**Ex. No: 2 Date: 28 – 07 - 2022**

**Experiment 2**

Demonstrate the following Query Concepts / Clauses / Statements / Commands / Operations.

1. Substitution variables

(SELECT &c1, &c2, &c3…….,&cn FROM <TABLE\_NAME>)

1. Case Manipulation

LOWER(<COLUMN\_NAME>), UPPER(<COLUMN\_NAME>)

1. ORDER BY (ASC, DESC)
2. LIKE Command (‘\_a%’, ’%a%’, ‘%a’)
3. Aggregate functions (SUM,MAX,MIN,AVG,COUNT)
4. ROUND Function
5. DATE datatype
6. IN and NOT IN Operators
7. IS NULL and IS NOT NULL operator
8. AS command
9. SET, UPDATE and ALTER

**Queries:**

1. **Create tables samp having attributes regno and name.**

SQL> CREATE TABLE samp (regno number, name varchar(15));

1. **Demonstrate Substitution Variables**

SQL> INSERT INTO samp VALUES (&No, ‘&name’);

SQL> SELECT &c1, &c2, &c3 from employees;

Enter value for c1: Salary

Enter value for c2: last\_name

Enter value for c3: job\_id

1. **Demonstrate Case Manipulation**

SQL> select first\_name, lower(first\_name) from employees;

SQL> select first\_name,lower(first\_name),upper(first\_name),initcap(first\_name) from employees;

1. **Display Employee ID, First Name and Salary of employee whose First Name is ‘Michael’.**

SQL> select first\_name, employee\_id, salary from employees where first\_name='Michael';

1. **Demonstrate the ORDER BY clause**

SQL> select first\_name, salary from employees order by salary asc;

SQL> select first\_name, salary from employees order by salary desc;

1. **Demonstrate the LIKE Command**

SQL> select first\_name from employees where first\_name like 'A%' and first\_name like '%a';

SQL> select first\_name from employees where first\_name like '\_a%';

SQL> select first\_name from employees where first\_name like '\_\_n%';

SQL> select first\_name from employees where job\_id like '%REP%';

1. **Demonstrate Aggregate functions and AS command**

SQL> select sum(salary) as SUM, avg(salary) as AVG, min(salary) as MIN, max(salary)

as MAX, count(salary) as COUNT from employees;

1. **Demonstrate GROUP BY statement**

SQL> select department\_id, sum(salary) from employees group by department\_id having sum(salary)>50000 order by sum(salary) desc;

1. **Demonstrate ROUND function**

SQL> select round(45.93456,3) from dual;

SQL> select round(-1.1,0) from dual;

1. **Demonstrate ALTER, SET, UPDATE and DATE datatype**

SQL> alter table samp add(doj date);

SQL> update samp set doj='22-mar-2020' where regno = 102;

1. **Demonstrate IN, NOT IN, IS NULL AND IS NOT NULL operator.**

SQL> select first\_name,department\_id from employees where department\_id in(10,20,30);

SQL> select first\_name,department\_id from employees where department\_id not in(10,20,30);

SQL> select employee\_id, commission\_pct from employees where commission\_pct is null;

SQL> select employee\_id, commission\_pct from employees where commission\_pct is not null;

**Code:**

SQL> @c:/Ora/hr\_main;

\*\*\*\*\*\* Creating REGIONS table ....

Table created.

Index created.

Table altered.

\*\*\*\*\*\* Creating COUNTRIES table ....

Table created.

Table altered.

\*\*\*\*\*\* Creating LOCATIONS table ....

Table created.

Index created.

Table altered.

Sequence created.

\*\*\*\*\*\* Creating DEPARTMENTS table ....

Table created.

Index created.

Table altered.

Sequence created.

\*\*\*\*\*\* Creating JOBS table ....

Table created.

Index created.

Table altered.

\*\*\*\*\*\* Creating EMPLOYEES table ....

Table created.

Index created.

Table altered.

Table altered.

Sequence created.

\*\*\*\*\*\* Creating JOB\_HISTORY table ....

Table created.

Index created.

Table altered.

\*\*\*\*\*\* Creating EMP\_DETAILS\_VIEW view ...

View created.

Commit complete.

Session altered.

\*\*\*\*\*\* Populating REGIONS table ....

1 row created.

1 row created.

1 row created.

1 row created.

\*\*\*\*\*\* Populating COUNTIRES table ....

