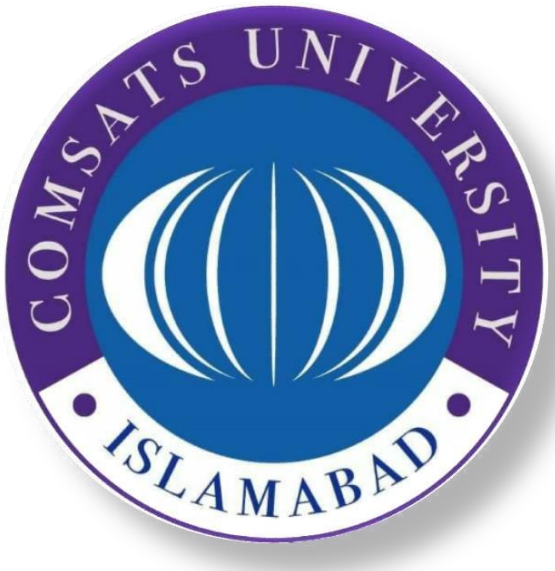

DBMS - 1

LAB REPORT 2

SUBMITTED BY:
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SUBMITTED TO:
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Q1: Write SQL statements for the following information needs:

i. **Find the highest, lowest, sum, and average salary of all employees. Label the columns as Maximum, Minimum, Sum, and Average, respectively. Round your results to the nearest whole number.**

```
SELECT MAX(salary),MIN(salary),SUM(salary), round(AVG(salary))
FROM employees;
```

	MAX(SALARY)	MIN(SALARY)	SUM(SALARY)	ROUND(AVG(SALARY))
1	24000	2100	691416	6462

ii. **Write a query to display the number of people with the same job.**

```
SELECT COUNT(*) people, job_id
FROM employees
GROUP BY job_id
```

	PEOPLE	JOB_ID
1	1	AC_ACCOUNT
2	1	AC_MGR
3	1	AD_ASST
4	1	AD_PRES
5	2	AD_VP
6	5	FI_ACCOUNT
7	1	FI_MGR
8	1	HR_REP
9	5	IT_PROG
10	1	MK_MAN

iii. **Determine the number of managers without listing them. Label the column as Number of Managers.**

```
SELECT COUNT(DISTINCT manager_id) AS "Number of Managers"
FROM employees;
```

	Number of Managers
1	18

iv. Find the difference between the highest and lowest salaries. Label the column DIFFERENCE.

```
SELECT MAX(salary)-MIN(salary) AS difference
FROM employees;
```

	DIFFERENCE
1	21900

v. Create a report to display the manager number and the salary of the lowest-paid employee for that manager. Exclude anyone whose manager is not known. Exclude any groups where the minimum salary is $6,000 or less. Sort the output in descending order of salary.

```
SELECT manager_id , MIN(salary)
FROM employees
WHERE manager_id IS NOT NULL
GROUP BY manager_id
HAVING MIN(salary) > 6000
ORDER BY MIN(salary) DESC;
```

	MANAGER_ID	MIN(SALARY)
1	102	9000
2	205	8300
3	145	7000
4	146	7000
5	108	6900
6	147	6200
7	149	6200
8	148	6100

vi. Create a query to display the job, the salary for that job based on department number, and the total salary for that job, for departments 20, 50, 80, and 90, giving each column an appropriate heading

```
SELECT department_id AS "Deparment Number",  job_id AS "Job", sum(salary) AS "Total Salary"
FROM employees
WHERE department_id IN (20,50,80,90)
GROUP BY department_id,job_id;
```

	Deparment Number	Job	Total Salary
1	90	AD_PRES	24000
2	90	AD_VP	34000
3	50	ST_MAN	36400
4	50	ST_CLERK	55700
5	80	SA_MAN	61000
6	80	SA_REP	243500
7	50	SH_CLERK	64300
8	20	MK_MAN	13000
9	20	MK_REP	6000

