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**SUBJECT:** DBMS LAB

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## ASSIGNMENT – 5(1)

### ON: RESTRICTING AND SORTING DATA

**Q1. Show the structure of the EMPLOYEES table. Create a query to display the last name, job code, hire date and employee number for each employee, with employee number appearing first.**

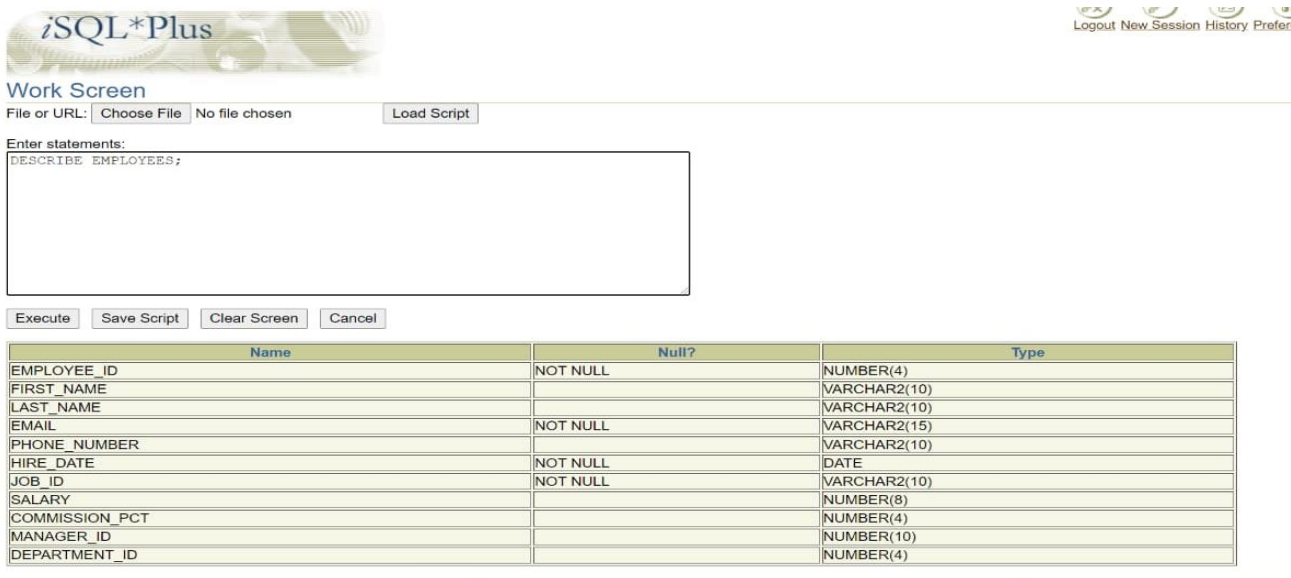
Ans1.

DESCRIBE EMPLOYEES;

SELECT EMPLOYEE\_ID, LAST\_NAME, JOB\_ID, HIRE\_DATE

FROM EMPLOYEES;

#### Verification table 1 -



Name	Null?	Type
EMPLOYEE_ID	NOT NULL	NUMBER(4)
FIRST_NAME		VARCHAR2(10)
LAST_NAME		VARCHAR2(10)
EMAIL		VARCHAR2(15)
PHONE_NUMBER		VARCHAR2(10)
HIRE_DATE	NOT NULL	DATE
JOB_ID	NOT NULL	VARCHAR2(10)
SALARY		NUMBER(8)
COMMISSION_PCT		NUMBER(4)
MANAGER_ID		NUMBER(10)
DEPARTMENT_ID		NUMBER(4)

