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Section: BSCS-6A

Database Systems Lab 1

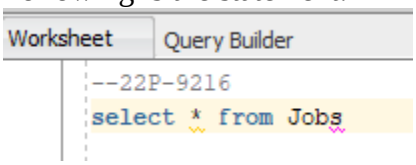
Task 1:

Write a SQL statement to display all the information of table Jobs.

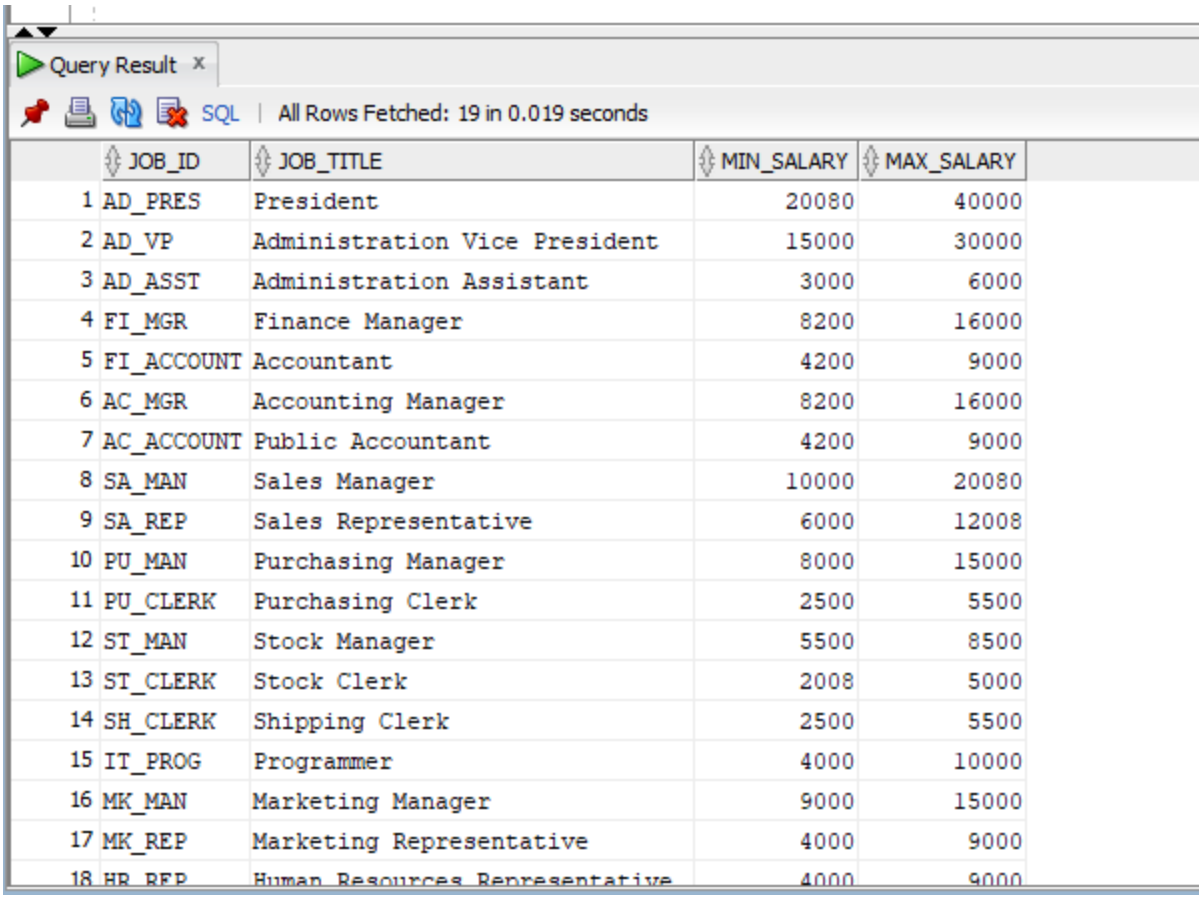
Ans:

First open the “sqldeveloper” application. Choose the “hr” user. Enter your password. After that, write the following statement, i-e: “select * from Jobs” to display the information of Jobs table. Here “select” is used to collect data from a database, “*” represents all the columns of the table, “from Jobs” specifies which table to collect data from.