Q2: Write SQL statements for the following information needs:

i. The HR department needs a report to display the employee number, last name, salary, and salary increased by 15.5% (expressed as a whole number) for each employee. Label the column New Salary

```
SELECT employee_id, last_name, salary, trunc(((salary/100)*15.5) + salary) AS "New Salary"
FROM employees;
```

	EMPLOYEE_ID	LAST_NAME	SALARY	New Salary
1	100	King	24000	27720
2	101	Kochhar	17000	19635
3	102	De Haan	17000	19635
4	103	Hunold	9000	10395
5	104	Ernst	6000	6930
6	105	Austin	4800	5544
7	106	Pataballa	4800	5544
8	107	Lorentz	4200	4851
9	108	Greenberg	12008	13869
10	109	Faviet	9000	10395
11	110	Chen	8200	9471
12	111	Sciarra	7700	8893
13	112	Urman	7800	9009
14	113	Popp	6900	7969
15	114	Raphaely	11000	12705
16	115	Khoo	3100	3580
17	116	Baida	2900	3349

ii. **2- Write a query that displays the last name (with the first letter in uppercase and all the other letters in lowercase) and the length of the last name for all employees whose name starts with the letters "J", "A", or "M". Give each column an appropriate label. Sort the results by the employees 'last names. Rewrite the query so that the user is prompted to enter a letter that the last name starts with. For example, if the user enters —H‖ (capitalized) when prompted for a letter, then the output should show all employees whose last name starts with the letter —H.**

```
SELECT INITCAP(last_name) "Name" , LENGTH(last_name) "Length"
FROM employees
WHERE last_name LIKE 'J%' OR last_name LIKE 'A%' OR last_name LIKE 'M%'
ORDER BY 1;
```

	Name	Length
1	Abel	4
2	Ande	4
3	Atkinson	8
4	Austin	6
5	Johnson	7
6	Jones	5
7	Mallin	6
8	Markle	6
9	Marlow	6
10	Marvins	7
11	Matos	5
12	Mavris	6
13	Mccain	6
14	Mcewen	6
15	Mikkilineni	11
16	Mourgos	7

```
SELECT INITCAP(last_name) "Name" , LENGTH(last_name) "Length"
FROM employees
WHERE last_name LIKE '&LETTER%'
ORDER BY 1;
```

	Name	Length
1	Hall	4
2	Hartstein	9
3	Higgins	7
4	Himuro	6
5	Hunold	6
6	Hutton	6

iii. **3- The HR department wants to find the duration of employment for each employee. For each employee, display the last name and calculate the number of months between today and the date on which the employee was hired. Label the column as MONTHS_WORKED. Order your results by the number of months employed. Round the number of months up to the closest whole number.**

```
SELECT last_name, round(MONTHS_BETWEEN(SYSDATE,hire_date)) AS months_worked
FROM employees
ORDER BY 2;
```

	LAST_NAME	MONTHS_WORKED
1	Banda	174
2	Kumar	174
3	Ande	175
4	Markle	175
5	Zlotkey	176
6	Geoni	176
7	Philtanker	176
8	Lee	176
9	Johnson	177
10	Grant	177
11	Marvins	177
12	Gee	178
13	Popp	178
14	Perkins	178
15	Mourgos	179
16	Tuvault	179
17	Cambrault	180

iv. **4- Create a query that displays the employee's last names and commission amounts. If an employee does not earn commission, show —No Commission. Label the column COMM**

```
SELECT last_name, commission_pct, NVL2(commission_pct,'Has Commission','No Commission') AS COMM
FROM employees;
```

