**PROBLEM SET**

**Complex SQL Queries**

**Bus\_Service( service\_no : *integer***, Bus\_no :*integer*, Source: *string*, Destination: *string*, Distance:*integer*, Departs :*time*, Arrives : *time*, Fare : *integer***)**

**Bus(Bus\_no : *integer***, Bus\_name : *string*, Rating:*integer*, Max\_operating\_distance : *integer***)**

**Drives( Emp\_id : *integer*, Bus\_no : *integer*)**

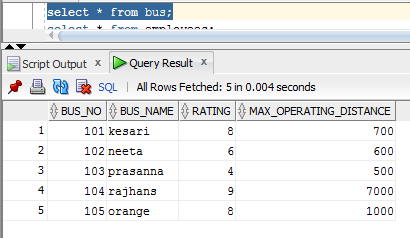
**Employees( Emp\_id : *integer***, Emp\_name : *string*, Salary : *integer ,*Rating*: integer,*Age: *integer***)**

\*\*Assume that every bus operates daily

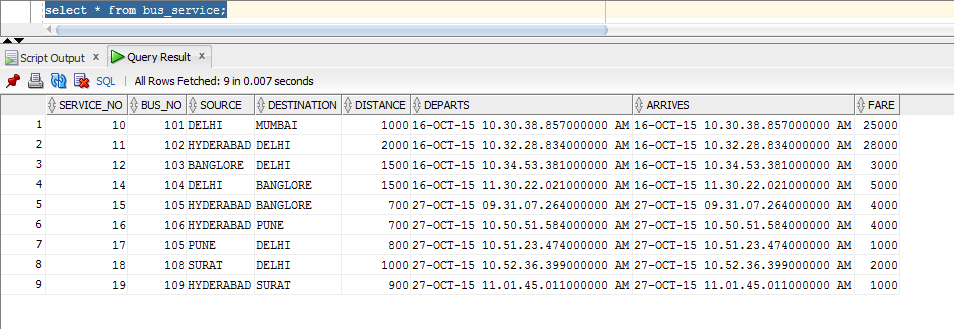
\*\* The set of bold attributes is the primary key