Following is the statement:



Following is the result:



Query Result

SQL | All Rows Fetched: 19 in 0.019 seconds

	JOB_ID	JOB_TITLE	MIN_SALARY	MAX_SALARY
1	AD_PRES	President	20080	40000
2	AD_VP	Administration Vice President	15000	30000
3	AD_ASST	Administration Assistant	3000	6000
4	FI_MGR	Finance Manager	8200	16000
5	FI_ACCOUNT	Accountant	4200	9000
6	AC_MGR	Accounting Manager	8200	16000
7	AC_ACCOUNT	Public Accountant	4200	9000
8	SA_MAN	Sales Manager	10000	20080
9	SA_REP	Sales Representative	6000	12008
10	PU_MAN	Purchasing Manager	8000	15000
11	PU_CLERK	Purchasing Clerk	2500	5500
12	ST_MAN	Stock Manager	5500	8500
13	ST_CLERK	Stock Clerk	2008	5000
14	SH_CLERK	Shipping Clerk	2500	5500
15	IT_PROG	Programmer	4000	10000
16	MK_MAN	Marketing Manager	9000	15000
17	MK_REP	Marketing Representative	4000	9000
18	HR_REP	Human Resources Representative	4000	9000

Task 2:

Write a SQL query to find min and max salary columns of the Job table with Job title ‘President’ from Jobs table.

Ans:

We have written the following SQL query where job_title, min_salary, max_salary are chosen to be selected from Jobs table. “where” is used to filter the row to be included which is “President”. This simply means that we have to find min and max salary columns of the President from Jobs table.

Following is the query:

```
Worksheet | Query Builder
--22P-9216
select job_title, min_salary, max_salary from Jobs where job_title='President'
```

Following is the result:

Query Result

SQL | All Rows Fetched: 1 in 0.003 seconds

	JOB_TITLE	MIN_SALARY	MAX_SALARY
1	President	20080	40000

Task 3:

Write a SQL query to find those employees whose salaries are greater than 20,000 from Employees table.

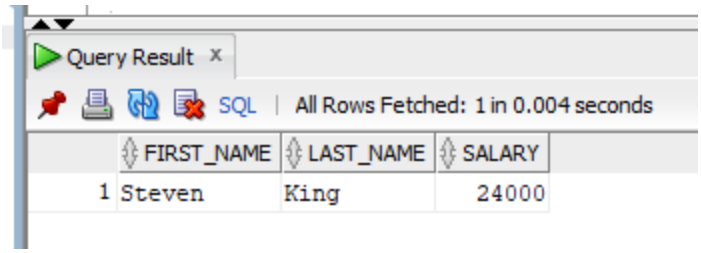
Ans:

We have written the following SQL query where only those employees are chosen to be selected whose salaries are greater than 20,000 from Employees table. We have filtered them by using "where" and the condition is that the employee must have a salary greater than 20,000. Lastly we have displayed their first name, last name, and salary.

Following is the query:

```
orksheet | Query Builder
--22P-9216
select first_name, last_name, salary from Employees where salary>20000
```

Following is the result:



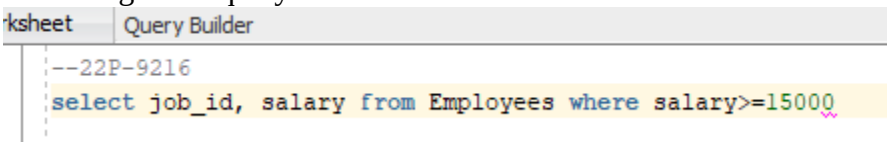
Task 4:

Write a SQL query to find the Jobs whose salaries are higher than or equal to $15,000 from Employees table.

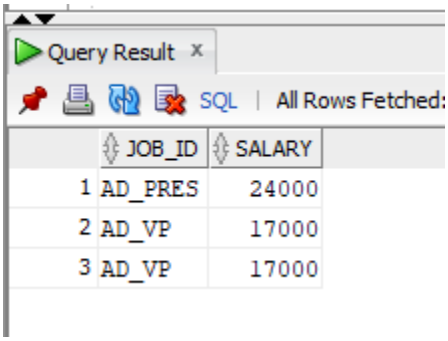
Ans:

We have written the following SQL query where those Jobs are listed whose salaries are greater than or equal to $15,000 from the Employees table. They are filtered by using “where” and are listed by their job_id and salary.