1 row created.

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1 row created.

\*\*\*\*\*\* Populating LOCATIONS table ....

1 row created.

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1 row created.

\*\*\*\*\*\* Populating DEPARTMENTS table ....

Table altered.

1 row created.

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1 row created.

\*\*\*\*\*\* Populating JOBS table ....

1 row created.

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1 row created.

\*\*\*\*\*\* Populating EMPLOYEES table ....

1 row created.

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1 row created.

\*\*\*\*\*\* Populating JOB\_HISTORY table ....

1 row created.

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1 row created.

Table altered.

Commit complete.

Index created.

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Index created.

Commit complete.

Procedure created.

Trigger created.

Procedure created.

Trigger created.

Commit complete.

Comment created.

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Comment created.

Commit complete.

SQL> select \* from employees;

EMPLOYEE\_ID FIRST\_NAME LAST\_NAME

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EMAIL PHONE\_NUMBER HIRE\_DATE JOB\_ID SALARY

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COMMISSION\_PCT MANAGER\_ID DEPARTMENT\_ID

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100 Steven King

SKING 515.123.4567 17-JUN-87 AD\_PRES 24000

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206 William Gietz

WGIETZ 515.123.8181 07-JUN-94 AC\_ACCOUNT 8300

205 110

107 rows selected.

SQL> select \* from jobs;

JOB\_ID JOB\_TITLE MIN\_SALARY MAX\_SALARY

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AD\_PRES President 20000 40000

AD\_VP Administration Vice President 15000 30000

AD\_ASST Administration Assistant 3000 6000

FI\_MGR Finance Manager 8200 16000

FI\_ACCOUNT Accountant 4200 9000

AC\_MGR Accounting Manager 8200 16000

AC\_ACCOUNT Public Accountant 4200 9000

SA\_MAN Sales Manager 10000 20000

SA\_REP Sales Representative 6000 12000

PU\_MAN Purchasing Manager 8000 15000

PU\_CLERK Purchasing Clerk 2500 5500

ST\_MAN Stock Manager 5500 8500

ST\_CLERK Stock Clerk 2000 5000

SH\_CLERK Shipping Clerk 2500 5500

IT\_PROG Programmer 4000 10000

MK\_MAN Marketing Manager 9000 15000

MK\_REP Marketing Representative 4000 9000

HR\_REP Human Resources Representative 4000 9000

PR\_REP Public Relations Representative 4500 10500

19 rows selected.

SQL> select \* from jobs where job\_title = 'President';

JOB\_ID JOB\_TITLE MIN\_SALARY MAX\_SALARY

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AD\_PRES President 20000 40000

1 row selected.

SQL> create table samp (regno number, name varchar(15));

Table created.

SQL> desc samp

Name Null? Type

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REGNO NUMBER

NAME VARCHAR2(15)

SQL> insert into samp values(&No,'&name');

Enter value for no: 101

Enter value for name: ashvath

1 row created.

SQL> /

Enter value for no: 102

Enter value for name: kevin

1 row created.

SQL> select \* from samp;

REGNO NAME

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101 ashvath

102 kevin

2 rows selected.

SQL> desc employees;

Name Null? Type

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EMPLOYEE\_ID NOT NULL NUMBER(6)

FIRST\_NAME VARCHAR2(20)

LAST\_NAME NOT NULL VARCHAR2(25)

EMAIL NOT NULL VARCHAR2(25)

PHONE\_NUMBER VARCHAR2(20)

HIRE\_DATE NOT NULL DATE

JOB\_ID NOT NULL VARCHAR2(10)

SALARY NUMBER(8,2)

COMMISSION\_PCT NUMBER(2,2)

MANAGER\_ID NUMBER(6)

DEPARTMENT\_ID NUMBER(4)

SQL> select first\_name, employee\_id from employees;

FIRST\_NAME EMPLOYEE\_ID

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Steven 100

Neena 101

Lex 102

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Hermann 204

Shelley 205

William 206

107 rows selected.

SQL> select first\_name, employee\_id, salary from employees;

FIRST\_NAME EMPLOYEE\_ID SALARY

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Steven 100 24000

Neena 101 17000

Lex 102 17000

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Hermann 204 10000

Shelley 205 12000

William 206 8300

107 rows selected.

