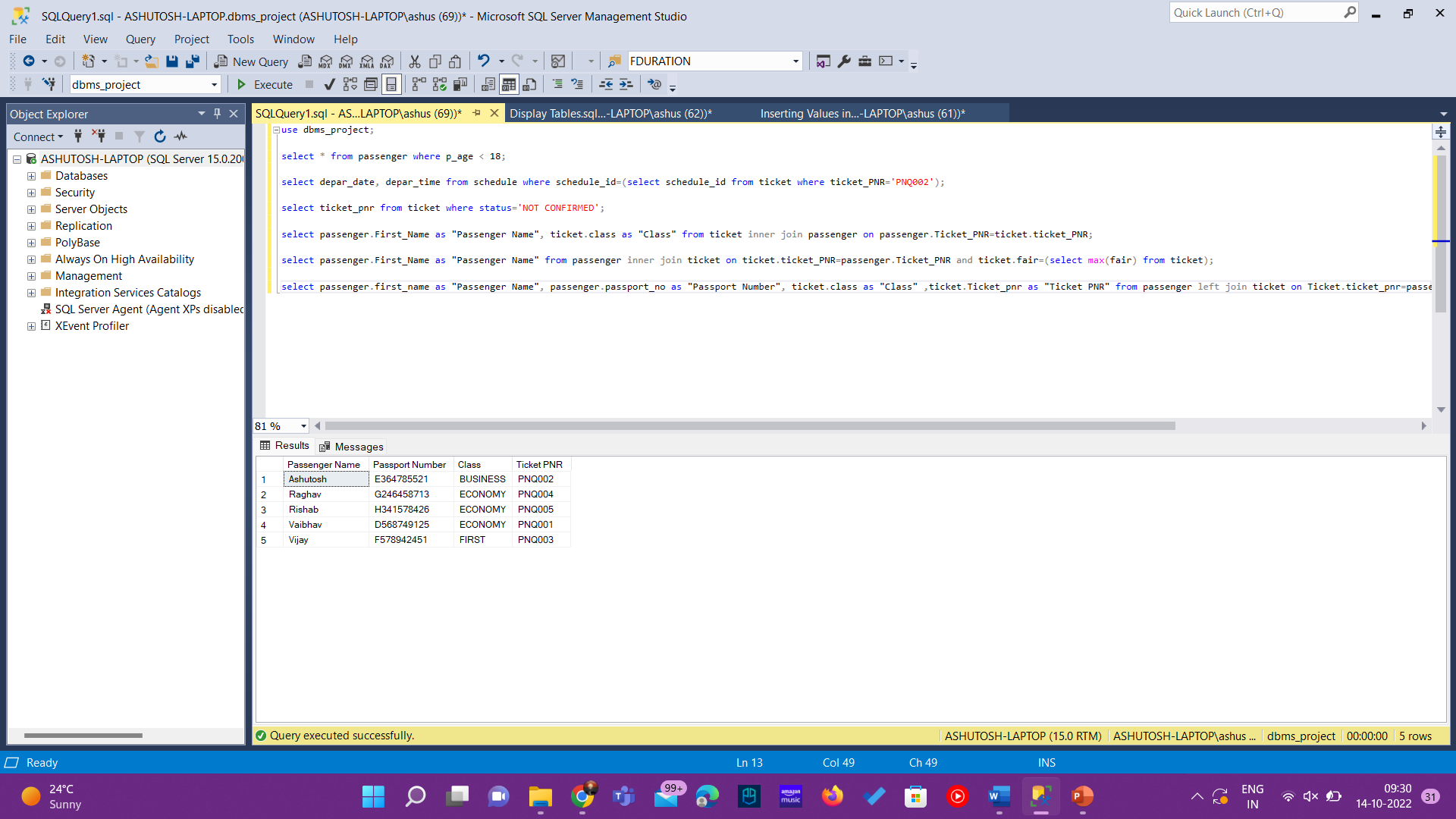


1. Find the name of passenger who bought the costliest ticket.

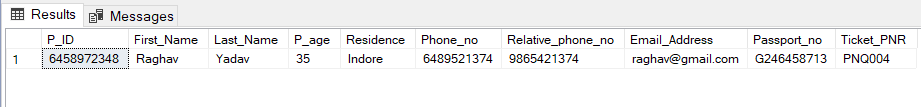
select passenger.First\_Name as "Passenger Name" from passenger inner join ticket on ticket.ticket\_PNR=passenger.Ticket\_PNR and ticket.fair=(select max(fair) from ticket);



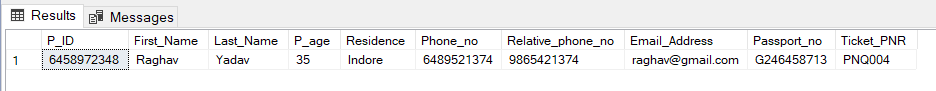
1. Show name, passport number, class and ticket PNR of all the passengers. select passenger.first\_name as "Passenger Name", passenger.passport\_no as "Passport Number", ticket.class as "Class" ,ticket.Ticket\_pnr as "Ticket PNR" from passenger left join ticket on Ticket.ticket\_pnr=passenger.ticket\_pnr order by class;



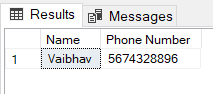
1. List the details of customer whose phone number start with 64.

select \* from passenger where phone\_no like '64%';

1. List the details of customers whose relative’s phone number start from 74. select \* from passenger where relative\_phone\_no like '%74';

