Assignment 5

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**Work with the** [**tutorials and exercises**](https://www.w3schools.com/mysql/default.asp) **for the week (see the lab schedule) before you start with the assignment.** [**w3schools**](https://www.w3schools.com/) **has an online SQL service that you can use to test queries. They use the Northwind database, and all the tasks in this assignment are therefore based on this database. Go to** [**this page**](https://www.w3schools.com/sql/trysql.asp?filename=trysql_select_all) **to run queries and paste the answer to the problem after you have tested it on w3schools.**

**If you have made some changes before, don’t forget to click on Restore Database button, before starting with this assignment. All questions carry 1 point. There are in total of 15 questions. Partial answer to a question will result in partial scoring.**

1. Add the following new columns to the *employees* table:
   * *Salary (INT)*
   * *ManagerID (INT) NOT NULL*
   * *DepartmentID (INT) NOT NULL*

ALTER TABLE Employees

ADD Salary int;

ALTER TABLE Employees

ADD ManagerID int NOT NULL DEFAULT "0";

ALTER TABLE Employees

ADD DepartmentID int NOT NULL DEFAULT "0";

1. Insert the values from the table for each column. The values must be inserted for the right ID as shown in the table.

|  |  |  |  |
| --- | --- | --- | --- |
| **EmployeeID** | **Salary** | **ManagerID** | **DepartmentID** |
| 1 | 6900 | 14 | 40 |
| 2 | 2200 | 13 | 30 |
| 3 | 7100 | 11 | 10 |
| 4 | 3500 | 15 | 20 |
| 5 | 6900 | 12 | 50 |
| 6 | 3100 | 14 | 40 |
| 7 | 4500 | 11 | 10 |
| 8 | 4200 | 15 | 20 |
| 9 | 6000 | 12 | 50 |
| 10 | 1500 | 12 | 50 |

update Employees set Salary = 6900, ManagerID = 14, DepartmentID = 40 WHERE EmployeeID = 1

update Employees set Salary = 2200, ManagerID = 13, DepartmentID = 30 WHERE EmployeeID = 2

update Employees set Salary = 7100, ManagerID = 11, DepartmentID = 10 WHERE EmployeeID = 3

update Employees set Salary = 3500, ManagerID = 15, DepartmentID = 20 WHERE EmployeeID = 4

update Employees set Salary = 6900, ManagerID = 12, DepartmentID = 50 WHERE EmployeeID = 5

update Employees set Salary = 3100, ManagerID = 14, DepartmentID = 40 WHERE EmployeeID = 6

update Employees set Salary = 4500, ManagerID = 11, DepartmentID = 10 WHERE EmployeeID = 7

update Employees set Salary = 4200, ManagerID = 15, DepartmentID = 20 WHERE EmployeeID = 8

update Employees set Salary = 6000, ManagerID = 12, DepartmentID = 50 WHERE EmployeeID = 9

update Employees set Salary = 1500, ManagerID = 12, DepartmentID = 50 WHERE EmployeeID = 10

1. Create a new table and call it *departments* and add the following columns to the table:
   * *DepartmentID (INT) NOT NULL and Primary Key*
   * *ManagerID (INT) NOT NULL*
   * *DepartmentName CHAR(25)*

CREATE TABLE departments

(

DepartmentID int not null,

ManagerID int NOT NULL,

DepartmentName CHAR(25),

PRIMARY KEY (DepartmentID)

)

1. Insert values in the table below to the new table. You should insert all the values with one single query.

|  |  |  |
| --- | --- | --- |
| **DepartmentName** | **DepartmentID** | **ManagerID** |
| Administration | 10 | 11 |
| Shipping | 20 | 12 |
| Purchasing | 30 | 13 |
| Sales | 40 | 14 |
| IT support | 50 | 15 |

INSERT INTO departments (DepartmentName, DepartmentID, ManagerID) values

('Administration', 10, 11),

('Shipping', 20, 12),

('Purchasing', 30, 13),

('Sales', 40, 14),

('IT support ', 50, 15)

1. Write a SQL query to find all those employees who work in the Shipping department. Return *DepartmentID*, *FirstName*, and *DepartmentName.*

SELECT departments.DepartmentID, DepartmentName, FirstName FROM Employees, departments

Where Employees.DepartmentID = departments.DepartmentID

and departments.DepartmentName = 'Shipping'

1. Write a SQL query to find those employees whose ID matches any of the number 2, 5 and 9. Return all fields in the table.

SELECT \* FROM [Employees]

WHERE EmployeeID = 2 or EmployeeID = 5 or EmployeeID = 9

1. Show those employees who earn more than the average salary and work in a department with any employee whose first name contains the letter 'R'. Return *EmployeeID*, *FirstName* and *Salary*.

SELECT EmployeeID, FirstName, Salary FROM [Employees]

left join departments

Where Employees.DepartmentID = departments.DepartmentID

and Salary > (SELECT AVG(Salary) from Employees)

and departments.DepartmentName in (Select distinct departments.DepartmentName from Employees

left join departments

Where Employees.DepartmentID = departments.DepartmentID

and FirstName LIKE '%r%')

1. Write a query to find total salary for those departments where at least one employee works. Return *DepartmentID* and *total\_salary.*

SELECT DepartmentName , SUM(Salary) as TOTAL\_SALARY FROM [Employees]

LEFT JOIN departments

on Employees.DepartmentID =departments.DepartmentID

Group by DepartmentName

1. Display the *EmployeeID*, *LastName*, *Salary* and the *Status* column with a title HIGH and LOW for those employees whose salary is more than and less than the average salary of all employees.

SELECT EmployeeID, LastName, Salary,

CASE

WHEN Salary > (SELECT AVG(Salary) from Employees) then 'HIGH'

WHEN Salary < (SELECT AVG(Salary) from Employees) then 'LOW'

end as STATUS

FROM [Employees]

1. Show all odd rows from the *employees* table.

Select \* from Employees

where EmployeeID % 2 != 0

1. Create a copy of the *employees* table. Name the new table *Employees\_copy.*

CREATE TABLE Employees\_copy AS

SELECT \*

FROM Employees

1. Find the 5th highest salary without using limit.

select Salary from Employees E1 where

(5 - 1) = (select count(Salary)

from Employees E2

where E2.Salary > E1.Salary )

1. Write a SQL query to find employees with the same salary.

SELECT \* FROM [Employees]

Where Salary = (SELECT Salary FROM [Employees]

Group by Salary

Having Count(\*) > 1)

1. What query would you use to delete all data inside the *employees* table without deleting the table itself? Do not do this in the w3school database, just write the query here.

DELETE FROM Employees

1. Write a query to delete the *employees\_copy* table.

DROP TABLE employees\_copy