Lab: Databases and SQL Language

You can check your solutions here: https://judge.softuni.org/Contests/3136/Additional-Exercises.

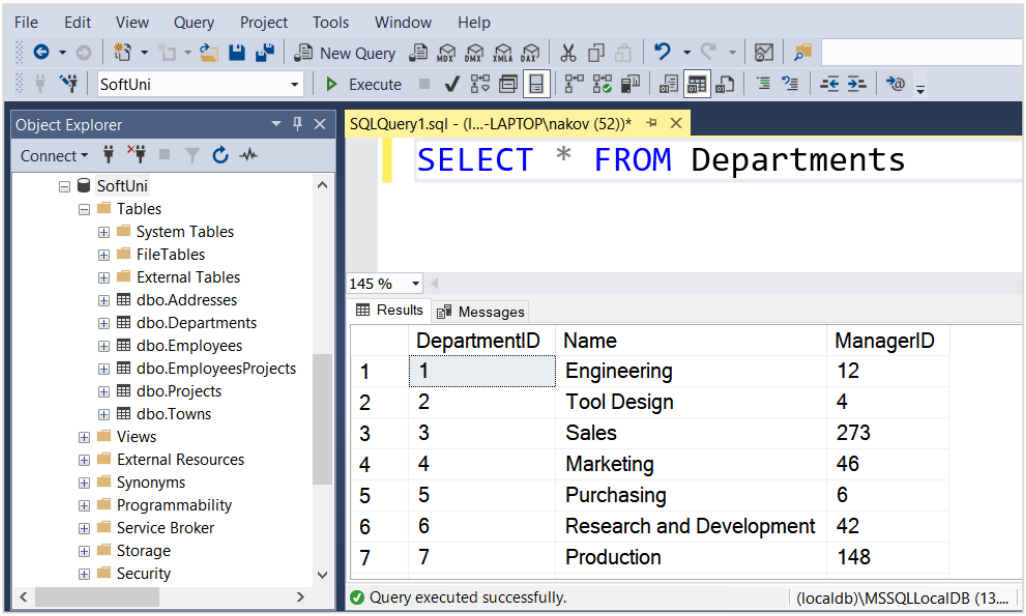
1. Display All Information about the Departments

Write a SQL query to find **all available information about the Departments**.

Example

DepartmentID	Name	ManagerID
1	Engineering	12
2	Tool Design	4
3	Sales	273
...	...	...

