

## SQL part 7. CTE. Top-N queries.

1. Find employees who earn more than average salary for their jobs. Use CTE to define a structure to hold an average salary for each job.

surname	job	salary	avg_sal_for_job
Lewis	ASSISTANT	1971.00	1887.43
White	LECTURER	2845.50	2727.85
Wilson	PROFESSOR	3960.00	3402.50
Young	ASSISTANT	1889.00	1887.43

2. Find the department with the maximal sum of its employees' salaries. Use CTE to define a structure to hold a sum of salaries for each department.

dept_name	sum_of_sal
DISTRIBUTED SYSTEMS	17325.20

3. Find employees who earn at least 60% of their bosses salaries. Use CTE to define a structure to hold bosses' surnames and salaries.

surname	salary	boss_name	boss_salary
Bell	1850.00	Williams	3070.00
Johnson	3230.00	Wilson	3960.00
Jones	3350.00	Smith	4730.00
Lewis	1971.00	Johnson	3230.00
White	2845.50	Wilson	3960.00
Williams	3070.00	Smith	4730.00
Wilson	3960.00	Smith	4730.00

4. Find employee with the longest work history. Use FETCH clause.

surname	hire_date
Smith	1968-01-01

5. Use previous query as CTE and for each employee find a number of days between his or her hire date and hire date of employee with the longest work history. Sort the result according to number of days. (to combine a row with information about longest working employee with rows of other employees you may use Cartesian product).

surname	num_of_days
Smith	0
Wilson	182
Jones	1947
Johnson	2814
White	3531
Williams	3531
Clark	6260
Edwards	6269
Bell	9010
Green	9040
Lewis	9375
Young	9405
Jackson	9419
Wood	9692

6. For each employee show how many thousands ("grand") employee earns.

Sentence

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Bell earns two grand
Clark earns three grand
Edwards earns two grand
Green earns two grand
Jackson earns one grand
Johnson earns three grand
Jones earns three grand
Lewis earns two grand
Smith earns five grand
White earns three grand
Williams earns three grand
Wilson earns four grand
Wood earns one grand
Young earns two grand
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7. Build a query which will display employees hierarchy. For each employee display his/her name, surname and path, which shows an employee position in employees hierarchy. Put employee Smith on the top of hierarchy.

EMPLOYEE	HIERARCHY
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John Smith	John Smith
Andrew Williams	John Smith -> Andrew Williams
Tom Bell	John Smith -> Andrew Williams -> Tom Bell
Carl Jones	John Smith -> Carl Jones
Wayne Young	John Smith -> Carl Jones -> Wayne Young
Mark Clark	John Smith -> Mark Clark
Peter Wilson	John Smith -> Peter Wilson
Ana Edwards	John Smith -> Peter Wilson -> Ana Edwards
Chris Johnson	John Smith -> Peter Wilson -> Chris Johnson
Adam Wood	John Smith -> Peter Wilson -> Chris Johnson -> Adam Wood
Arnold Lewis	John Smith -> Peter Wilson -> Chris Johnson -> Arnold Lewis
Ian Green	John Smith -> Peter Wilson -> Ian Green
Mary White	John Smith -> Peter Wilson -> Mary White
Peter Jackson	John Smith -> Peter Wilson -> Peter Jackson