Following is the query:



Following is the result:



Task 5:

Write a SQL query to find the details of the employees whose last name is “Snares”. Return employee ID, employee first name, employee last name, and employee dept ID.

Ans:

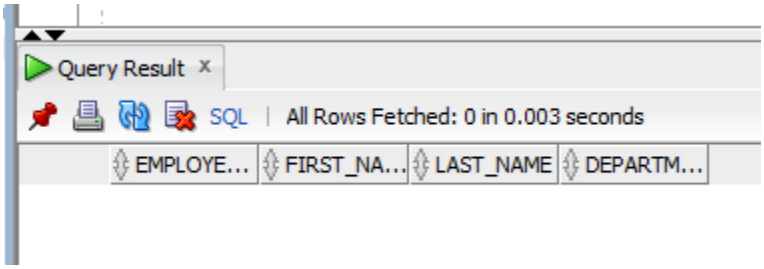
We have written the following SQL query where those Employees are listed whose last name is “Snares”. They are filtered by using “where” and their id, first name, last name, and department ID are listed.

Following is the query:

ksheet | Query Builder

```
--22P-9216
select employee_id, first_name, last_name, department_id from Employees where last_name='Snares'
```

Following is the result (it is empty since there are no employees having the last name “Snares”):



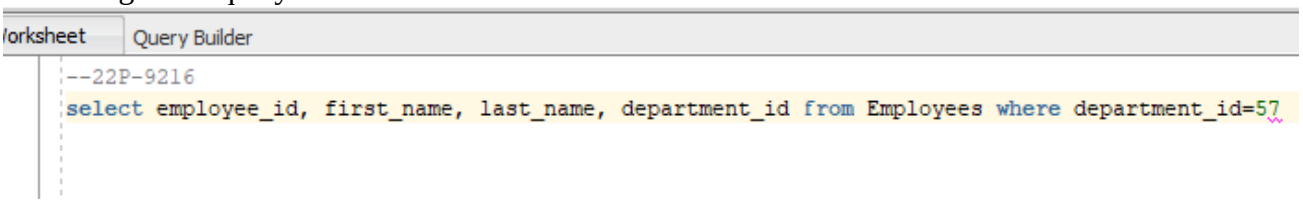
Task 6:

Write a SQL query to find the details of the employees who work in the department 57. Return employee ID, employee first name, employee last name, and employee dept ID.

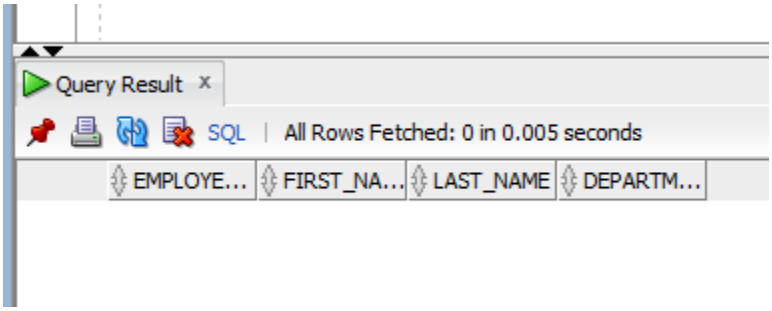
Ans:

We have written the following SQL query where those Employees are listed who work in department 57. They are filtered by using “where” and their id, first name, last name, and department ID are listed.

Following is the query:



Following is the result (it is empty since there are no employees working in department 57):



Task 7:

Write a SQL query to find the phone number of the department id=80 and manager id=100 of Employees table.

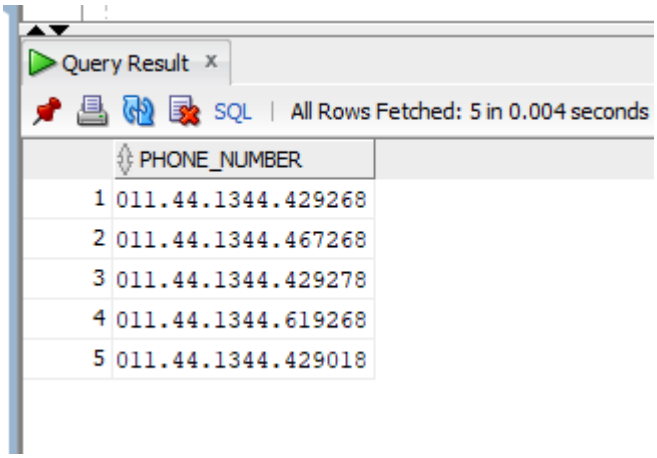
Ans:

We have written the following SQL query where the phone numbers of those Employees are listed who work in department 80 and have a manager ID 100. They are filtered by using “where” and their phone numbers are listed.