#### Verification table 2-

EMPLOYEE_ID	LAST_NAME	JOB_ID	HIRE_DATE
100	King	AD_PRES	17-JUN-87
101	Kochhar	AD_VP	21-SEP-89
102	De Haan	AD_VP	13-JAN-93
103	Hundold	IT_PROG	03-JAN-90
104	Ernst	IT_PROG	21-MAY-91
107	Lorenz	IT_PROG	07-FEB-99
124	Mourgos	ST_MAN	16-NOV-99
141	Rajs	ST_CLERK	17-OCT-95
142	Davies	ST_CLERK	29-JAN-97
143	Matos	ST_CLERK	15-MAR-98
144	Vargas	ST_CLERK	09-JUL-98
149	Zlotkey	SA_MAN	29-JAN-00
174	Abel	SA_REP	11-MAY-96
176	Taylor	SA_REP	24-MAR-98
EMPLOYEE_ID	LAST_NAME	JOB_ID	HIRE_DATE
178	Grant	SA_REP	24-MAY-99
200	Whalen	AD_ASST	14-SEP-87
201	Hartstein	MK_MAN	17-FEB-96
202	Fay	MK_REP	17-AUG-97
205	Higgins	AC_MGR	07-JUN-94
206	Gietz	AC_ACCOUNT	07-JUN-94
999	Taylor	ST_CLERK	07-JUN-99

21 rows selected.

**Q2. Create a query to display unique job codes from the EMPLOYEES table.**

Ans2.

SELECT DISTINCT JOB\_ID

FROM EMPLOYEES;

**Verification table -**

File or URL:  No file chosen

Enter statements:

```
SELECT DISTINCT JOB_ID
FROM EMPLOYEES;
```

JOB_ID
AC_ACCOUNT
AC_MGR
AD_ASST
AD_PRES
AD_VP
IT_PROG
MK_MAN
MK_REP
SA_MAN
SA_REP
ST_CLERK
ST_MAN

12 rows selected.

**Q3. Create a query to display the column headings in EMPLOYEES table as. Emp #, Employee, Job, and Hire Date, respectively.**

Ans3.

SELECT EMPLOYEE\_ID "Emp#", LAST\_NAME "Employee",

JOB\_ID "Job", HIRE\_DATE "Hire Date"

FROM EMPLOYEES;

**Verification table -**

Emp#	Employee	Job	Hire Date
100	King	AD_PRES	17-JUN-87
101	Kochhar	AD_VP	21-SEP-89
102	De Haan	AD_VP	13-JAN-93
103	Hundold	IT_PROG	03-JAN-90
104	Ernst	IT_PROG	21-MAY-91
107	Lorenz	IT_PROG	07-FEB-99
124	Mourgos	ST_MAN	16-NOV-99
141	Rajs	ST_CLERK	17-OCT-95
142	Davies	ST_CLERK	29-JAN-97
143	Matos	ST_CLERK	15-MAR-98
144	Vargas	ST_CLERK	09-JUL-98
149	Zlotkey	SA_MAN	29-JAN-00
174	Abel	SA_REP	11-MAY-96
176	Taylor	SA_REP	24-MAR-98
Emp#	Employee	Job	Hire Date
178	Grant	SA_REP	24-MAY-99
200	Whalen	AD_ASST	14-SEP-87
201	Hartstein	MK_MAN	17-FEB-96
202	Fay	MK_REP	17-AUG-97
205	Higgins	AC_MGR	07-JUN-94
206	Gietz	AC_ACCOUNT	07-JUN-94
999	Taylor	ST_CLERK	07-JUN-99

21 rows selected.

**Q4. Display the last name concatenated with the job ID, separated by a comma and space, and name the column Employee and Title.**

Employee and Title
King, AD_PRES
Kochhar, AD_VP
De Haan, AD_VP
Hunold, IT_PROG
Ernst, IT_PROG
Lorentz, IT_PROG
Mourgos, ST_MAN
Rajs, ST_CLERK
Davies, ST_CLERK

Ans4.

SELECT LAST\_NAME||', '||JOB\_ID "Employee and Title"

FROM EMPLOYEES;

**Verification table -**

Employee and Title
King, AD_PRES
Kochhar, AD_VP
De Haan, AD_VP
Hundold, IT_PROG
Ernst, IT_PROG
Lorenz, IT_PROG
Mourgos, ST_MAN
Rajs, ST_CLERK
Davies, ST_CLERK
Matos, ST_CLERK
Vargas, ST_CLERK
Zlotkey, SA_MAN
Abel, SA_REP
Taylor, SA_REP
Employee and Title
Grant, SA_REP
Whalen, AD_ASST
Hartstein, MK_MAN
Fay, MK_REP
Higgins, AC_MGR
Gietz, AC_ACCOUNT
Taylor, ST_CLERK

21 rows selected.

