

Exercise 1: String Patterns

1.-For each department ID retrieve the number of employees in the department.

The screenshot shows the IBM Db2 on Cloud interface. The SQL editor contains the following query:

```
1 SELECT F_NAME , L_NAME
2 FROM EMPLOYEES
3 WHERE ADDRESS LIKE 'NElgIn,ILN';
4
```

The results pane displays a table with 10 columns: EMP_ID, F_NAME, L_NAME, SSN, B_DATE, SEX, ADDRESS, JOB_ID, SALARY, MANAGER_ID, and DEP_ID. The table contains 10 rows of employee data.

EMP_ID	F_NAME	L_NAME	SSN	B_DATE	SEX	ADDRESS	JOB_ID	SALARY	MANAGER_ID	DEP_ID
E1001	John	Thomas	123456	1976-09-01	M	5631 Rice, OakPark,IL	100	100000.00	30001	2
E1002	Alice	James	123457	1972-07-31	F	980 Berry In, Elgin,IL	200	80000.00	30002	5
E1003	Steve	Wells	123458	1980-10-08	M	291 Springs, Gary,IL	300	50000.00	30002	5
E1004	Santosh	Kumar	123459	1985-07-20	M	511 Aurora Av, Aurora,IL	400	60000.00	30002	5
E1005	Ahmed	Hussain	123410	1981-04-01	M	216 Oak Tree, Geneva,IL	500	70000.00	30001	2
E1006	Nancy	Allen	123411	1978-06-02	F	111 Green Pl, Elgin,IL	600	90000.00	30001	2
E1007	Mary	Thomas	123412	1975-05-05	F	100 Rose Pl, Gary,IL	650	65000.00	30003	7
E1008	Bharath	Gupta	123413	1985-06-05	M	145 Berry Ln, Naperville,IL	660	65000.00	30003	7
E1009	Andrea	Jones	123414	1990-09-07	F	120 Fall Creek, Gary,IL	234	70000.00	30003	7

2.- Retrieve all employees who were born during the 1970's.

The screenshot shows the IBM Db2 on Cloud interface. The SQL editor contains the following query:

```
1 SELECT F_NAME , L_NAME
2 FROM EMPLOYEES
3 WHERE B_DATE LIKE '197%';
```

The results pane displays a table with 10 columns: EMP_ID, F_NAME, L_NAME, SSN, B_DATE, SEX, ADDRESS, JOB_ID, SALARY, MANAGER_ID, and DEP_ID. The table contains 10 rows of employee data.

EMP_ID	F_NAME	L_NAME	SSN	B_DATE	SEX	ADDRESS	JOB_ID	SALARY	MANAGER_ID	DEP_ID
E1001	John	Thomas	123456	1976-09-01	M	5631 Rice, OakPark,IL	100	100000.00	30001	2
E1002	Alice	James	123457	1972-07-31	F	980 Berry In, Elgin,IL	200	80000.00	30002	5
E1003	Steve	Wells	123458	1980-10-08	M	291 Springs, Gary,IL	300	50000.00	30002	5
E1004	Santosh	Kumar	123459	1985-07-20	M	511 Aurora Av, Aurora,IL	400	60000.00	30002	5
E1005	Ahmed	Hussain	123410	1981-04-01	M	216 Oak Tree, Geneva,IL	500	70000.00	30001	2
E1006	Nancy	Allen	123411	1978-06-02	F	111 Green Pl, Elgin,IL	600	90000.00	30001	2
E1007	Mary	Thomas	123412	1975-05-05	F	100 Rose Pl, Gary,IL	650	65000.00	30003	7
E1008	Bharath	Gupta	123413	1985-06-05	M	145 Berry Ln, Naperville,IL	660	65000.00	30003	7
E1009	Andrea	Jones	123414	1990-09-07	F	120 Fall Creek, Gary,IL	234	70000.00	30003	7

3.- Retrieve all employees in department 5 whose salary is between 60000 and 70000.

The screenshot shows the IBM Db2 on Cloud interface. On the left, there's a sidebar with 'Data objects' and 'Saved objects'. The main area displays a SQL query in a text editor:

```
1 SELECT *
2 FROM EMPLOYEES
3 WHERE (SALARY BETWEEN 68888 AND 78888) AND DEP_ID = 5;
```

Below the query editor, the 'Results' tab is active, showing a table with 10 columns: EMP_ID, F_NAME, L_NAME, SSN, B_DATE, SEX, ADDRESS, JOB_ID, SALARY, MANAGER_ID, and DEP_ID. The table contains 10 rows of employee data.

