**SQL Exercises – ITC**

**Q1 - How many unique employees are there?**

1. SELECT DISTINCT count(emp\_no) as count

FROM employees =>

Count => 300.024

**Q2 - How many males and females employees are there? Order the counts in descending order.**

1. SELECT gender, count(gender)

FROM employees

GROUP BY gender

ORDER BY gender desc

F => 120.051

M => 179.973

**Q3 - Display the year and total hires for the year with the most hires**

3. SELECT year(hire\_date) as year, count(hire\_date) as total\_hires

FROM employees

GROUP BY year

ORDER BY total\_hires DESC

LIMIT 1

year => 1986

total\_hires => 36.150

**Q4 - What is the name of the department with the most employees**

4. SELECT ds.dept\_name AS dept\_name, count(de.emp\_no) AS total\_employees

FROM dept\_emp de

JOIN departments as ds

ON ds.dept\_no = de.dept\_no

GROUP BY dept\_name

ORDER BY total\_employees desc

LIMIT 1

Development => 85.707

**Q5 - How many employees were born on November 12? What's the percentage out of all the employees?**

5. SELECT count(emp\_no) as count\_employees,

(count(emp\_no) / (SELECT count(emp\_no) from employees)) \* 100 as perc

FROM employees

WHERE month(birth\_date) = '11' and day(birth\_date) = '12'

Count\_employees => 800

Perc => 0.2666%

**Q6 - What are the 3 most common employee titles (display the employee titles and the number of times they occur)**

6. SELECT t.title, count(t.title) AS title\_count

FROM titles as t

JOIN employees as e

ON t.emp\_no = e.emp\_no

GROUP BY t.title

ORDER BY title\_count desc

|  |  |
| --- | --- |
| Title | Count |
| Engineer | 115.003 |
| Staff | 107.391 |
| Senior Engineer | 97.750 |

LIMIT 3

**Q7 - Find the avg salary for each department (department name). Round to the nearest integer and order by avg salary from the highest to the lowest.**

7. SELECT ds.dept\_name AS dept\_name, round(avg(s.salary)) AS avg\_salary

FROM salaries as s

JOIN employees as e

ON e.emp\_no = s.emp\_no

JOIN dept\_emp as de

ON de.emp\_no = e.emp\_no

JOIN departments as ds

ON ds.dept\_no = de.dept\_no

GROUP BY ds.dept\_name

ORDER BY avg\_salary desc

|  |  |
| --- | --- |
| DEPT\_NAME | AVG\_SALARY |
| Sales | 80.668 |
| Marketing | 71.913 |
| Finance | 70.489 |
| Research | 59.665 |
| Production | 59.605 |
| Development | 59.479 |
| Customer Service | 58.770 |
| Quality Management | 57.251 |
| Human Resources | 55.575 |

**Q8 - Find the average salary by employee title. Round to 2 decimals and order by descending order**

8. SELECT t.title, round(avg(s.salary),2) AS avg\_title

FROM salaries AS s

JOIN titles AS t

ON s.emp\_no = t.emp\_no

GROUP BY t.title

ORDER BY avg\_title DESC

|  |  |
| --- | --- |
| Title | Avg\_Title |
| Senior Staff | 70470.84 |
| Staff | 69309.10 |
| Manager | 66924.27 |
| Senior Engineer | 60543.22 |
| Engineer | 59508.04 |
| Assistant Engineer | 59304.99 |
| Technique Leader | 59294.37 |

**Q9 - Find the number of employees who have worked in at least 2 departments**

9- SELECT count(emp\_no)

FROM (

SELECT emp\_no

FROM dept\_emp

GROUP BY emp\_no

HAVING count(dept\_no) >=2

) as t

count\_employees => 31.579

**Q10 - Get the distribution of the year of the hire dates. (hint: you should end up with a number of employees per year of hiring date)**

**Do you notice any pattern? Assuming there is no missing data, is the company hiring more or less as time goes by?**

10 - SELECT year(hire\_date) year, count(emp\_no) as count\_employees

FROM employees

GROUP BY year

ORDER BY year asc

|  |  |
| --- | --- |
| year | Count\_employees |
| 1985 | 35316 |
| 1986 | 36150 |
| 1987 | 33501 |
| 1988 | 31436 |
| 1989 | 28394 |
| 1990 | 25610 |
| 1991 | 22568 |
| 1992 | 20402 |
| 1993 | 17772 |
| 1994 | 14835 |
| 1995 | 12115 |
| 1996 | 9574 |
| 1997 | 6669 |
| 1998 | 4155 |
| 1999 | 1514 |
| 2000 | 13 |

They are hiring less every year

**Q11 - Display the first name, last name, and salary of the highest paid employee**

11 - SELECT e.first\_name, e.last\_name, s.salary

FROM employees as e

JOIN salaries as s

ON s.emp\_no = e.emp\_no

WHERE year(s.to\_date) = '9999'

ORDER BY s.salary desc

LIMIT 1

first\_name, last\_name, salary

Tokuyasu, Pesch, 158220

**Q12 - Display the first name, last name, and salary of the THIRD highest paid employee**

12- SELECT e.first\_name, e.last\_name, s.salary

FROM employees as e

JOIN salaries as s

ON s.emp\_no = e.emp\_no

WHERE year(s.to\_date) = '9999'

ORDER BY s.salary desc

LIMIT 2,1

first\_name, last\_name, salary

Xiahua, Whitcomb, 155709

Note:

1. it will be more convenient if we use the actual year. So the condition for filter is WHERE year(s.to\_date) = '9999' because if we don’t add this filter, the two first highest employees are the same: Tokuyasu

**Q13 - Display each department name and the age of the youngest employee at hire date**

13- SELECT ds.dept\_name,

floor(datediff(current\_date(),max(e.hire\_date)) / 365.25) as age\_hired

FROM employees as e

JOIN dept\_emp as de

ON de.emp\_no = e.emp\_no

JOIN departments as ds

ON ds.dept\_no = de.dept\_no

GROUP BY dept\_name

|  |  |
| --- | --- |
| Dept\_name | Age\_hired |
| Customer Service | 21 |
| Development | 21 |
| Finance | 21 |
| Human Resources | 21 |
| Marketing | 21 |
| Production | 21 |
| Quality Management | 21 |
| Research | 21 |
| Sales | 21 |

**Q14 - What's the range of age the employees would be today (calculate their age whole years)**

14 - SELECT min(floor(datediff(current\_date(),birth\_date) / 365.25)) as age\_min,

max(floor(datediff(current\_date(),birth\_date) / 365.25)) as age\_max

FROM employees

age\_min age\_max

56 69

**Q15 - How many employees were born on the same date (day-month-year) as those born in 1955.**

15 - SELECT sum(same\_date) as total\_employees\_same\_birthday

FROM (

SELECT birth\_date, count(birth\_date) as same\_date

FROM employees

WHERE year(birth\_date) = '1955'

GROUP BY birth\_date)

as new\_table

total\_employees => 23.104