**Q5. Create a query to display all the data from the EMPLOYEES table. Separate each column by a comma. Name the column THE\_OUTPUT.**

THE_OUTPUT
100,Steven,King,SKING,515.123.4567,AD_PRES,,17-JUN-87,24000,,90
101,Neena,Kochhar,NKOCHHAR,515.123.4568,AD_VP,100,21-SEP-89,17000,,90
102,Lex,De Haan,LDEHAAN,515.123.4568,AD_VP,100,13-JAN-93,17000,,90
103,Alexander,Hunold,AHUNOLD,590.423.4567,IT_PROG,102,03-JAN-90,9000,,60
104,Bruce,Ernst,BERNST,590.423.4568,IT_PROG,103,21-MAY-91,6000,,60
107,Diana,Lorentz,DLORENTZ,590.423.5567,IT_PROG,103,07-FEB-99,4200,,60
124,Kevin,Mourgos,KMOURGOS,650.123.5234,ST_MAN,100,16-NOV-99,5800,,50
141,Trenna,Rajs,TRAJS,650.121,8009,ST_CLERK,124,17-OCT-95,3500,,50

Ans5.

```

SELECT EMPLOYEE_ID||','||FIRST_NAME||','||LAST_NAME
||','||EMAIL||','||PHONE_NUMBER||','||HIRE_DATE
||','||JOB_ID||','||SALARY||','||COMMISSION_PCT
||','||MANAGER_ID||','||DEPARTMENT_ID "THE_OUTPUT"
FROM EMPLOYEES;

```

**Verification table –**

THE_OUTPUT
100,Stewen,King,King,121473456,17-JUN-87,AD_PRES,2400,,90
101,Neena,Kochhar,NKochhar,4587256123,21-SEP-89,AD_VP,17000,,100,90
102,Lex,De Haan,LDEHaan,14321123,13-JAN-93,AD_VP,17000,,100,90
103,Alexander,Hundold,Ahunold,9180490001,03-JAN-90,IT_PROG,9000,,102,60
104,Bruce,Emst,Bernst,9080490111,21-MAY-91,IT_PROG,4200,,103,60
107,Diana,Lorenz,Dlorenz,9070410121,07-FEB-99,IT_PROG,5800,,100,50
124,Kevin,Mourgos,Kmourgog,9979510331,16-NOV-99,ST_MAN,3500,,124,50
141,Trenna,Rajs,Trajs,9978410121,17-OCT-95,ST_CLERK,3100,,124,50
142,Curtis,Davies,Ddavies,997854621,29-JAN-97,ST_CLERK,2600,,124,50
143,Randall,Matos,Rmatos,6501212874,15-MAR-98,ST_CLERK,2600,,124,50
144,Peter,Vargas,Pvargas,6501212004,09-JUL-98,ST_CLERK,2500,,124,50
149,Eleni,Zlotkey,Ezlotkey,6501212005,29-JAN-00,SA_MAN,10500,2,100,80
174,Ellen,Abel,Eabel,1644429267,11-MAY-96,SA_REP,1100,3,149,80
176,Jonathon,Taylor,Jtaylor,1644429265,24-MAR-98,SA_REP,8600,2,149,80
THE_OUTPUT
178,Kimberely,Grant,Kgrant,1644429263,24-MAY-99,SA_REP,7000,15,149,
200,Jennifer,Whalen,Jwhalen,5151234444,14-SEP-87,AD_ASST,4400,,101,10
201,Michael,Hartstein,Mhartste,5151235555,17-FEB-96,MK_MAN,13000,,100,20
202,Pat,Fay,Pfay,6031236666,17-AUG-97,MK_REP,6000,,201,20
205,Shelley,Higgins,Shiggins,5151238080,07-JUN-94,AC_MGR,12000,,101,110
206,Williams,Gietz,Wgietz,5151238181,07-JUN-94,AC_ACCOUNT,8300,,205,110
999,,Taylor,Dtaylor,,07-JUN-99,ST_CLERK,5000,,,50

21 rows selected.

ASSIGNMENT – 5(2)

ON: RESTRICTING AND SORTING DATA

Q1. Create a query to display the last name and salary of employees earning more than \$12,000. Place your SQL statement in a text file named lab5\_1.sql. Run your query.