SQL> select &c1,&c2,&c3 from employees;

Enter value for c1: salary

Enter value for c2: last\_name

Enter value for c3: job\_id

SALARY LAST\_NAME JOB\_ID

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24000 King AD\_PRES

17000 Kochhar AD\_VP

17000 De Haan AD\_VP

9000 Hunold IT\_PROG

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6500 Mavris HR\_REP

10000 Baer PR\_REP

12000 Higgins AC\_MGR

8300 Gietz AC\_ACCOUNT

107 rows selected.

SQL> select first\_name, employee\_id, salary from employees where salary>10000;

FIRST\_NAME EMPLOYEE\_ID SALARY

-------------------- ----------- ----------

Steven 100 24000

Neena 101 17000

Lex 102 17000

Nancy 108 12000

Den 114 11000

John 145 14000

Karen 146 13500

Alberto 147 12000

Gerald 148 11000

Eleni 149 10500

Clara 162 10500

Lisa 168 11500

Ellen 174 11000

Michael 201 13000

Shelley 205 12000

15 rows selected.

SQL> select first\_name, employee\_id, salary from employees where first\_name='Michael';

FIRST\_NAME EMPLOYEE\_ID SALARY

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Michael 134 2900

Michael 201 13000

2 rows selected.

SQL> select first\_name,lower(first\_name) from employees;

FIRST\_NAME LOWER(FIRST\_NAME)

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Ellen ellen

Sundar sundar

Mozhe mozhe

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Matthew matthew

Jennifer jennifer

Eleni eleni

107 rows selected.

SQL> select first\_name,lower(first\_name),upper(first\_name),initcap(first\_name) from employees;

FIRST\_NAME LOWER(FIRST\_NAME) UPPER(FIRST\_NAME) INITCAP(FIRST\_NAME) ----------- ------------------ ------------------ ---------------------

Ellen ellen ELLEN Ellen

Sundar sundar SUNDAR Sundar

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Jennifer jennifer JENNIFER Jennifer

Eleni eleni ELENI Eleni

107 rows selected.

SQL> set linesize 1500;

SQL> select first\_name,lower(first\_name),upper(first\_name),initcap(first\_name) from employees;

FIRST\_NAME LOWER(FIRST\_NAME) UPPER(FIRST\_NAME) INITCAP(FIRST\_NAME)

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Ellen ellen ELLEN Ellen

Sundar sundar SUNDAR Sundar

Mozhe mozhe MOZHE Mozhe

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Matthew matthew MATTHEW Matthew

Jennifer jennifer JENNIFER Jennifer

Eleni eleni ELENI Eleni

107 rows selected.

SQL> select employee\_id,first\_name from employees where lower(first\_name)='michael';

EMPLOYEE\_ID FIRST\_NAME

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134 Michael

201 Michael

2 rows selected.

SQL> select first\_name,salary from employees order by salary;

FIRST\_NAME SALARY

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TJ 2100

Steven 2200

Hazel 2200

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Lex 17000

Neena 17000

Steven 24000

107 rows selected.

SQL> select first\_name,salary from employees order by salary asc;

FIRST\_NAME SALARY

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TJ 2100

Steven 2200

Hazel 2200

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Lex 17000

Neena 17000

Steven 24000

107 rows selected.

SQL> select first\_name,salary from employees order by salary desc;

FIRST\_NAME SALARY

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Steven 24000

Neena 17000

Lex 17000

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Hazel 2200

Steven 2200

TJ 2100

107 rows selected.

SQL> select first\_name,salary from employees order by first\_name asc;

FIRST\_NAME SALARY

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Adam 8200

Alana 3100

Alberto 12000

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William 8300

William 7400

Winston 3200

107 rows selected.

SQL> select first\_name from employees where first\_name like 'A%';

FIRST\_NAME

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Amit

Alexis

Anthony

Alberto

Adam

Alexander

Alyssa

Alexander

Allan

Alana

10 rows selected.

SQL> select first\_name from employees where first\_name like 'A%' and first\_name like '%a';

FIRST\_NAME

--------------------

Alyssa

Alana

2 rows selected.

SQL> select first\_name from employees where first\_name like 'A%' or first\_name like '%a';

FIRST\_NAME

--------------------

Amit

Laura

Alexis

Anthony

Julia

Alberto

Adam

Alexander

Alyssa

Alexander

Neena

Sundita

Diana

Mattea

Allan

Julia

Lisa

Joshua

Trenna

Nandita

Martha

Clara

Shanta

Alana

24 rows selected.

