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

SQL: Structured Query Language – Declarative language for query and manipulation of relational data.

DML: Data Manipulation Language – SELECT, INSERT, UPDATE, DELETE

DLL: Data Definition Language – CREATE, DROP, ALTER, GRANT, REVOKE

1. **What is Transact-SQL (T-SQL)?**

T-SQL: is an extension to the standard SQL language. Supports **if** statement, **loops, exceptions** etc. T-SQL is used for writing stored procedures, functions, triggers, etc.

1. **Start SQL Management Studio and connect to the database TelerikAcademy. Examine the major tables in the "TelerikAcademy" database.**

N/a

1. **Write a SQL query to find all information about all departments (use "TelerikAcademy" database).**

SELECT \*

FROM [TelerikAcademy].[dbo].[Departments]

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

SELECT Name

FROM [TelerikAcademy].[dbo].[Departments]

1. **Write a SQL query to find the salary of each employee.**

SELECT FirstName, LastName, Salary

FROM [TelerikAcademy].[dbo].[Employees]

1. **Write a SQL to find the full name of each employee.**

SELECT FirstName + ' ' + LastName AS FullName

FROM [TelerikAcademy].[dbo].[Employees]

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

SELECT FirstName + '.' + LastName + '@telerik.com' AS FullEmailAddress

FROM [TelerikAcademy].[dbo].Employees

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

SELECT DISTINCT Salary

FROM [TelerikAcademy].[dbo].Employees

1. **Write a SQL query to find all information about the employees whose job title is “Sales Representative“**

SELECT e.EmployeeID, e.FirstName, e.LastName, e.MiddleName, e.JobTitle, d.Name AS Department, e.ManagerID, e.HireDate, e.Salary, a.AddressText AS AddressName

FROM [TelerikAcademy].[dbo].Employees e

INNER JOIN [TelerikAcademy].[dbo].Departments d

ON e.DepartmentID = d.DepartmentID

INNER JOIN [TelerikAcademy].[dbo].Addresses a

ON e.AddressID = a.AddressID

WHERE e.JobTitle = 'Sales Representative'

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

SELECT FirstName FROM TelerikAcademy.dbo.Employees

WHERE FirstName LIKE 'SA%'

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

SELECT FirstName + ' ' + LastName

FROM [TelerikAcademy].[dbo].Employees

WHERE CHARINDEX('ei', LastName) > 0

--WHERE LastName LIKE '%ei%'

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

SELECT FirstName + ' ' + LastName, Salary

FROM [TelerikAcademy].[dbo].Employees

WHERE Salary >= 20000 AND Salary <= 30000

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

SELECT FirstName + ' ' + LastName AS FullName, Salary

FROM [TelerikAcademy].[dbo].Employees

WHERE Salary = 25000 OR Salary = 14000 OR Salary = 12500 OR Salary = 23600

ORDER BY Salary DESC

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

SELECT FirstName + ' ' + LastName AS FullName, ManagerID

FROM [TelerikAcademy].[dbo].Employees

WHERE ManagerID IS NULL

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

SELECT FirstName + ' ' + LastName AS FullName, Salary

FROM [TelerikAcademy].[dbo].Employees

WHERE Salary > 50000

ORDER BY Salary DESC

1. **Write a SQL query to find the top 5 best paid employees.**

SELECT TOP 5 FirstName + ' ' + LastName AS FullName, Salary

FROM [TelerikAcademy].[dbo].Employees

ORDER BY Salary DESC

1. **Write a SQL query to find all employees along with their address. Use inner join with ON clause.**

SELECT e.FirstName + ' ' + e.LastName AS FullName, a.AddressText

FROM [TelerikAcademy].[dbo].Employees e

INNER JOIN [TelerikAcademy].[dbo].Addresses a

ON e.AddressID = a.AddressID

1. **Write a SQL query to find all employees and their address. Use equijoins (conditions in the WHERE clause).**

SELECT e.FirstName + ' ' + e.LastName AS FullName, a.AddressText

FROM [TelerikAcademy].[dbo].Employees e, [TelerikAcademy].[dbo].Addresses a

WHERE e.AddressID = a.AddressID

1. **Write a SQL query to find all employees along with their manager.**

SELECT e.FirstName + ' ' + e.LastName AS FullName, a.FirstName + ' ' + a.LastName AS ManagerName

FROM [TelerikAcademy].[dbo].Employees e

INNER JOIN [TelerikAcademy].[dbo].Employees a

ON e.ManagerID = a.EmployeeID

1. **Write a SQL query to find all employees, along with their manager and their address. Join the 3 tables: Employees e, Employees m and Addresses a.**

SELECT e.FirstName + ' ' + e.LastName AS FullName, a.FirstName + ' ' + a.LastName AS ManagerName, m.AddressText

FROM [TelerikAcademy].[dbo].Employees e

INNER JOIN [TelerikAcademy].[dbo].Employees a

ON e.ManagerID = a.EmployeeID

INNER JOIN [TelerikAcademy].[dbo].Addresses m

ON e.AddressID = m.AddressID

1. **Write a SQL query to find all departments and all town names as a single list. Use UNION.**

SELECT Name

FROM TelerikAcademy.dbo.Departments

UNION

SELECT Name

FROM TelerikAcademy.dbo.Towns

1. **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.**

SELECT e.FirstName + ' ' + e.LastName AS FullName, a.FirstName + ' ' + a.LastName AS ManagerName

FROM [TelerikAcademy].[dbo].Employees e

LEFT OUTER JOIN [TelerikAcademy].[dbo].Employees a

ON e.ManagerID = a.EmployeeID

SELECT e.FirstName + ' ' + e.LastName AS FullName, a.FirstName + ' ' + a.LastName AS ManagerName

FROM [TelerikAcademy].[dbo].Employees e

RIGHT OUTER JOIN [TelerikAcademy].[dbo].Employees a

ON e.ManagerID = a.EmployeeID

1. **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.**

SELECT e.FirstName + ' ' + e.LastName AS FullName, d.Name, e.HireDate

FROM [TelerikAcademy].[dbo].Employees e

INNER JOIN [TelerikAcademy].[dbo].Departments d

ON e.DepartmentID = d.DepartmentID

WHERE d.Name IN ('Sales', 'Finance') AND YEAR(e.HireDate) BETWEEN 1995 AND 2005