

Homework: SQL Introduction

This document defines the homework assignments from the ["Databases" Course @ Software University](#). Please submit as homework a single **zip / rar / 7z** archive holding the solutions (source code) of all below described problems.

Problem 1. What is SQL? What is DML? What is DDL? Recite the most important SQL commands.

Perform a research (e.g. in Google or Wikipedia) and provide an information about SQL, data manipulation language, data definition language and the most important SQL commands.

You should submit a text file called **"sql-intro.txt"** as a part of your homework.

Problem 2. What is Transact-SQL (T-SQL)?

Perform a research (e.g. in Google or Wikipedia) and provide an information about Transact-SQL.

You should submit a text file called **"t-sql.txt"** as a part of your homework.

Problem 3. Start SQL Management Studio and connect to the database SoftUni. Examine the major tables in the "SoftUni" database.

Your task is to examine the tables in the "SoftUni" database.

You do not have to submit anything in your homework for this problem.

Problem 4. Write a SQL query to find all information about all departments (use "SoftUni" database).

You should submit a SQL file as a part of your homework.

Problem 5. Write a SQL query to find all department names.

You should submit a SQL file as a part of your homework.

Problem 6. Write a SQL query to find the salary of each employee.

You should submit a SQL file as a part of your homework.

Problem 7. Write a SQL to find the full name of each employee.

You should submit a SQL file as a part of your homework.

Problem 8. Write a SQL query to find the email addresses of each employee.

Write a SQL query to find the email addresses of each employee. (by his first and last name). Consider that the mail domain is softuni.bg. Emails should look like "John.Doe@softuni.bg". The produced column should be named "Full Email Addresses".

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Problem 9. Write a SQL query to find all different employee salaries.

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Problem 10. Write a SQL query to find all information about the employees whose job title is "Sales Representative".

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Problem 11. Write a SQL query to find the names of all employees whose first name starts with "SA".

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Problem 12. Write a SQL query to find the names of all employees whose last name contains "ei".

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Problem 13. Write a SQL query to find the salary of all employees whose salary is in the range [20000...30000].

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Problem 14. Write a SQL query to find the names of all employees whose salary is 25000, 14000, 12500 or 23600.

You should submit a SQL file as a part of your homework.

Problem 15. Write a SQL query to find all employees that do not have manager.

You should submit a SQL file as a part of your homework.

Problem 16. Write a SQL query to find all employees that have salary more than 50000. Order them in decreasing order by salary.

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Problem 17. Write a SQL query to find the top 5 best paid employees.

You should submit a SQL file as a part of your homework.

Problem 18. Write a SQL query to find all employees along with their address.

Use inner join with ON clause.

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Problem 19. Write a SQL query to find all employees and their address.

Use equijoins (conditions in the WHERE clause).

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Problem 20. Write a SQL query to find all employees along with their manager.

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Problem 21. Write a SQL query to find all employees, along with their manager and their address.

You should join the 3 tables: Employees e, Employees m and Addresses a.

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Problem 22. Write a SQL query to find all departments and all town names as a single list.

Use UNION.

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Problem 23. Write a SQL query to find all the employees and the manager for each of them along with the employees that do not have manager.

Use right outer join. Rewrite the query to use left outer join.

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Problem 24. Write a SQL query to find the names of all employees from the departments "Sales" and "Finance" whose hire year is between 1995 and 2005.

You should submit a SQL file as a part of your homework.