SQL> select first\_name from employees where first\_name like '\_a%';

FIRST\_NAME

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David

Sarah

David

Laura

Harrison

Nanette

Karen

Daniel

Pat

Tayler

Nancy

Danielle

Vance

Payam

Janette

James

David

Jack

Jason

James

Mattea

Randall

Samuel

Karen

Valli

Randall

Hazel

Nandita

Sarath

Martha

Patrick

Matthew

32 rows selected.

SQL> select first\_name from employees where first\_name like '\_\_n%';

FIRST\_NAME

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Sundar

Nanette

Jennifer

Daniel

Nancy

Danielle

Vance

Janette

Sundita

Renske

Randall

Donald

Randall

Den

Nandita

Lindsey

Jonathon

Winston

Jennifer

19 rows selected.

SQL> select first\_name from employees where job\_id like '%REP%';

FIRST\_NAME

--------------------

Peter

David

Peter

Christopher

Nanette

Oliver

Janette

Patrick

Allan

Lindsey

Louise

Sarath

Clara

Danielle

Mattea

David

Sundar

Amit

Lisa

Harrison

Tayler

William

Elizabeth

Sundita

Ellen

Alyssa

Jonathon

Jack

Kimberely

Charles

Pat

Susan

Hermann

33 rows selected.

SQL> select sum(salary) from employees;

SUM(SALARY)

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691400

1 row selected.

SQL> select sum(salary),avg(salary),min(salary),max(salary) from employees;

SUM(SALARY) AVG(SALARY) MIN(SALARY) MAX(SALARY)

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691400 6461.68224 2100 24000

1 row selected.

SQL> select sum(salary) as SUM,avg(salary) as AVG,min(salary) as MIN,max(salary) as MAX,count(salary) as COUNT from employees;

SUM AVG MIN MAX COUNT

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691400 6461.68224 2100 24000 107

1 row selected.

SQL> select department\_id, sum(salary) from employees group by department\_id;

DEPARTMENT\_ID SUM(SALARY)

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100 51600

30 24900

7000

90 58000

20 19000

70 10000

110 20300

50 156400

80 304500

40 6500

60 28800

10 4400

12 rows selected.

SQL> select department\_id, job\_id, sum(salary) from employees group by department\_id,job\_id;

DEPARTMENT\_ID JOB\_ID SUM(SALARY)

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110 AC\_ACCOUNT 8300

90 AD\_VP 34000

50 ST\_CLERK 55700

80 SA\_REP 243500

50 ST\_MAN 36400

80 SA\_MAN 61000

110 AC\_MGR 12000

90 AD\_PRES 24000

60 IT\_PROG 28800

100 FI\_MGR 12000

30 PU\_CLERK 13900

50 SH\_CLERK 64300

20 MK\_MAN 13000

100 FI\_ACCOUNT 39600

SA\_REP 7000

70 PR\_REP 10000

30 PU\_MAN 11000

10 AD\_ASST 4400

20 MK\_REP 6000

40 HR\_REP 6500

20 rows selected.

SQL> select department\_id, sum(salary) from employees group by department\_id having sum(salary)>50000;

DEPARTMENT\_ID SUM(SALARY)

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100 51600

90 58000

50 156400

80 304500

4 rows selected.

SQL> select department\_id, sum(salary) from employees group by department\_id having sum(salary)>50000 order by sum(salary) desc;

DEPARTMENT\_ID SUM(SALARY)

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80 304500

50 156400

90 58000

100 51600

4 rows selected.

SQL> select round(45.93456,2) from dual;

ROUND(45.93456,2)

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45.93

1 row selected.

SQL> select round(45.93456,3) from dual;

ROUND(45.93456,3)

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45.935

1 row selected.

SQL> select round(41,0) from dual;

ROUND(41,0)

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41

1 row selected.

SQL> select round(41.93456,0) from dual;

ROUND(41.93456,0)

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42

1 row selected.

SQL> select round(-1.93456,0) from dual;

ROUND(-1.93456,0)

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-2

1 row selected.

SQL> select round(-1.1,0) from dual;

ROUND(-1.1,0)

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-1

1 row selected.

SQL> alter table samp add(doj date);

Table altered.