LAST_NAME	SALARY
King	24000
Kochhar	17000
De Haan	17000
Hartstein	13000

Ans1.

```

SELECT LAST_NAME, SALARY
FROM EMPLOYEES
WHERE SALARY >12000;
```

Verification table -

## Work Screen

File or URL:  No file chosen

Enter statements:

```
SELECT LAST_NAME, SALARY
FROM EMPLOYEES
WHERE SALARY >12000;
```

LAST_NAME	SALARY
Kochhar	17000
De Haan	17000
Hartstein	13000

**Q2. Create a query to display the employee last name and department number for each employee number 176.**

LAST_NAME	DEPARTMENT_ID
Taylor	80

Ans2.

```
SELECT LAST_NAME, DEPARTMENT_ID
```

```
FROM EMPLOYEES
```

```
WHERE EMPLOYEE_ID=176;
```

**Verification table -**

## Work Screen

File or URL:  No file chosen

Enter statements:

```
SELECT LAST_NAME, DEPARTMENT_ID
FROM EMPLOYEES
WHERE EMPLOYEE_ID=176;
```

LAST_NAME	DEPARTMENT_ID
Taylor	80

**Q3. Modify lab5\_1.sql to display the last name and salary for all employees whose salary is not in the range of \$5,000 and \$12,000. Place your SQL statement in a text file named lab5\_3.sql.**

LAST_NAME	SALARY
King	24000
Kochhar	17000
De Haan	17000
Lorentz	4200
Rajs	3500
Davies	3100
Matos	2600
Vargas	2500
Whalen	4400
Hartstein	13000

10 rows selected.

Ans3.

SELECT LAST\_NAME, SALARY

FROM EMPLOYEES

WHERE SALARY NOT BETWEEN 5000 AND 12000;

### Verification table -

File or URL:  No file chosen

Enter statements:

```
SELECT LAST_NAME, SALARY
FROM EMPLOYEES
WHERE SALARY NOT BETWEEN 5000 AND 12000;
```

LAST_NAME	SALARY
King	2400
Kochhar	17000
De Haan	17000
Ernst	4200
Mourgos	3500
Rajs	3100
Davies	2600
Matos	2600
Vargas	2500
Abel	1100
Whalen	4400
Hartstein	13000

12 rows selected.

**Q4. Display the employee last name, job ID, and start date of employees hired between February 20, 1998 and May 1, 1998. Order the query in ascending order by start date.**

LAST_NAME	JOB_ID	HIRE_DATE
Matos	ST_CLERK	15-MAR-98
Taylor	SA_REP	24_MAR-98

Ans4.



```

SELECT LAST_NAME, JOB_ID, HIRE_DATE

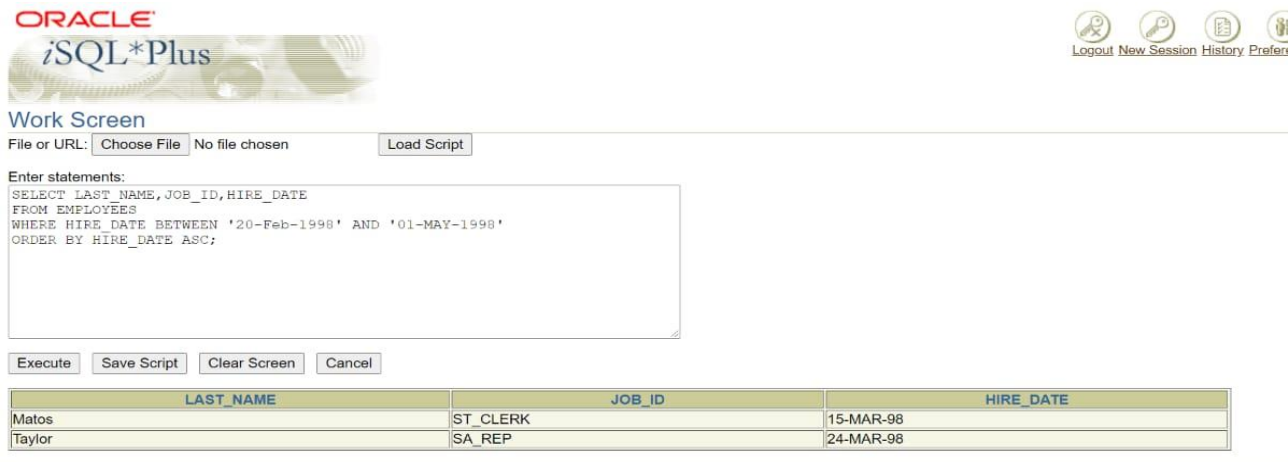
FROM EMPLOYEES

WHERE HIRE_DATE BETWEEN '20-Feb-1998' AND '01-MAY-1998'

ORDER BY HIRE_DATE ASC;