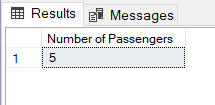


1. Find the Phone number and name of the passenger who is going to Dubai select first\_name as "Name", phone\_no as "Phone Number" from passenger where ticket\_pnr=(select ticket\_pnr from ticket where schedule\_id=(select schedule\_id from schedule where arri\_location='Dubai'));



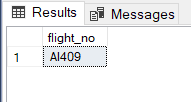
1. Find total number of passengers.

select count(P\_ID) as "Number of Passengers" from passenger;



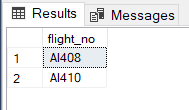
1. Find the flight number going to New York.

select flight\_no from flight where schedule\_id=(select schedule\_id from schedule where Arri\_location='New York');



1. Find the Flights coming from Dubai, before 30/10/21.

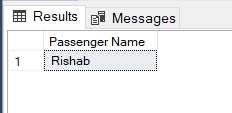
select flight\_no from flight where schedule\_id=(select schedule\_id from schedule where Depar\_location='Dubai' and depar\_date<'2021-10-30');



1. Find the names of customers whose name start with letter ‘R’ and end with

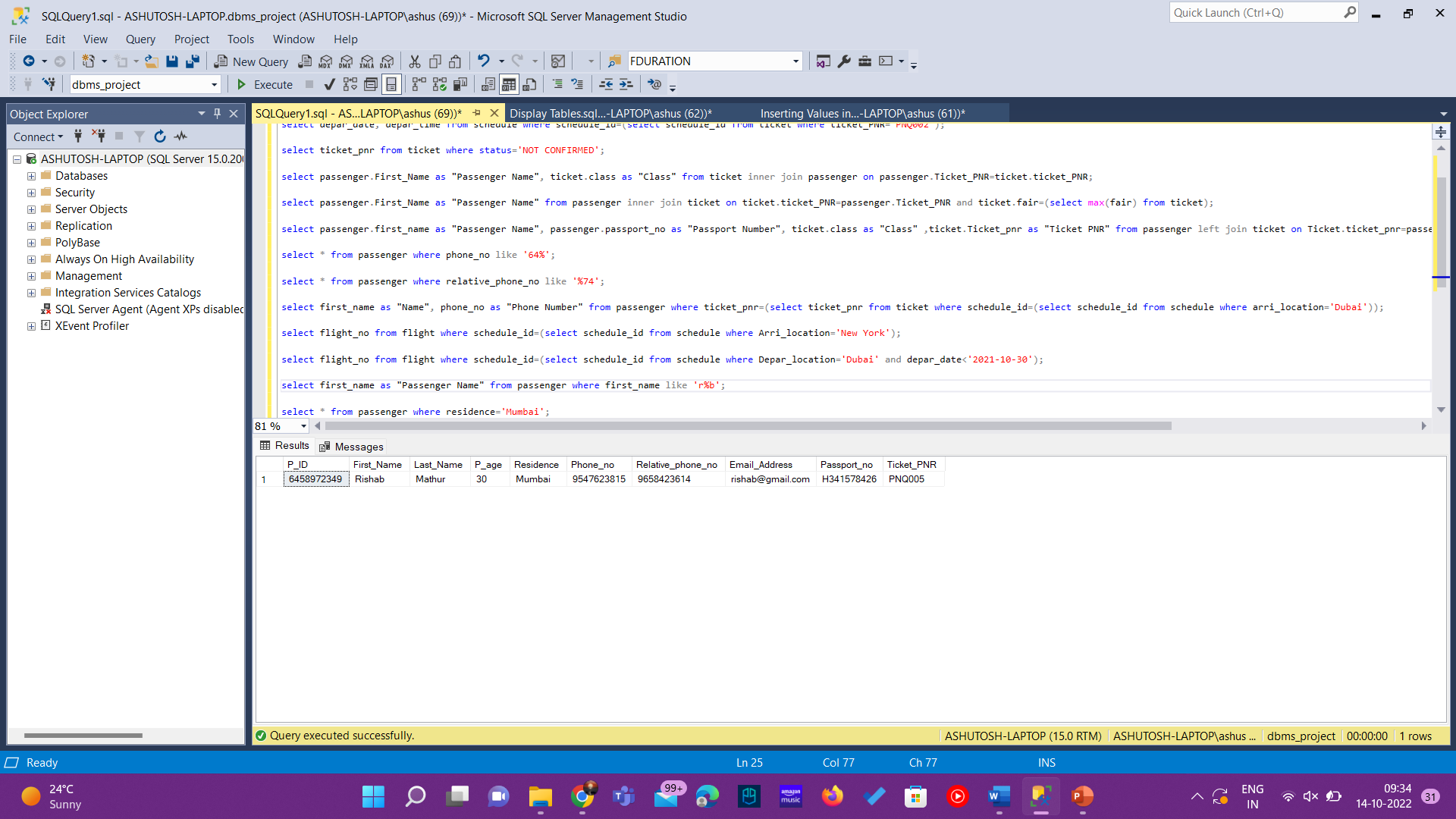
‘B’.

select first\_name as "Passenger Name" from passenger where first\_name like 'r%b';



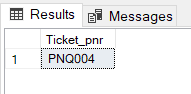
1. Find passengers residing in Mumbai.

select \* from passenger where residence='Mumbai';



1. Find the ticket PNR of Raghav.

select Ticket\_pnr from passenger where first\_name='Raghav';



**Prepared By Vijay Sahu**