SQL> set linesize 20;

SQL> desc samp;

Name Null? Type

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REGNO NUMBER

NAME VARCHAR2(15)

DOJ DATE

SQL> set linesize 1500;

SQL> select \* from samp;

REGNO NAME DOJ

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101 ashvath

102 kevin

2 rows selected.

SQL> update samp set doj='01-jan-2021';

2 rows updated.

SQL> update samp set doj='22-mar-2020' where regno = 102;

1 row updated.

SQL> select \* from samp;

REGNO NAME DOJ

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101 ashvath 01-JAN-21

102 kevin 22-MAR-20

2 rows selected.

SQL> set linesize 20;

SQL> desc employees;

Name Null? Type

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EMPLOYEE\_ID NOT NULL NUMBER(6)

FIRST\_NAME VARCHAR2(20)

LAST\_NAME NOT NULL VARCHAR2(25)

EMAIL NOT NULL VARCHAR2(25)

PHONE\_NUMBER VARCHAR2(20)

HIRE\_DATE NOT NULL DATE

JOB\_ID NOT NULL VARCHAR2(10)

SALARY NUMBER(8,2)

COMMISSION\_PCT NUMBER(2,2)

MANAGER\_ID NUMBER(6)

DEPARTMENT\_ID NUMBER(4)

SQL> select sysdate from dual;

SYSDATE

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28-JUL-22

1 row selected.

SQL> set linesize 1500;

SQL> select employee\_id, first\_name, hire\_date, sysdate-hire\_date as exp from employees;

EMPLOYEE\_ID FIRST\_NAME HIRE\_DATE EXP

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100 Steven 17-JUN-87 12825.4861

101 Neena 21-SEP-89 11998.4861

102 Lex 13-JAN-93 10788.4861

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204 Hermann 07-JUN-94 10278.4861

205 Shelley 07-JUN-94 10278.4861

206 William 07-JUN-94 10278.4861

107 rows selected.

SQL> select employee\_id, first\_name, hire\_date, (sysdate-hire\_date)/30 as exp from employees;

EMPLOYEE\_ID FIRST\_NAME HIRE\_DATE EXP

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100 Steven 17-JUN-87 427.516265

101 Neena 21-SEP-89 399.949598

102 Lex 13-JAN-93 359.616265

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204 Hermann 07-JUN-94 342.616265

205 Shelley 07-JUN-94 342.616265

206 William 07-JUN-94 342.616265

107 rows selected.

SQL> select employee\_id, first\_name, hire\_date, round(((sysdate-hire\_date)/30),0) as exp from employees;

EMPLOYEE\_ID FIRST\_NAME HIRE\_DATE EXP

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100 Steven 17-JUN-87 428

101 Neena 21-SEP-89 400

102 Lex 13-JAN-93 360

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204 Hermann 07-JUN-94 343

205 Shelley 07-JUN-94 343

206 William 07-JUN-94 343

107 rows selected.

SQL> select first\_name,department\_id from employees where department\_id in(10,20,30);

FIRST\_NAME DEPARTMENT\_ID

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Jennifer 10

Michael 20

Pat 20

Den 30

Alexander 30

Shelli 30

Sigal 30

Guy 30

Karen 30

9 rows selected.

SQL> select first\_name,department\_id from employees where department\_id not in(10,20,30);

FIRST\_NAME DEPARTMENT\_ID

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Steven 90

Neena 90

Lex 90

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Hermann 70

Shelley 110

William 110

97 rows selected.

SQL> select employee\_id, commission\_pct from employees;

EMPLOYEE\_ID COMMISSION\_PCT

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100

101

102

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145 .4

146 .3

147 .3

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204

205

206

107 rows selected.

SQL> select employee\_id, commission\_pct from employees where commission\_pct is null;

EMPLOYEE\_ID COMMISSION\_PCT

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100

101

102

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204

205

206

72 rows selected.

SQL> select employee\_id, commission\_pct from employees where commission\_pct is not null;

EMPLOYEE\_ID COMMISSION\_PCT

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145 .4

146 .3

147 .3

148 .3

149 .2

150 .3

151 .25

152 .25

153 .2

154 .2

155 .15

156 .35

157 .35

158 .35

159 .3

160 .3

161 .25

162 .25

163 .15

164 .1

165 .1

166 .1

167 .1

168 .25

169 .2

170 .2

171 .15

172 .15

173 .1

174 .3

175 .25

176 .2

177 .2

178 .15

179 .1

35 rows selected.