	LAST_N...	COMMISSION_PCT	COMM
1	King	(null)	No Commission
2	Kochhar	(null)	No Commission
3	De Haan	(null)	No Commission
4	Hunold	(null)	No Commission
5	Ernst	(null)	No Commission
6	Austin	(null)	No Commission
7	Pataballa	(null)	No Commission
8	Lorentz	(null)	No Commission
9	Greenberg	(null)	No Commission
10	Faviet	(null)	No Commission
11	Chen	(null)	No Commission
12	Sciarra	(null)	No Commission
13	Urman	(null)	No Commission
14	Popp	(null)	No Commission
15	Raphaely	(null)	No Commission
16	Khoo	(null)	No Commission
17	Baida	(null)	No Commission

v. **5- The HR department needs a list of countries that have no departments located in them. Display the country ID and the name of the countries. Use the set operators to create this report.**

```
SELECT country_id,country_name
FROM countries
MINUS
SELECT l.country_id,c.country_name
FROM locations l JOIN countries c
ON (l.country_id = c.country_id)
JOIN departments d
ON d.location_id=l.location_id;
```

	COUNTRY_ID	COUNTRY_NAME
1	AR	Argentina
2	AU	Australia
3	BE	Belgium
4	BR	Brazil
5	CH	Switzerland
6	CN	China
7	DK	Denmark
8	EG	Egypt
9	FR	France
10	IL	Israel
11	IN	India
12	IT	Italy
13	JP	Japan
14	KW	Kuwait
15	ML	Malaysia

vi. The HR department needs a report with the following specifications:

- **Last name and department ID of all employees from the EMPLOYEES table, regardless of whether or not they belong to a department**
- **Department ID and department name of all departments from the DEPARTMENTS table, regardless of whether or not they have employees working in them.**

```
SELECT last_name,employees.department_id,departments.department_id,department_name
FROM employees,departments;
```

	LAST_NAME	DEPARTMENT_ID	DEPARTMENT_ID_1	DEPARTMENT_NAME
1	King	90	10	Administration
2	Kochhar	90	10	Administration
3	De Haan	90	10	Administration
4	Hunold	60	10	Administration
5	Ernst	60	10	Administration
6	Austin	60	10	Administration
7	Pataballa	60	10	Administration
8	Lorentz	60	10	Administration
9	Greenberg	100	10	Administration
10	Faviet	100	10	Administration
11	Chen	100	10	Administration
12	Sciarra	100	10	Administration
13	Urman	100	10	Administration
14	Popp	100	10	Administration
15	Raphaely	30	10	Administration
16	Khoo	30	10	Administration
17	Baida	30	10	Administration

Q3: Write SQL statements for the following information needs:

i. **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
1	1000	1297 Via Cola di Rie	Roma	(null)	Italy
2	1100	93091 Calle della Testa	Venice	(null)	Italy
3	1200	2017 Shinjuku-ku	Tokyo	Tokyo Prefecture	Japan
4	1300	9450 Kamiya-cho	Hiroshima	(null)	Japan
5	1400	2014 Jabberwocky Rd	Southlake	Texas	United States of America
6	1500	2011 Interiors Blvd	South San Francisco	California	United States of America
7	1600	2007 Zagora St	South Brunswick	New Jersey	United States of America
8	1700	2004 Charade Rd	Seattle	Washington	United States of America
9	1800	147 Spadina Ave	Toronto	Ontario	Canada
10	1900	6092 Boxwood St	Whitehorse	Yukon	Canada
11	2000	40-5-12 Laogianggen	Beijing	(null)	China
12	2100	1298 Vileparle (E)	Bombay	Maharashtra	India

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

```
SELECT last_name , e.department_id, department_name
FROM employees e JOIN departments d
ON (e.department_id = d.department_id);
```

	LAST_N...	DEPARTMENT_ID	DEPARTMENT_NAME
1	Whalen	10	Administration
2	Fay	20	Marketing
3	Hartstein	20	Marketing
4	Tobias	30	Purchasing
5	Colmenares	30	Purchasing
6	Baida	30	Purchasing
7	Raphaely	30	Purchasing
8	Khoo	30	Purchasing
9	Himuro	30	Purchasing
10	Mavris	40	Human Resources
11	Feeney	50	Shipping

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

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

	LAST_NAME	JOB_ID	DEPARTMENT_ID	DEPARTMENT_NAME	CITY
1	Hartstein	MK_MAN	20	Marketing	Toronto
2	Fay	MK_REP	20	Marketing	Toronto