Following is the query:

```
--22P-9216
select phone_number from Employees where department_id=80 and manager_id=100
```

Following is the result:



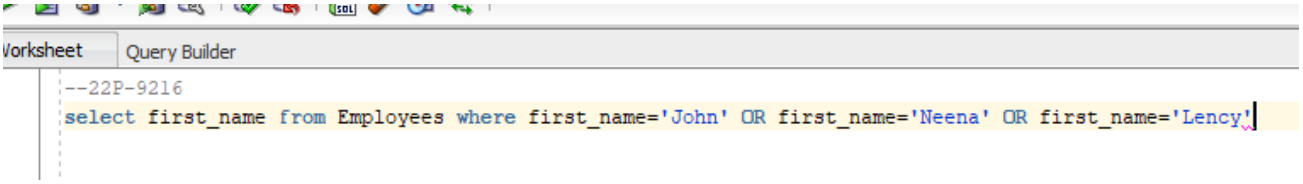
Task 8:

Write a SQL query to find the Employees with the first name “John”, “Neena” and “Lency”.

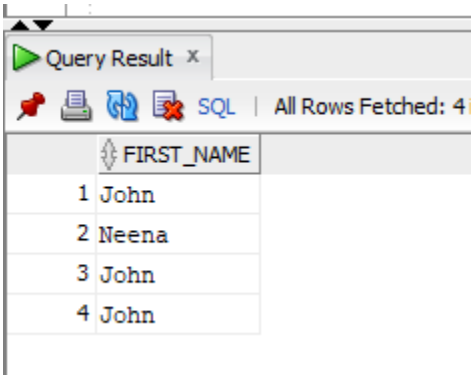
Ans:

We have written the following SQL query where the Employees with the first name “John”, “Neena”, “Lency” are listed. They are filtered by using “where” and “OR” is used to combine multiple conditions in the statement. Finally their first names are listed.

Following is the query:



Following is the result:



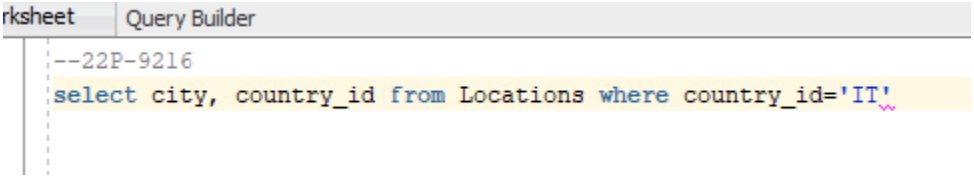
Task 9:

Write a SQL query to find the list of cities with country ID ‘IT’ from locations table.

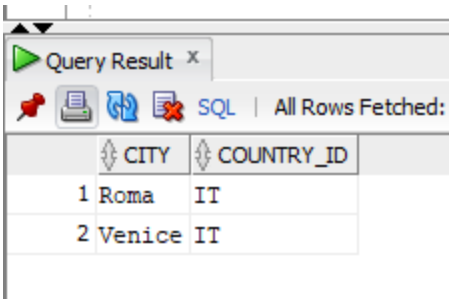
Ans:

We have written the following SQL query where the cities are listed having country ID “IT”. They are filtered by using “where”.

Following is the query:



Following is the result:



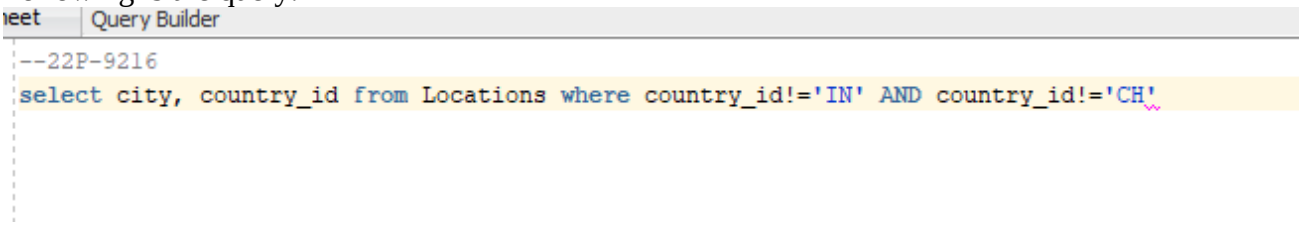
Task 10:

Write a SQL query to find the list of cities except country ID ‘IN’ and ‘CH’ from locations table.