```

### Verification table -



The screenshot shows the Oracle iSQL\*Plus interface. At the top, there's a header with the Oracle logo and navigation links: Logout, New Session, History, and Preferences. Below the header, the 'Work Screen' section contains a 'File or URL:' field with 'Choose File' and 'No file chosen' buttons, and a 'Load Script' button. The main area is labeled 'Enter statements:' and contains a text box with the following SQL query:

```

SELECT LAST_NAME, JOB_ID, HIRE_DATE
FROM EMPLOYEES
WHERE HIRE_DATE BETWEEN '20-Feb-1998' AND '01-MAY-1998'
ORDER BY HIRE_DATE ASC;

```

Below the text box are buttons for 'Execute', 'Save Script', 'Clear Screen', and 'Cancel'. The 'Execute' button has been clicked, and the results are displayed in a table below:

LAST_NAME	JOB_ID	HIRE_DATE
Matos	ST_CLERK	15-MAR-98
Taylor	SA_REP	24-MAR-98

**Q5. Display the last name and department number of all employees in departments 20 and 50 in alphabetical order by name.**

LAST_NAME	DEPARTMENT_ID
Davies	50
Fay	20
Hartstein	20
Matos	50
Mourgos	50
Rajs	50
Vargas	50

**7 rows selected.**

Ans5.

```

SELECT LAST_NAME, DEPARTMENT_ID

FROM EMPLOYEES

WHERE DEPARTMENT_ID IN (20, 50)

ORDER BY LAST_NAME ASC;

```

## Verification table -

### Work Screen

File or URL:  No file chosen

Enter statements:

```
SELECT LAST_NAME, DEPARTMENT_ID  
FROM EMPLOYEES  
WHERE DEPARTMENT_ID IN (20, 50)  
ORDER BY LAST_NAME ASC;
```

LAST_NAME	DEPARTMENT_ID
Davies	50
Fay	20
Hartstein	20
Lorenz	50
Matos	50
Mourgos	50
Rajs	50
Taylor	50
Vargas	50

9 rows selected.

**Q6. Modify lab5\_3.sql to list the last name and salary of employees who earn between \$5,000 and \$12000, and are in department 20 or 50. Label the columns Employee and Monthly Salary, respectively. Resave lab5\_3.sql as lab5\_6.sql. Run the statement in lab5\_6.sql.**

Employee	Monthly Salary
Mourgos	5800
Fay	6000

Ans6.

```
SELECT LAST_NAME "Employee", SALARY "Monthly Salary"  
  
FROM EMPLOYEES  
  
WHERE SALARY BETWEEN 5000 AND 12000  
  
AND DEPARTMENT_ID IN (20, 50);
```

## Verification table –

## Work Screen

File or URL: Choose File No file chosen

Load Script

Enter statements:

```
SELECT LAST_NAME "Employee", SALARY "Monthly Salary"
FROM EMPLOYEES
WHERE SALARY BETWEEN 5000 AND 12000
AND DEPARTMENT_ID IN (20,50);
```

Execute

Save Script

Clear Screen

Cancel

Employee	Monthly Salary
Lorenz	5800
Fay	6000
Taylor	5000

**Q7. Display the last name and hire date of every employee who was hired in 1994.**

LAST_NAME	HIRE_DATE
Higgins	07-JUN-94
Gietz	07-JUN-94

Ans7.

