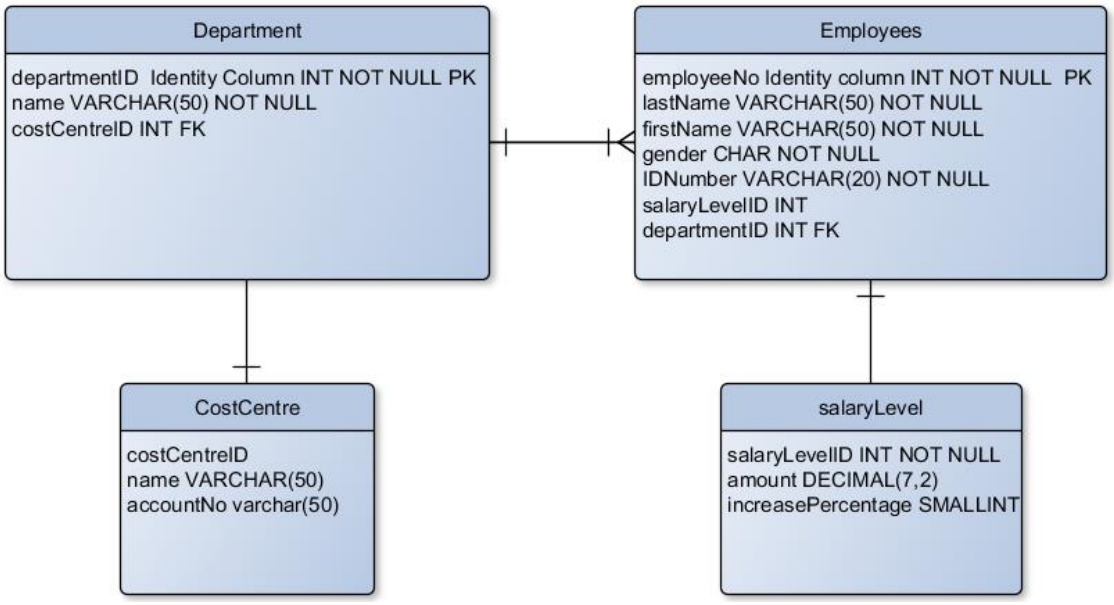
Interview questions

Answer all SQL related queries using the T-SQL syntax

1. Using the below table structure



1.1. Write a script to create the Employees table.

1.2. Write a script to alter the Employees table to increase the length of the lastName field from 50 - 60 characters

1.3. Create a stored procedure that takes in a parameter of a Department Name and returns all the employeesôdetails for the department. If no department name is passed in, return all the employees.

1.4. Create a stored procedure that returns each department name and the number of employees in each department.

1.5. Create a stored procedure that takes in a department name and updates the salary of each employee in the department based on the increase percentage.

1.6. Can you identify any unintended consequences the above procedure might have?

1.7. Create a stored procedure that creates a new Employee. The procedure takes in all the employee details as well as the department and salarylevel.

1.8. Create a stored procedure that takes in a department name and returns the number of Males and females in the department.

1.9. Create a stored procedure that takes in an employNo and returns the salary amount as well as the department name.

1.10. Assuming that the relationship between Employees and salaryLevel does not exist, create a stored procedure that returns all the employees that have a salarylevelID that is not in the Salary level table.

2. Please answer the following using the table structure defined in section 1

2.1. Assuming that we have a front end that takes in any of these sets of parameters to search for an employee

1. (First Name, Last Name and Department)

OR

2. IDNumber and lastName

OR

3. Department and lastName

2.1.1 Please list the tables and columns to add index(es) to in order to improve performance?

2.1.2 What are the disadvantages in creating an index?

2.2. What is the difference between ISNULL and COALESCE?

2.3 Is the Following SQL Statement valid? If not please specify

```
INSERT INTO  Employees
(employeeNo,lastName,firstName,gender,IDNumber,departmentID)
VALUES (12,'Terry','John','M','80050850980874',4)
```

2.4. Why use a relational table structure for the table structure above. Why not have all the fields in one table?

3. Using the below tables

```
CREATE TABLE dbo.EcentricTestTable (ID INT, Name VARCHAR(255))

INSERT INTO  dbo.EcentricTestTable
VALUES (1,'Test1')
INSERT INTO  dbo.EcentricTestTable
VALUES (2,'Test2')
INSERT INTO  dbo.EcentricTestTable
VALUES (3,'Test3')
INSERT INTO  dbo.EcentricTestTable
VALUES (4,'Test4')
INSERT INTO  dbo.EcentricTestTable
VALUES (5,'Test5')
INSERT INTO  dbo.EcentricTestTable
VALUES (6,'Test6')

CREATE TABLE dbo.EcentricTestTable_NEW (ID INT, jobDesciption
VARCHAR(255),[Hours] INT)

INSERT INTO dbo.EcentricTestTable_NEW
VALUES (1,'Developer',10)
INSERT INTO dbo.EcentricTestTable_NEW
VALUES (2,'Web Developer',8)
INSERT INTO dbo.EcentricTestTable_NEW
VALUES (3,'Architect',12)
```

3.1. Create a function called dbo.MapEcentricTestTable that takes in a name as parameter and returns the ID for the corresponding name from dbo.EcentricTestTable.

3.2. How would you optimise the following query taking into account that any text could be passed as a parameter to the function, not just ‘Test2’?

```
SELECT *
FROM dbo.EcentricTestTable e
JOIN EcentricTestTable_NEW n ON n.ID = e.ID
WHERE e.ID = dbo.MapEcentricTestTable('Test2')
```

4 Given the query below:

```
SELECT CASE WHEN NULL = NULL THEN 'Yes' ELSE 'No' END AS Result
```

4.1 What will the result of the query be, please explain why?

4.2 What, if anything, could influence the original query to produce a different result?

4.3 Provide a query that behaves correctly