Ans:

We have written the following SQL query where only those cities are listed which do not have country ID “IN” and “CH”. They are filtered by using “where”.

Following is the query:



Following is the result:

	CITY	COUNTRY_ID
1	Sydney	AU
2	Sao Paulo	BR
3	Toronto	CA
4	Whitehorse	CA
5	Beijing	CN
6	Munich	DE
7	Roma	IT
8	Venice	IT
9	Tokyo	JP
10	Hiroshima	JP
11	Mexico City	MX
12	Utrecht	NL
13	Singapore	SG
14	London	UK
15	Oxford	UK
16	Stretford	UK
17	Southlake	US

Task 11:

Write a SQL query to find the list of jobs whose min salary is greater than 8000 and less than 15,000 from job table.

Ans:

We have written the following SQL query where the job title and id of those jobs are are listed whose min salary is greater than 8000 and less than 15,000 . They are filtered by using “where”.

Following is the query:

sheet | Query Builder

```
--22P-9216
select job_id, job_title from Jobs where min_salary>8000 AND min_salary<15000
```

Following is the result:

SQL | All Rows Fetched: 4 in 0.002

	JOB_ID	JOB_TITLE
1	FI_MGR	Finance Manager
2	AC_MGR	Accounting Manager
3	SA_MAN	Sales Manager
4	MK_MAN	Marketing Manager

Task 12:

Write a SQL query to find the list of phone with DEPARTMENT_ID ‘90’ but not with job_id ‘IT_PROG’ from Employees table.

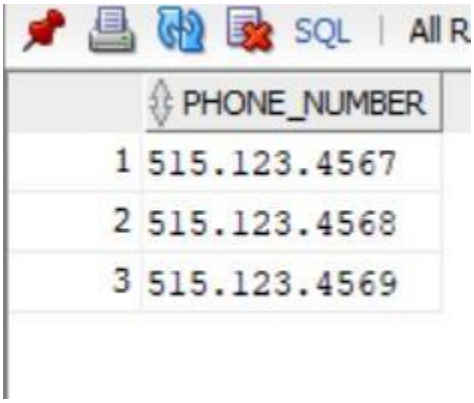
Ans:

We have written the following SQL query where those phones are listed who have department id “90” but do not have job id “it_prog” job title. They are filtered by using “where”.

Following is the query:

```
heet    Query Builder
--22P-9216
select phone_number from Employees where department_id=90 AND job_id!='IT_PROG'
```

Following is the result:



	PHONE_NUMBER
1	515.123.4567
2	515.123.4568
3	515.123.4569

Task 13:

Write a SQL query to find the list of employees who are hired after 12-Dec-07 from employee table.

Ans:

We have written the following SQL query where those employees are listed who are hired after 12-Dec-07. They are filtered by using “where”.

Following is the query:

```
heet    Query Builder
--22P-9216
select first_name, last_name from Employees where hire_date>'12-Dec-07'
```

Following is the result:

	FIRST_NAME	LAST_NAME
1	Steven	Markle
2	Hazel	Philtanker
3	Eleni	Zlotkey
4	Mattea	Marvins
5	David	Lee
6	Sundar	Ande
7	Amit	Banda
8	Sundita	Kumar
9	Charles	Johnson
10	Girard	Geoni
11	Randall	Perkins
12	Douglas	Grant

Task 14:

Write a SQL query to find the list of employees who are hired after 12-Dec-07 in Department with DEPARTMENT_ID=100 from employee table.