SELECT LAST\_NAME, HIRE\_DATE

FROM EMPLOYEES

WHERE HIRE\_DATE LIKE '%94';

**Verification table -**

## Work Screen

File or URL: Choose File No file chosen

Load Script

Enter statements:

```
SELECT LAST_NAME, HIRE_DATE
FROM EMPLOYEES
WHERE HIRE_DATE LIKE '%94';
```

Execute

Save Script

Clear Screen

Cancel

LAST_NAME	HIRE_DATE
Higgins	07-JUN-94
Gietz	07-JUN-94

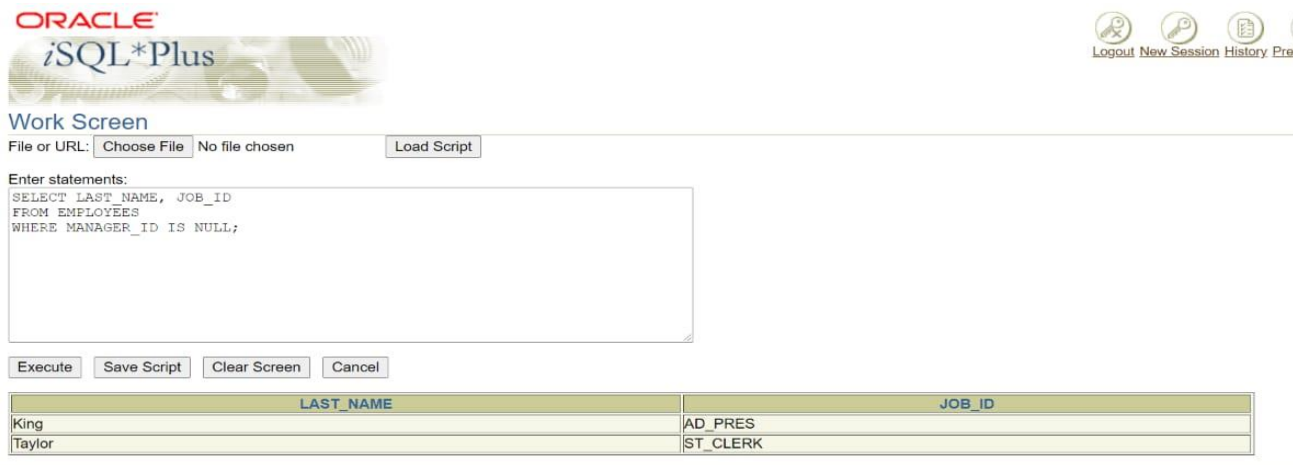
**Q8. Display the last name and job title of all employees who do not have a manager.**

LAST_NAME	JOB_ID
King	AD_PRES

Ans8.

```
SELECT LAST_NAME, JOB_ID
FROM EMPLOYEES
WHERE MANAGER_ID IS NULL;
```

**Verification table -**



The screenshot shows the Oracle iSQL\*Plus Work Screen. At the top, there is the Oracle logo and the text "iSQL\*Plus". Below this, there is a "Work Screen" header. Under the header, there is a "File or URL:" section with a "Choose File" button and a "Load Script" button. Below this, there is a text area for "Enter statements:" containing the SQL query: 

```
SELECT LAST_NAME, JOB_ID
FROM EMPLOYEES
WHERE MANAGER_ID IS NULL;
```

 Below the text area, there are four buttons: "Execute", "Save Script", "Clear Screen", and "Cancel". Below the buttons, there is a table with two columns: "LAST\_NAME" and "JOB\_ID". The table contains two rows of data: "King" and "AD PRES", and "Taylor" and "ST CLERK".

LAST_NAME	JOB_ID
King	AD PRES
Taylor	ST CLERK

**Q9. Display the last name, salary and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.**

LAST_NAME	SALARY	COMMISSION_PCT
Abel	11000	.3
Zlotkey	10500	.2
Taylor	8600	.2
Grant	7000	.15

Ans9.

```
SELECT LAST_NAME, SALARY, COMMISSION_PCT
FROM EMPLOYEES
WHERE COMMISSION_PCT IS NOT NULL
ORDER BY SALARY DESC, COMMISSION_PCT DESC;
```

**Verification table -**

## Work Screen

File or URL: Choose File No file chosen

Load Script

Enter statements:

```
SELECT LAST_NAME, SALARY, COMMISSION_PCT
FROM EMPLOYEES
WHERE COMMISSION_PCT IS NOT NULL
ORDER BY SALARY DESC, COMMISSION_PCT DESC;
```

Execute Save Script Clear Screen Cancel

LAST_NAME	SALARY	COMMISSION_PCT
Zlotkey	10500	2
Taylor	8600	2
Grant	7000	15
Abel	1100	3

**Q10. Display the last names of all employees where the third letter of the name is an a.**

**LAST\_NAME**

**Grant**

**Whalen**

Ans10.