Following are the values in the table:-

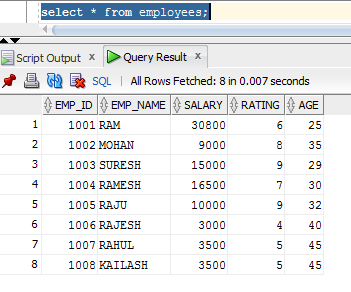
BUS table



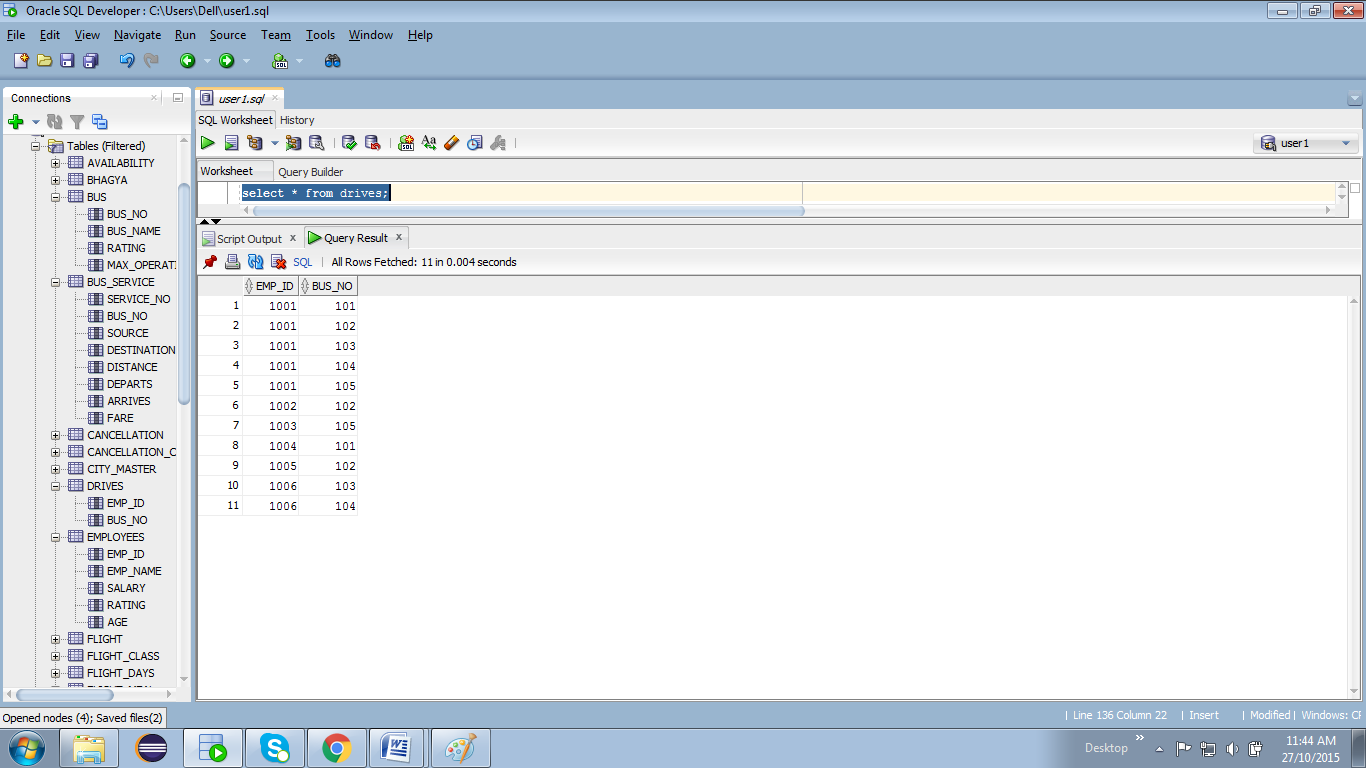
BUS\_SERVICE



EMPLOYEES



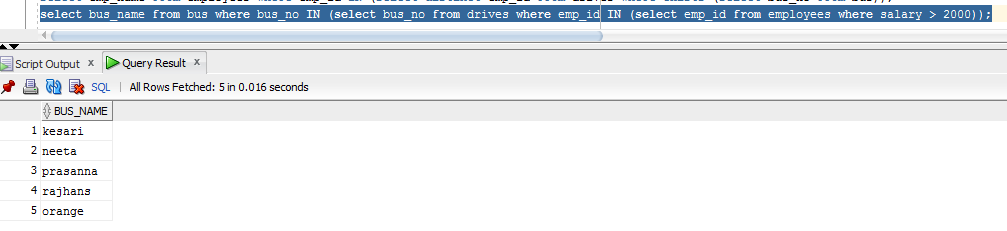
DRIVES



**Write the following SQL Queries by considering the Schema Given above**

1.      Find all those bus names such that all the drivers who operate on them earn more than 20k.

Answer:- select bus\_name from bus where bus\_no IN (select bus\_no from drives where emp\_id IN (select emp\_id from employees where salary > 2000));

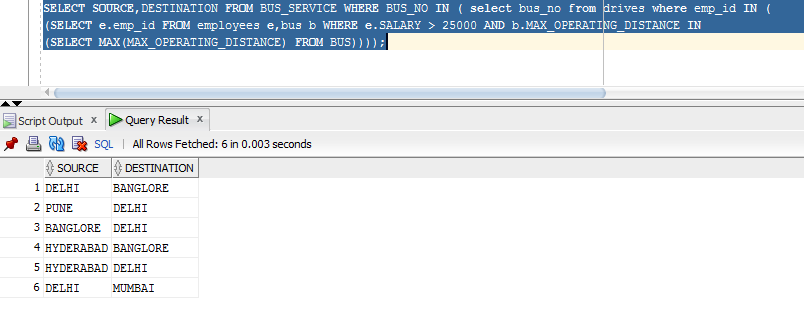


2.      Find the routes that can be driven by every driver who salary is more than 25k. (Hint: The driver must operate at least one bus with a sufficiently large operating distance.)

Answer:- SELECT SOURCE,DESTINATION FROM BUS\_SERVICE WHERE BUS\_NO IN ( select bus\_no from drives where emp\_id IN (

(SELECT e.emp\_id FROM employees e,bus b WHERE e.SALARY > 25000 AND b.MAX\_OPERATING\_DISTANCE IN

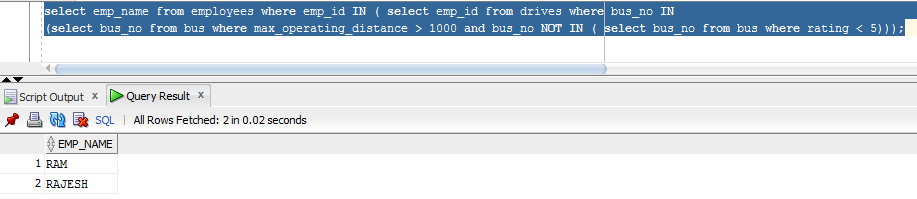
(SELECT MAX(MAX\_OPERATING\_DISTANCE) FROM BUS))));



3.      Find the names of drivers who can operate buses with operating distance greater than 1000 Km but are not drivers of any bus whose rating is less than 5.