Ans:

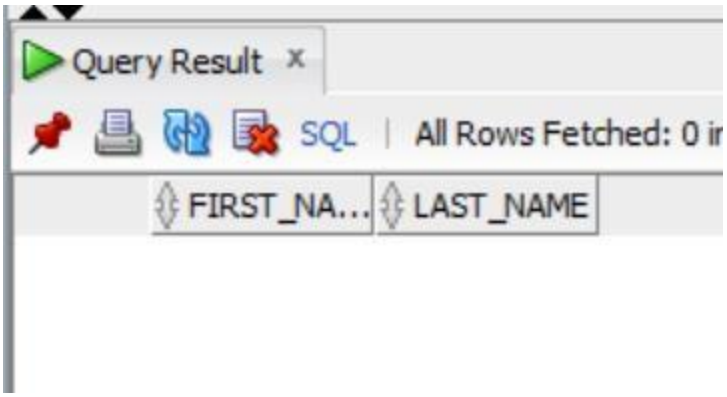
We have written the following SQL query where those employees are listed who are hired after 12-Dec-07 with department ID “100”. They are filtered by using “where”.

Following is the query:

sheet | Query Builder

```
--22P-9216
select first_name, last_name from Employees where hire_date>'12-Dec-07' AND department_id=100
```

Following is the result (it is empty since there are no employees that are hired after 12-Dec-07 with department ID “100”):



Task 15:

Write a SQL query to find the list of employees who are hired after 12-Dec-07 but not in Department with DEPARTMENT_ID=100 from employee table.

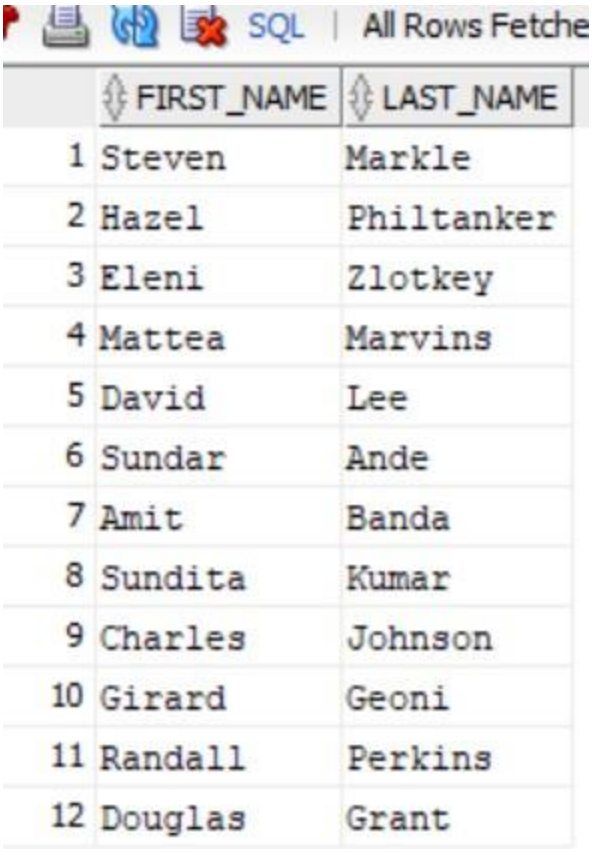
Ans:

We have written the following SQL query where those employees are listed who are hired after 12-Dec-07 but not in department with department ID “100”. They are filtered by using “where”.

Following is the query:

```
--22P-9216
select first_name, last_name from Employees where hire_date>'12-Dec-07' AND department_id!=100
```

Following is the result:



	FIRST_NAME	LAST_NAME
1	Steven	Markle
2	Hazel	Philtanker
3	Eleni	Zlotkey
4	Mattea	Marvins
5	David	Lee
6	Sundar	Ande
7	Amit	Banda
8	Sundita	Kumar
9	Charles	Johnson
10	Girard	Geoni
11	Randall	Perkins
12	Douglas	Grant

Task 16:

Write a SQL query to find the list of employees whose COMMISSION_PCT=0 and they do not belong to DEPARTMENT_ID 90 or 100 from Employees table.

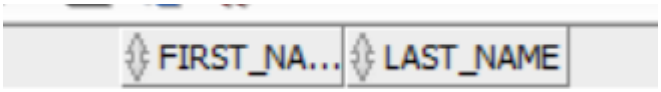
Ans:

We have written the following SQL query where those employees are listed whose commission pct is “0” and do not belong to department ID “90” or “100”. They are filtered by using “where”. Brackets “()” are used to group the conditions.

