# Labsheet Topic 5 – GROUP BY, HAVING

# Answers

# Completion Problems

### Q1. List the job titles, the maximum salary available for that job and the maximum an employee in that job is actually earning.

SELECT job\_title, max\_salary AS "Max Possible", MAX(salary) AS "Max Actually"   
FROM employees   
INNER JOIN jobs USING (job\_id)   
GROUP BY job\_title, max\_salary;

### Q2. List the names of the departments and the countries they are in. Include all countries, even if no departments are based in them yet.

SELECT department\_name, country\_name   
FROM departments   
INNER JOIN locations USING (location\_id)   
RIGHT JOIN countries USING (country\_id);

### Q3. List the total wages paid out to employees in each country.

SELECT country\_name, SUM(salary) AS ‘total wages’   
FROM employees   
INNER JOIN departments USING(department\_id)   
INNER JOIN locations USING (location\_id)   
INNER JOIN countries USING (country\_id)   
GROUP BY country\_name;

### Q4. List the total wages paid out to employees in each country where the total paid out is more than 20,000.

SELECT country\_name, SUM(salary) AS ‘total wages’   
FROM employees   
INNER JOIN departments USING(department\_id)   
INNER JOIN locations USING (location\_id)   
INNER JOIN countries USING (country\_id)   
GROUP BY country\_name   
HAVING SUM(salary) > 20000;

### Q5. Find the average salary of all employees and the standard deviation.

SELECT ROUND(AVG(salary),2) AS "Average Salary",   
 ROUND(STDDEV(salary),2) AS "Standard Deviation"   
FROM employees;

### Q6. Find the average salary and standard deviation for each job type.

SELECT job\_title, AVG(salary) AS ‘average salary’,   
 STDDEV(salary) AS ‘standard deviation’   
FROM employees   
INNER JOIN jobs USING (job\_id)   
GROUP BY job\_title;

### Q7. List all employees hired during June in any year.

SELECT first\_name, last\_name, hire\_date   
FROM employees   
WHERE hire\_date LIKE ‘%JU%’;

### Q8. List the number of departments in each city from smallest to largest.

SELECT COUNT(\*) AS "Number of Departments", city   
FROM departments   
INNER JOIN locations USING (location\_id)   
GROUP BY city   
ORDER BY COUNT(\*);

### Q9. List all the employees and their commission percentage, using ‘N/A’ for those not earning commission.

SELECT first\_name, last\_name, REPLACE(NVL(commission\_pct,’-1’),’-1’,’N/A’) AS “Commission Percentage”  
FROM employees;

# Deliberate Practice: Write the SQL

### Q1. List the average salary for each job in each department

SELECT department\_name, ROUND(AVG(salary),2) AS “Average Salary”

FROM employees

INNER JOIN departments

USING (department\_id)

GROUP BY department\_name;

### Q2. List the three lowest paid jobs, on average, in the company

SELECT job\_title, AVG(salary) AS ‘average salary’

FROM employees

INNER JOIN jobs USING (job\_id)

GROUP BY job\_title

ORDER BY AVG(salary) ASC

FETCH FIRST 3 ROWS ONLY;

### Q3. What is the average salary in the IT departments?

SELECT AVG(salary) AS “average salary”

FROM employees

INNER JOIN departments USING (department\_id)

WHERE department\_name = ‘IT’;

### Q4. List the number of people in each department

SELECT job\_title, COUNT(\*) AS ‘Number’

FROM employees

INNER JOIN jobs USING(job\_id)

GROUP BY job\_title;

### Q5. Give the wording that will need to be put on the President’s business card: his name, position, full address (including country name), telephone number and email address.

SELECT first\_name, last\_name, job\_title, street\_address,

postal\_code, city, country\_name, phone\_number, email

FROM employees

INNER JOIN jobs USING (job\_id)

INNER JOIN departments USING (department\_id)

INNER JOIN locations USING (location\_id)

INNER JOIN countries USING (country\_id)

WHERE job\_title = ‘President’;

### Q6. List the departments where the total salaries (excluding bonuses) per year are more than 250,000.

SELECT department\_name, SUM(salary\*12) AS “total pay”

FROM employees

INNER JOIN departments USING (department\_id)

GROUP BY department\_name

HAVING SUM(salary\*12) > 250000;

### Q7. List the departments where the total salaries (including bonuses) per year are LESS than 250,000.

SELECT department\_name,

SUM(salary\*12) + SUM(nvl(bonus,0)) AS "total pay"

FROM employees

INNER JOIN departments USING (department\_id)

GROUP BY department\_name

HAVING SUM(salary\*12) + SUM(nvl(bonus,0)) < 250000;

### Q8. Give the name of the department with the largest disparity in salaries.

SELECT department\_name, MAX(salary) – MIN(salary) AS Disparity

FROM employees

INNER JOIN departments USING (department\_id)

GROUP BY department\_name

ORDER BY MAX(salary) – MIN(salary) DESC

FETCH FIRST 1 ROWS ONLY;

### Q9. List the departments and the names of their managers, with the names combined into a single column called “Manager”. If a department does not have a manager, the name should read “NO MANAGER” instead.

SELECT d.department\_id, department\_name,

nvl(first\_name,'NO') || ' ' || nvl(last\_name,'MANAGER') AS

Manager

FROM departments d

LEFT JOIN employees e

ON d.manager\_id = e.employee\_id;