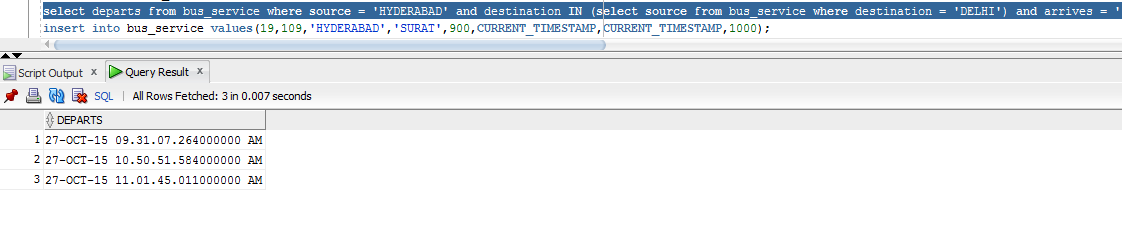
Answer:-select emp\_name from employees where emp\_id IN ( select emp\_id from drives where bus\_no IN (select bus\_no from bus where max\_operating\_distance > 1000 and bus\_no NOT IN ( select bus\_no from bus where rating <

5)));



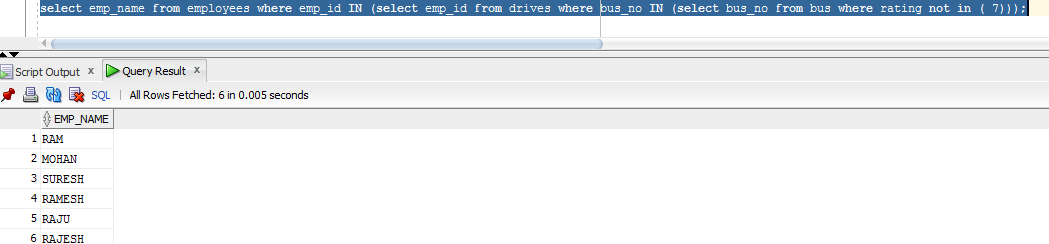
4.       A person wants to travel from ‘Hyderabad’ to ‘Delhi’ with no more than two changes of buses. List all possible departure times from ‘Hyderabad’ if the person wants to arrive in ‘Delhi’ by 6 A.M.

Answer:- select departs from bus\_service where source = 'HYDERABAD' and destination IN (select source from bus\_service where destination = 'DELHI' and arrives = '28-OCT-15 06.00.00.00 AM');



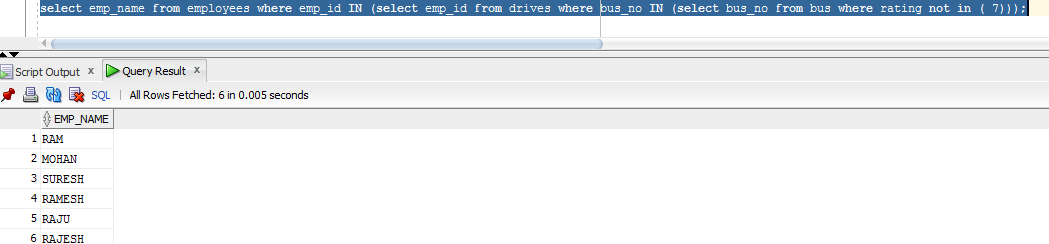
5.      Find the names of the drivers who do not drive a bus with rating 7.

Answer:- select emp\_name from employees where emp\_id IN (select emp\_id from drives where bus\_no IN (select bus\_no from bus where rating not in ( 7)));



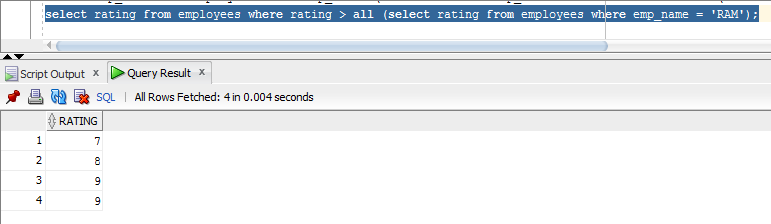
6.      Find the names of the drivers who do not drive any bus with rating 7.

Answer:- select emp\_name from employees where emp\_id IN (select emp\_id from drives where bus\_no IN (select bus\_no from bus where rating not in ( 7)));



7.      Find the rating of all drivers whose rating is better than some driver named ‘Ram’.

Answer:- select rating from employees where rating > all (select rating from employees where emp\_name = 'RAM');



8.      Find the driver names whose rating is at least 7 or drives a bus with rating at least 7

Answer:-

select emp\_name from employees where rating >= 7 and emp\_id IN (select emp\_id from drives where BUS\_NO IN (select bus\_no from bus where rating >= 7));

