Bismillahhir Rahmanir Rahim

আন্তর্জাতিক ইসলামী বিশ্ববিদ্যালয় চট্টগ্রাম

الجامعة الإسلامية العالمية شيتاغونغ

International Islamic University Chittagong

Assignment

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1. **Write a query for the HR department to produce the addresses of all the departments. Use the LOCATIONS and COUNTRIES tables. Show the location ID, street address, city, state or province, and country in the output. Use a NATURAL JOIN to produce the results.**

```
SELECT location_id, street_address, city, state_province, country_name
FROM locations
NATURAL JOIN countries;
```

LOCATION_ID	STREET_ADDRESS	CITY	STATE_PROVINCE	COUNTRY_NAME
2200	12-98 Victoria Street	Sydney	New South Wales	Australia
2800	Rua Frei Caneca 1360	Sao Paulo	Sao Paulo	Brazil
1800	147 Spadina Ave	Toronto	Ontario	Canada
1900	6092 Boxwood St	Whitehorse	Yukon	Canada
2900	20 Rue des Corps-Saints	Geneva	Geneve	Switzerland
3000	Murtenstrasse 921	Bern	BE	Switzerland
2000	40-5-12 Laogianggen	Beijing	-	China
2700	Schwanthalerstr. 7031	Munich	Bavaria	Germany
2100	1298 Vileparle (E)	Bombay	Maharashtra	India
1000	1297 Via Cola di Rie	Roma	-	Italy
1100	93091 Calle della Testa	Venice	-	Italy
1200	2017 Shinjuku-ku	Tokyo	Tokyo Prefecture	Japan
1300	9450 Kamiya-cho	Hiroshima	-	Japan
3200	Mariano Escobedo 9991	Mexico City	Distrito Federal,	Mexico
3100	Pieter Breughelstraat 837	Utrecht	Utrecht	Netherlands
2300	198 Clementi North	Singapore	-	Singapore
2400	8204 Arthur St	London	-	United Kingdom
2500	Magdalen Centre, The Oxford Science Park	Oxford	Oxford	United Kingdom
2600	9702 Chester Road	Stretford	Manchester	United Kingdom
1400	2014 Jabberwocky Rd	Southlake	Texas	United States of America
1500	2011 Interiors Blvd	South San Francisco	California	United States of America
1600	2007 Zagora St	South Brunswick	New Jersey	United States of America
1700	2004 Charade Rd	Seattle	Washington	United States of America

23 rows returned

2. **The HR department needs a report of all employees. Write a query to display the last name, department number, and department name for all employees.**

```
SELECT last_name, department_id, department_name
FROM employees
JOIN departments
USING (department_id);
```

LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
King	90	Executive
Kochhar	90	Executive
De Haan	90	Executive
Hunold	60	IT
Ernst	60	IT
Austin	60	IT
Pataballa	60	IT
Lorentz	60	IT
Greenberg	100	Finance
Faviet	100	Finance
Hartstein	20	Marketing
Fay	20	Marketing
Mavris	40	Human Resources
Baer	70	Public Relations
Higgins	110	Accounting
Gietz	110	Accounting

106 rows returned

3. **The HR department needs a report of employees in Toronto. Display the last name, job, department number, and department name for all employees who work in Toronto.**

```
SELECT e.last_name, e.job_id, e.department_id, d.department_name
FROM employees e JOIN departments d
ON (e.department_id = d.department_id)
JOIN locations l
ON (d.location_id = l.location_id)
WHERE LOWER(l.city) = 'toronto';
```

LAST_NAME	JOB_ID	DEPARTMENT_ID	DEPARTMENT_NAME
Hartstein	MK_MAN	20	Marketing
Fay	MK_REP	20	Marketing

2 rows returned

4. **Create a report to display employees' last name and employee number along with their manager's last name and manager number. Label the columns Employee, Emp#, Manager, and Mgr#, respectively. Place your SQL statement in a text file named lab_05_04.sql.**

```
SELECT w.last_name "Employee", w.employee_id "EMP#",
m.last_name "Manager", m.employee_id "Mgr#"
FROM employees w join employees m
ON (w.manager_id = m.employee_id);
```