Hints



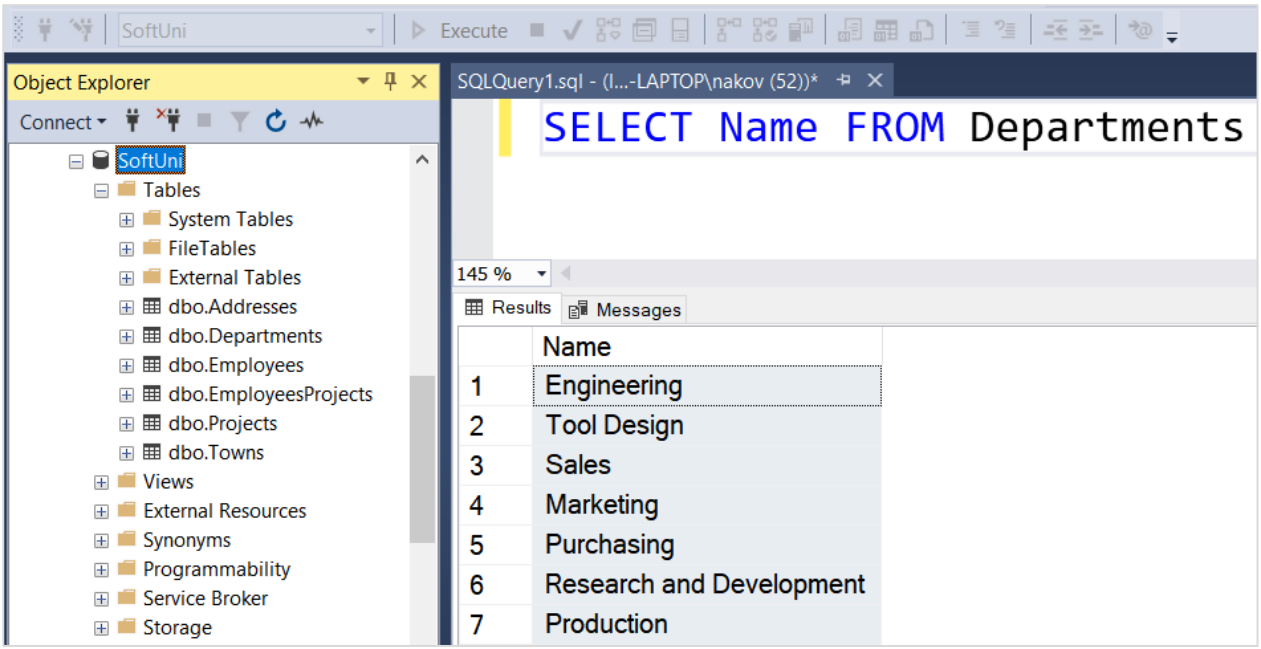
2. Display All Department Names

Write SQL query to find **all Department names**.

Example

Name
Engineering
Tool Design
Sales
...

Hints



3. Salary of Each Employee

Write SQL query to find the **first name**, **last name** and **salary** of each employee.

Example

FirstName	LastName	Salary
Guy	Gilbert	12500.00
Kevin	Brown	13500.00
Roberto	Tamburello	43300.00
…	…	…

4. All Different Employee's Salaries

Write a SQL query to find **all different employee's salaries**. Show only the salaries.

Example

Salary
9000.00
9300.00
9500.00
…

5. Names of All Employees by Salary in Range

Write a SQL query to find the **first name**, **last name** and **job title** of all employees whose **salary is in the range [20000, 30000].**

Example

FirstName	LastName	JobTitle
Rob	Walters	Senior Tool Designer

Thierry	D'Hers	Tool Designer
JoLynn	Dobney	Production Supervisor
…	…	…

6. All Employees Without Manager

Write a SQL query to find **first and last names** about those employees that **does not have a manager**.

Example

FirstName	LastName
Ken	Sanchez
Svetlin	Nakov
…	…

7. All Employees with Salary More Than 50000

Write a SQL query to find **first name**, **last name** and **salary** of those employees who has salary more than 50000. Order them in decreasing order by salary.

Example

FirstName	LastName	Salary
Ken	Sanchez	125500.00
James	Hamilton	84100.00
…	…	…

8. 5 Best Paid Employees.

Write SQL query to find **first and last names** about **5 best paid Employees** ordered **descending by their salary.**

Example

FirstName	LastName
Ken	Sanchez
James	Hamilton
…	…

9. Last 7 Hired Employees

Write a SQL query to find **last 7 hired employees**. Select **their first, last name and their hire date**.

Example

FirstName	LastName	HireDate
Rachel	Valdez	2005-07-01 00:00:00
Lynn	Tsoflias	2005-07-01 00:00:00
Syed	Abbas	2005-04-15 00:00:00
…	…	…

10. Increase Salaries

Write a SQL query to increase salaries of all employees that are in the **Engineering**, **Tool Design**, **Marketing** or **Information Services** department by **12%**. Then **select Salaries column** from the **Employees** table.

Example

Salary
12500.00
15120.00
48496.00
33376.00
…

11. Employee Address

Write a query that selects:

- **EmployeeId**
- **JobTitle**
- **AddressId**
- **AddressText**

Return the **first 5** rows **sorted** by **AddressId** in **ascending** order.

Example:

EmployeeId	JobTitle	AddressId	AddressText
142	Production Technician	1	108 Lakeside Court
30	Human Resources Manager	2	1341 Prospect St
…	…	…	…

12. Addresses with Towns

Write a query that selects:

- **FirstName**
- **LastName**
- **Town**
- **AddressText**

Sorted by **FirstName** in **ascending** order then by **LastName**. Select **first 50** employees.