SELECT LAST\_NAME

FROM EMPLOYEES

WHERE LAST\_NAME LIKE '\_\_a%';

**Verification table -**

## Work Screen

File or URL: Choose File No file chosen

Load Script

Enter statements:

```
SELECT LAST_NAME
FROM EMPLOYEES
WHERE LAST_NAME LIKE '__a%';
```

Execute Save Script Clear Screen Cancel

LAST_NAME
Grant
Whalen

**Q11. Display the last names of all employees who have an a and an e in their last name.**

**LAST\_NAME**

**De Haan**

Davies
Whalen
Hartstein


Ans11.

SELECT LAST\_NAME

FROM EMPLOYEES

WHERE LAST\_NAME LIKE '%a%' AND LAST\_NAME LIKE '%e%';

### Verification table -



The screenshot shows the Oracle iSQL\*Plus Work Screen. At the top, there is a header with the Oracle logo and navigation links: Logout, New Session, History, and Profile. Below the header, the title "Work Screen" is displayed. A section for "File or URL:" includes a "Choose File" button and a "Load Script" button. The main area is labeled "Enter statements:" and contains a text box with the following SQL query:
 

```
SELECT LAST_NAME
FROM EMPLOYEES
WHERE LAST_NAME LIKE '%a%' AND LAST_NAME LIKE '%e%';
```

 Below the text box are buttons for "Execute", "Save Script", "Clear Screen", and "Cancel". At the bottom, a table displays the results of the query, with the column header "LAST\_NAME". The table contains four rows: De Haan, Davies, Whalen, and Hartstein.

**Q12. Display the last name, job, and salary for all employees whose job is sales representative or stock clerk and whose salary is not equal to \$2,500, \$3,500, or \$7,000.**

LAST_NAME	JOB_ID	SALARY
Davies	ST_CLERK	3100
Matos	ST_CLERK	2600
Abel	SA_REP	11000
Taylor	SA_REP	8600

Ans12.

SELECT LAST\_NAME, JOB\_ID, SALARY

FROM EMPLOYEES

WHERE JOB\_ID='SA\_REP' OR JOB\_ID='ST\_CLERK'

AND SALARY NOT IN (2500, 3500, 7000);

### Verification table -

The screenshot shows the iSQL\*Plus Work Screen. At the top, there is a header with the iSQL\*Plus logo and navigation links: Logout, New Session, History, and Preferences. Below the header, the 'Work Screen' section contains a 'File or URL:' field with a 'Choose File' button and a 'Load Script' button. The 'Enter statements:' text area contains the following SQL query:

```
SELECT LAST_NAME, JOB_ID, SALARY
FROM EMPLOYEES
WHERE JOB_ID='SA_REP' OR JOB_ID='ST_CLERK'
AND SALARY NOT IN (2500,3500,7000);
```

Below the text area are buttons for 'Execute', 'Save Script', 'Clear Screen', and 'Cancel'. The results are displayed in a table with three columns: LAST\_NAME, JOB\_ID, and SALARY. The table contains 7 rows of data. Below the table, it says '7 rows selected.'

LAST_NAME	JOB_ID	SALARY
Rajs	ST_CLERK	3100
Davies	ST_CLERK	2600
Matos	ST_CLERK	2600
Abel	SA_REP	1100
Taylor	SA_REP	8600
Grant	SA_REP	7000
Taylor	ST_CLERK	5000

**Q13. Modify lab5\_6.sql to display the last name, salary, and commission for all employees whose commission amount is 200%. Resave lab5\_6.sql as lab5\_13.sql. Rerun the statement in lab5\_13.sql.**

Employee	Monthly Salary	COMMISSION_PCT
Zlotkey	10500	2
Taylor	8600	2

Ans13.

```
SELECT LAST_NAME "Employee", SALARY "Monthly Salary", COMMISSION_PCT
FROM EMPLOYEES
WHERE COMMISSION_PCT=2;
```

### Verification table –

## Work Screen

File or URL:  No file chosen

Enter statements:

```
SELECT LAST NAME "Employee", SALARY "Monthly Salary", COMMISSION_PCT  
FROM EMPLOYEES  
WHERE COMMISSION_PCT=2;
```

Employee	Monthly Salary	COMMISSION_PCT
Zlotkey	10500	2
Taylor	8600	2