Employee	EMP#	Manager	Mgr#
Kochhar	101	King	100
De Haan	102	King	100
Hunold	103	De Haan	102
Ernst	104	Hunold	103
Austin	105	Hunold	103
Pataballa	106	Hunold	103
Lorentz	107	Hunold	103

106 rows returned

5. Modify lab_05_04.sql to display all employees including King, who has no manager. Order the results by the employee number. Place your SQL statement in a text file named lab_05_05.sql. Run the query in lab_05_05.sql.

```
SELECT w.last_name "Employee", w.employee_id "EMP#",
m.last_name "Manager", m.employee_id "Mgr#"
FROM employees w
LEFT OUTER JOIN employees m
ON (w.manager_id = m.employee_id);
```

Employee	EMP#	Manager	Mgr#
King	100	-	-
Kochhar	101	King	100
De Haan	102	King	100
Hunold	103	De Haan	102
Ernst	104	Hunold	103
Austin	105	Hunold	103
Pataballa	106	Hunold	103

107 rows returned

6. Create a report for the HR department that displays employee last names, department numbers, and all the employees who work in the same department as a given employee. Give each column an appropriate label. Save the script to a file named lab_05_06.sql.

```
SELECT e.department_id department, e.last_name employee,
c.last_name colleague

FROM employees e JOIN employees c
ON (e.department_id = c.department_id)
WHERE e.employee_id <> c.employee_id
ORDER BY e.department_id, e.last_name, c.last_name;
```

DEPARTMENT	EMPLOYEE	COLLEAGUE
20	Fay	Hartstein
20	Hartstein	Fay
30	Baida	Colmenares
30	Baida	Himuro
30	Baida	Khoo
30	Baida	Raphaely
30	Baida	Tobias
30	Colmenares	Baida
30	Colmenares	Himuro
30	Colmenares	Khoo
30	Colmenares	Raphaely
30	Colmenares	Tobias
30	Himuro	Baida
30	Himuro	Colmenares
30	Himuro	Khoo
30	Himuro	Raphaely
30	Himuro	Tobias
30	Khoo	Baida

3192 rows returned

7. **The HR department needs a report on job grades and salaries. To familiarize yourself with the JOB_GRADES table, first show the structure of the JOB_GRADES table. Then create a query that displays the name, job, department name, salary, and grade for all employees.**

```
SELECT e.last_name AS Name, e.job_id, d.department_name, e.salary, j.grade_level
FROM employees e JOIN departments d
ON (e.department_id = d.department_id)
JOIN job_grades j
ON (e.salary BETWEEN j.lowest_sal AND j.highest_sal);
```

8. **The HR department wants to determine the names of all employees who were hired after Davies. Create a query to display the name and hire date of any employee hired after employee Davies.**

```
SELECT e.last_name, e.hire_date
FROM employees e JOIN employees davies
ON (davies.last_name = 'Davies')
WHERE davies.hire_date < e.hire_date;
```

LAST_NAME	HIRE_DATE
Austin	25-JUN-97

Pataballa	05-FEB-98
Lorentz	07-FEB-99
Chen	28-SEP-97
Sciarra	30-SEP-97
Urman	07-MAR-98
Popp	07-DEC-99
Baida	24-DEC-97

78 rows returned

9. **The HR department needs to find the names and hire dates for all employees who were hired before their managers, along with their managers' names and hire dates. Save the script to a file named lab_05_09.sql**.

```
SELECT w.last_name, w.hire_date, m.last_name, m.hire_date
FROM employees w JOIN employees m
ON (w.manager_id = m.employee_id)
WHERE w.hire_date < m.hire_date;
```

LAST_NAME	HIRE_DATE	LAST_NAME	HIRE_DATE
Hunold	03-JAN-90	De Haan	13-JAN-93
Faviet	16-AUG-94	Greenberg	17-AUG-94
Marlow	16-FEB-97	Fripp	10-APR-97
Ladwig	14-JUL-95	Vollman	10-OCT-97
Rajs	17-OCT-95	Mourgos	16-NOV-99
Davies	29-JAN-97	Mourgos	16-NOV-99
Matos	15-MAR-98	Mourgos	16-NOV-99
Vargas	09-JUL-98	Mourgos	16-NOV-99

30 rows returned

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