Example:

FirstName	LastName	Town	AddressText
A.Scott	Wright	Newport Hills	1400 Gate Drive
Alan	Brewer	Kenmore	8192 Seagull Court
…	…	…	…

13. Sales Employee

Write a query that selects:

- **EmployeeID**
- **FirstName**

- **LastName**
- **DepartmentName**

Sorted by **EmployeeID** in **ascending** order. Select only **employees** from "**Sales**" department.

Example:

EmployeeID	FirstName	LastName	DepartmentName
268	Stephen	Jiang	Sales
273	Brian	Welcker	Sales
…	…	…	…

14. Employee Departments

Write a query that selects:

- **EmployeeID**
- **FirstName**
- **Salary**
- **DepartmentName**

Filter only **employees** with **salary higher than 15000**. Return the **first 5** rows **sorted** by **DepartmentID** in **ascending** order.

Example:

EmployeeID	FirstName	Salary	DepartmentName
3	Roberto	43300.00	Engineering
9	Gail	32700.00	Engineering
…	…	…	…

15. Employees Without Project

Write a query that selects:

- **EmployeeID**
- **FirstName**

Filter only **employees without** a **project**. Return the **first 3** rows **sorted** by **EmployeeID** in **ascending** order.

Example:

EmployeeID	FirstName
2	Kevin
6	David
…	…

16. Employees Hired After

Write a query that selects:

- **FirstName**
- **LastName**
- **HireDate**
- **DeptName**

Filter only **employees hired after 1.1.1999** and are from either **"Sales"** or **"Finance"** departments, **sorted** by **HireDate** (**ascending**).

Example:

FirstName	LastName	HireDate	DeptName
Debora	Poe	2001-01-19 00:00:00	Finance
Wendy	Kahn	2001-01-26 00:00:00	Finance
…	…	…	…

17. Create View Highest Peak

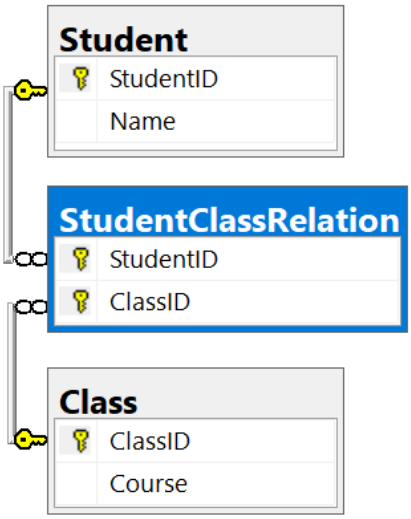
Write a SQL query to create view **v_HighestPeak that selects** all the information about the **highest peak** in the table Peaks. Use the **Geography database**.

Example:

Id	PeakName	Elevation	MountainId
68	Everest	8848	9

18. Students and Classes

Create **database** called **School**.



The school has **classes** and **students** and each class has **many** students and each student has **many** classes. There should be no student enrolled twice in a course. To create appropriate database you will need:

Table **`Student`** columns:

- StudentID – int, identity and primary key
- Name – string with size up to 100

Table **`Class`** columns:

- ClassID – int, identity and primary key
- Course – string with size up to 100

Table **`StudentClassRelation`** columns:

- StudentID – int and not null
- ClassID – int and not null
- Two FOREIGN KEY with references to tables Student and Class
- Primary key pair of (StudentID, ClassID)

Insert the following **data**:

- Add two **students** with names: Olaf Alfonso and Clark Davis
- Add the following **classes**: Biology, Chemistry, Physics, English, Computer Science, History
- The **student** Olaf Alfonso studies in these **classes**: Chemistry, English, History
- The **student** Clark Davis studies in these **classes**: Biology, Physics, History

The table **`StudentClassRelation`** should look like this:

Example:

StudentID	ClassID
1	2
1	4
1	6
2	1
2	3
2	6