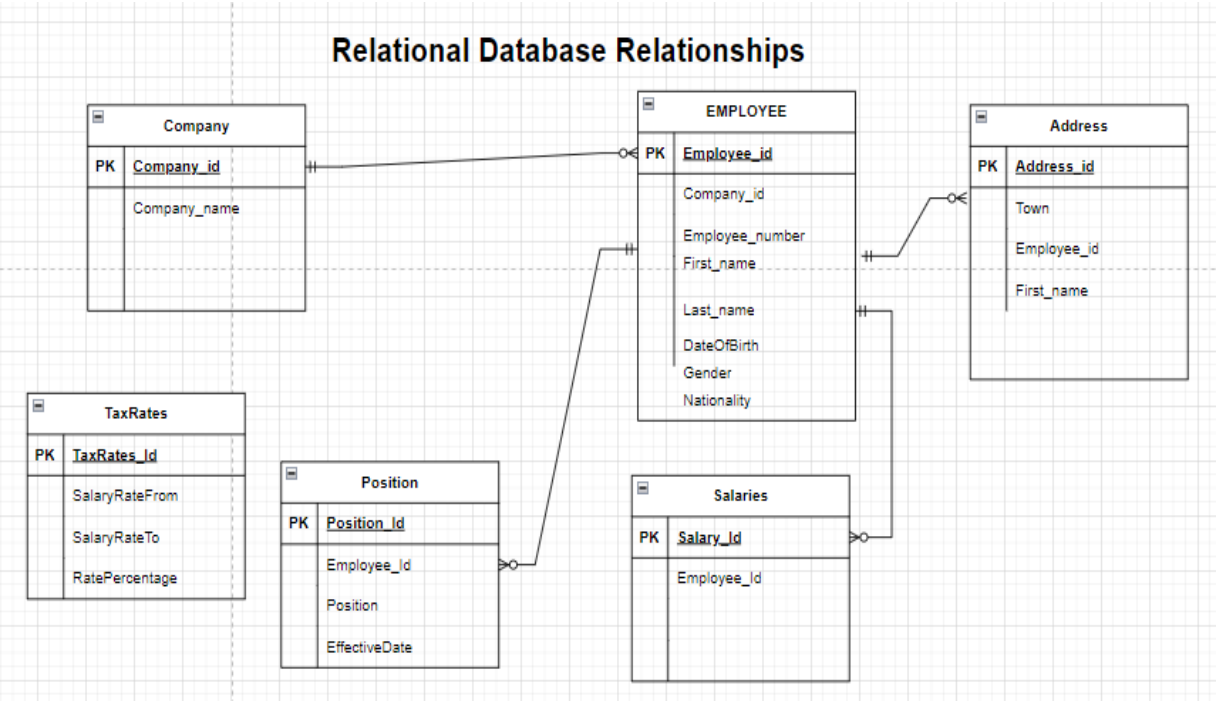
1. Please add a relationship between table Employee and table Address.



2. Please write a statement that would return the tax percentage of each employee, per company.

```
SELECT
      e.employee_id,
      e.First_name,
      e.Last_name,
      c.company_name,
      t.ratepercentage
FROM employee e
INNER JOIN company c ON e.employee_id = c.company_id
INNER JOIN taxrates t ON c.company_id = t.taxrates_id;
```

3. Please write a statement to create a Temporary Table that would house an employee's full name, salary and tax percentage, and subsequently populate it with a statement.

```
CREATE TEMPORARY TABLE TEMP_EMPLOYEE(
    employee_id INT PRIMARY KEY,
    First_name VARCHAR(100),
    Last_name VARCHAR(100),
    SALARY INT,
    RatePercentage INT
);
```

4. Please write a statement that returns the employee with the highest salary, per company.

```
SELECT
    e.employee_id,
    e.First_name,
    e.Last_name,
    c.company_name,
    t.salaryrateto
FROM employee e
INNER JOIN company c  ON e.employee_id = c.company_id
INNER JOIN taxrates t ON c.company_id = t.taxrates_id
where t.salaryrateto in (select max(t.salaryrateto) from taxrates);
```

5. Please write a statement that returns the average salary of employees, per company.

```
SELECT
    e.employee_id,
    e.First_name,
    e.Last_name,
    c.company_name,
    t.ratepercentage,
    AVG(taxrates.salaryrateto) as Avarage_Salary
FROM employee e
INNER JOIN company c ON e.employee_id = c.company_id
INNER JOIN taxrates t ON c.company_id = t.taxrates_id;
GROUP BY COMPANY;
```

6. Please write a statement that returns the total number of positions, grouped by company.

```
SELECT
    e.employee_id,
    e.FirstName,
    p.position,
    p.position_employee_id,
    c.companyname
FROM employee e
INNER JOIN company c ON e.employee_company_ID = c.company_ID
INNER JOIN position p ON p.position_id = p.employee_id,
GROUP BY COMPANY;
```

7. Please write a statement that returns all employees that are male, with a salary of over 31000 and who are over 25 years of age.

```
    We can find the age of a person from their date of birth by using this formula

    SELECT DATE_FORMAT(FROM_DAYS(DATEDIFF(NOW(),'DateOfBirth')), '%Y') + 0 AS age;

SELECT
    e.employee_id,
    e.First_name,
    e.Last_name,
    e.DateOfBirth,
    e.gender,
    t.salaryrateto
FROM employee e
INNER JOIN taxrates t ON e.employee_id = t.taxrates_id;
WHERE gender = 'male' AND age >= 25 with salaryrateto > 31000;
```

8. Please write a statement that returns employees that have a tax rate of over 20%, per company.

```
SELECT
    e.employee_id,
    e.company_id,
    e.First_name,
    e.Last_name,
    c.company_name,
    t.ratepercentage
FROM employee e
INNER JOIN company c ON e.company_id = c.company_id
INNER JOIN taxrates t ON c.company_id = t.taxrates_id;
WHERE ratepercentage > 20;
```

9. Please improve, or optimise the below statement.

```
SELECT DISTINCT company_id , First_name, Last_name, Nationality
FROM employee
WHERE DateOfBirth > '1990-01-15' and Gender = 'Male' and Nationality Like '%South African%';
```

10. Using the tables provided, please create a stored procedure, to return the following information, as detailed below :- Comapany_Name and EmployeeName .

```
CREATE PROCEDURE SelectEmployeeInfo @Company_name VARCHAR(100), @First_name VARCHAR(100)
AS
SELECT
       e.First_name,
       e.Last_name,
       e.dateofbirth,
       t.SalaryRateTo as Salary,
       t.ratepercentage as TaxPercentage,
       e.gender as Gender,
       count (e.gender) as gender_count,
       c.company_name as Comapany_Name
FROM employee as e
INNER JOIN company c ON e.company_id = c.company_id
INNER JOIN taxrates t ON c.company_id = t.taxrates_id
group by e.company_id, c.company_name, e.gender, e.dateofbirth , t.ratepercentage , t.SalaryRateTo, e.First_name, e.Last_name
ORDER BY e.dateofbirth DESC;
GO;
```

11. Explain what an Index is, and provide an example using the Employee Table. (this question can be answered as a comment section in your sql file

Create an Index Command is a special lookup that speeds up data retrieval. An index is simply a reference to data in a table. It cannot be view by users and just used to speed up the database access.

Syntax:

CREATE INDEX name_of_Index ON name_Of_Table(Attribute1, Attribute2,...);

Code

CREATE INDEX MyIndex

on employee (employee_number,first_name,last_name,dateofbirth)