Following is the query:

```
--22P-9216
select first_name, last_name from Employees where commission_pct=0 AND (department_id!=90 AND department_id!=100)
```

Following is the result (it is empty since there are no employees having commission pct “0” and not belonging to department ID “90” or “100”):



Task 17:

Write a SQL query to find the list of employees who are hired in year 2010 from Employees table.

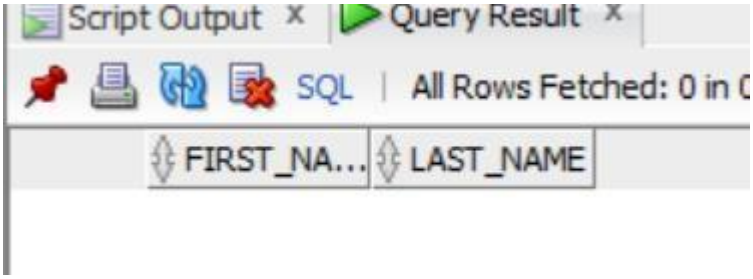
Ans:

We have written the following SQL query where those employees are listed who are hired in the year 2010. They are filtered by using “where”. We have used “BETWEEN” because it is used to search for values that are within a set of values, given the minimum value and the maximum value. We could have used the YEAR() function but ORACLE does not support that.

Following is the query:

```
--22P-9216
select first_name, last_name from Employees where hire_date BETWEEN '01-JAN-10' AND '31-DEC-10'
```

Following is the result (it is empty since there are no employees hired in 2010):



Task 18 is repeated.

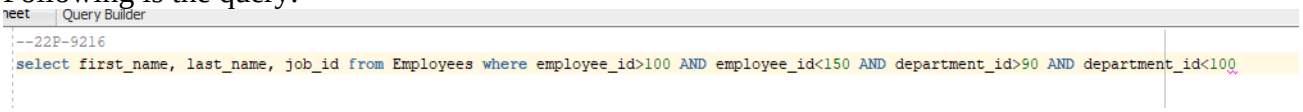
Task 19:

Write a SQL query to find the employees whose ID are greater than 100 and less than 150 and their department_id is greater than 90 and less than 100 along with their F_name, Last_name & Job ID.

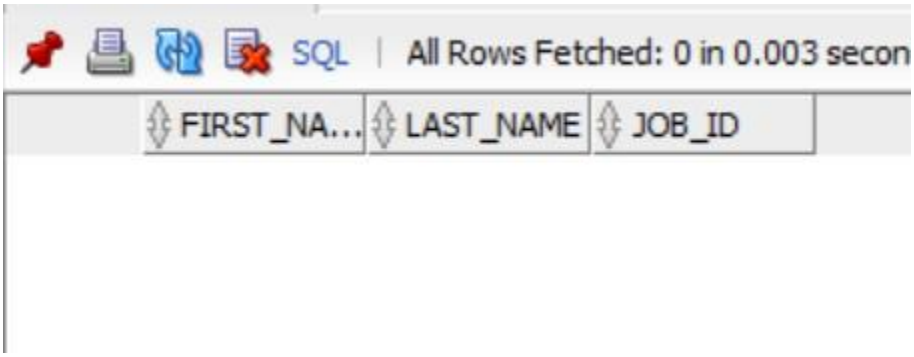
Ans:

We have written the following SQL query where the first name, last name, and job IDs of those employees are listed whose ID is greater than 100 and less than 150 and their department ID is greater than 90 and less than 100. They are filtered by using “where”.

Following is the query:



Following is the result (it is empty since there are no such employees):



Task 20:

Write a SQL query to find total salary along with salary & commission_pct
Total salary formula = commission_pct, salary+(commission_pct*salary)

Ans:

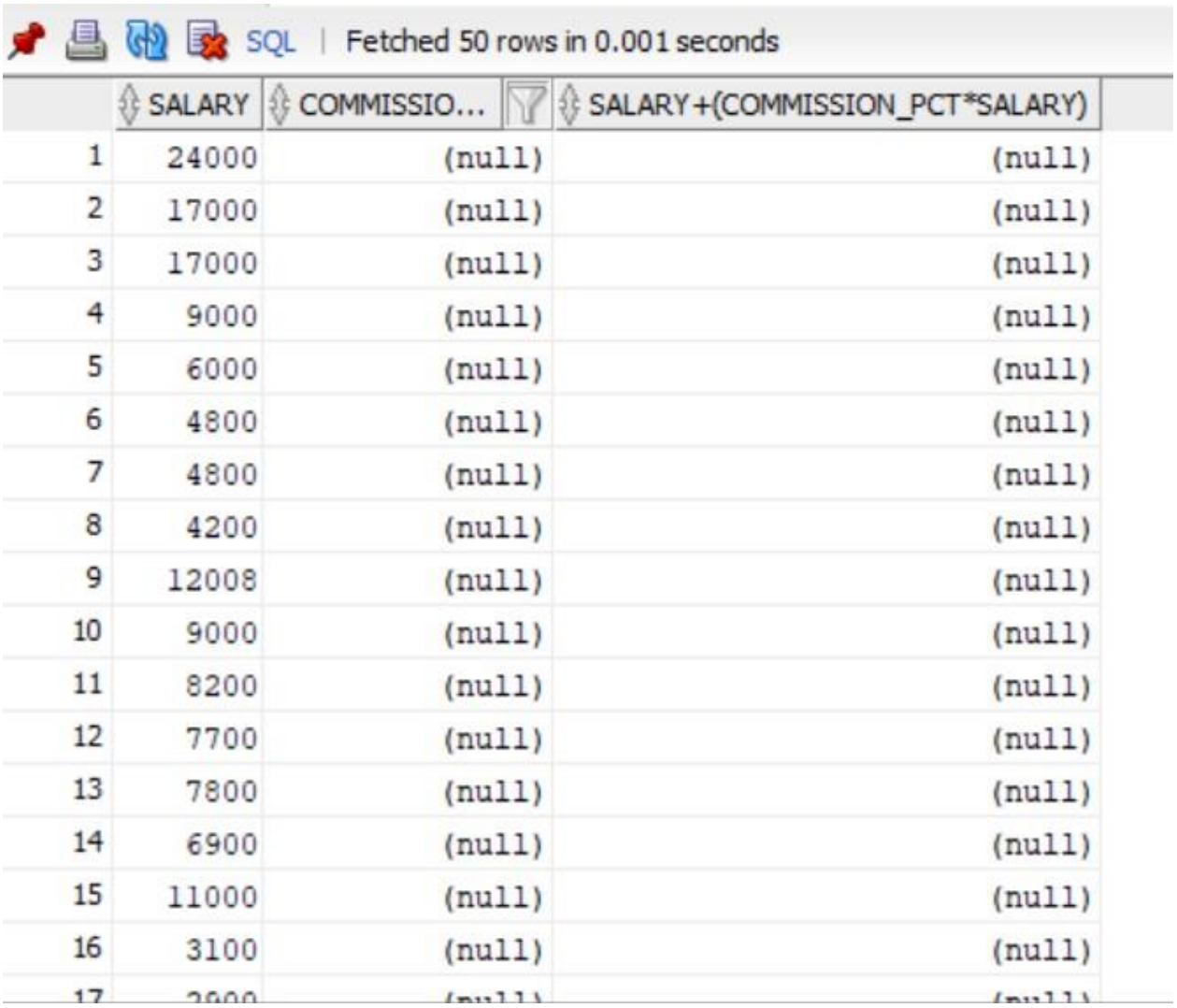
We have performed the following arithmetic operation where total salary is found using the formula in the question. The total salary is listed along with the salary and commission_pct.

Following is the query:

sheet | Query Builder

```
--22P-9216
select salary, commission_pct, salary+(commission_pct*salary) from Employees
```

Following is the result (these are indicated as NULL because commission_pct is NULL):


SQL | Fetched 50 rows in 0.001 seconds

	SALARY	COMMISSIO...	SALARY+(COMMISSION_PCT*SALARY)
1	24000	(null)	(null)
2	17000	(null)	(null)
3	17000	(null)	(null)
4	9000	(null)	(null)
5	6000	(null)	(null)
6	4800	(null)	(null)
7	4800	(null)	(null)
8	4200	(null)	(null)
9	12008	(null)	(null)
10	9000	(null)	(null)
11	8200	(null)	(null)
12	7700	(null)	(null)
13	7800	(null)	(null)
14	6900	(null)	(null)
15	11000	(null)	(null)
16	3100	(null)	(null)
17	2900	(null)	(null)