EMP_ID	F_NAME	L_NAME	SSN	B_DATE	SEX	ADDRESS	JOB_ID	SALARY	MANAGER_ID	DEP_ID
E1001	John	Thomas	123456	1976-09-01	M	5631 Rice, OakPark,IL	100	100000.00	30001	2
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E1005	Ahmed	Hussain	123410	1981-04-01	M	216 Oak Tree, Geneva,IL	500	70000.00	30001	2
E1006	Nancy	Allen	123411	1978-06-02	F	111 Green Pl, Elgin,IL	600	90000.00	30001	2
E1007	Mary	Thomas	123412	1975-05-05	F	100 Rose Pl, Gary,IL	650	65000.00	30003	7
E1008	Bharath	Gupta	123413	1985-06-05	M	145 Berry Ln, Naperville,IL	660	65000.00	30003	7
E1009	Andrea	Jones	123414	1990-09-07	F	120 Fall Creek, Gary,IL	234	70000.00	30003	7

Exercise 2: Sorting

1.- Retrieve a list of employees ordered by department ID.

The screenshot shows the IBM Db2 on Cloud interface. On the left, there's a sidebar with 'Data objects' and 'Saved objects'. The main area displays a SQL query in a text editor:

```
1 SELECT * FROM EMPLOYEES
2 ORDER BY EMP_ID;
```

Below the query editor, the 'Results' tab is active, showing a table with 10 columns: EMP_ID, F_NAME, L_NAME, SSN, B_DATE, SEX, ADDRESS, JOB_ID, SALARY, MANAGER_ID, and DEP_ID. The table contains 10 rows of employee data, ordered by EMP_ID.

EMP_ID	F_NAME	L_NAME	SSN	B_DATE	SEX	ADDRESS	JOB_ID	SALARY	MANAGER_ID	DEP_ID
E1001	John	Thomas	123456	1976-09-01	M	5631 Rice, OakPark,IL	100	100000.00	30001	2
E1002	Alice	James	123457	1972-07-31	F	980 Berry Ln, Elgin,IL	200	80000.00	30002	5
E1003	Steve	Wells	123458	1980-10-08	M	291 Springs, Gary,IL	300	50000.00	30002	5
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E1006	Nancy	Allen	123411	1978-06-02	F	111 Green Pl, Elgin,IL	600	90000.00	30001	2
E1007	Mary	Thomas	123412	1975-05-05	F	100 Rose Pl, Gary,IL	650	65000.00	30003	7
E1008	Bharath	Gupta	123413	1985-06-05	M	145 Berry Ln, Naperville,IL	660	65000.00	30003	7
E1009	Andrea	Jones	123414	1990-09-07	F	120 Fall Creek, Gary,IL	234	70000.00	30003	7

2.- Retrieve a list of employees ordered in descending order by department ID and within each department ordered alphabetically in descending order by last name.

IBM Db2 on Cloud

Data objects Saved objects

Find objects

SQL

Find objects

Tables

Views

MQTs

Aliases

Nicknames

Untitled - 1

Untitled - 2

HR_Data... x

Syntax assistant

Run as

```
1 SELECT F_NAME, L_NAME, DEP_ID FROM EMPLOYEES
2 ORDER BY DEP_ID, L_NAME DESC;
```

History

Results

Result set 1

Details

Filter table

Total:10

F_NAME	L_NAME	DEP_ID
John	Thomas	2
Ahmed	Hussain	2
Nancy	Allen	2
Steve	Wells	5
Santosh	Kumar	5
Alice	James	5
Ann	Jacob	5
Mary	Thomas	7
Andrea	Jones	7

Exercise 3: GROUP

1.- For each department ID retrieve the number of employees in the department.

IBM Db2 on Cloud

Data objects Saved objects

Find objects

SQL

Find objects

Tables

Views

MQTs

Aliases

Nicknames

Untitled - 1

Untitled - 2

HR_Data... x

Syntax assistant

Run as

```
1 SELECT DEP_ID, COUNT(*)
2 FROM EMPLOYEES
3 GROUP BY DEP_ID;
```

History

Results

Result set 1

Details

Filter table

Total:3

DEP_ID	COUNT(*)
2	3
5	4
7	3



