Task 1

Create a visualization that provides a breakdown between the male and female employees working in the company each year, starting from 1990.

Solotion

**SELECT**

**YEAR(d.from\_date) AS calendar\_year,  
    e.gender,  
    COUNT(e.emp\_no) AS num\_of\_employees**

**FROM  
    t\_employees e  
        JOIN  
    t\_dept\_emp d ON d.emp\_no = e.emp\_no**

**GROUP BY calendar\_year , e.gender  
HAVING calendar\_year >= 1990;**

Task 2

Compare the number of male managers to the number of female managers from different departments for each year, starting from 1990.

Solution

**SELECT**

**d.dept\_name,  
    ee.gender,  
    dm.emp\_no,  
    dm.from\_date,  
    dm.to\_date,  
    e.calendar\_year,  
    CASE  
        WHEN YEAR(dm.to\_date) >= e.calendar\_year AND YEAR(dm.from\_date) <= e.calendar\_year THEN 1  
        ELSE 0  
    END AS active  
FROM  
    (SELECT   
        YEAR(hire\_date) AS calendar\_year  
    FROM  
        t\_employees  
    GROUP BY calendar\_year) e  
        CROSS JOIN  
    t\_dept\_manager dm  
        JOIN  
    t\_departments d ON dm.dept\_no = d.dept\_no  
       JOIN   
    t\_employees ee ON dm.emp\_no = ee.emp\_no  
ORDER BY dm.emp\_no, calendar\_year;**

Task 3

Compare the average salary of female versus male employees in the entire company until year 2002, and add a filter allowing you to see that per each department.

Solution

**SELECT   
    e.gender,  
    d.dept\_name,  
    ROUND(AVG(s.salary), 2) AS salary,  
    YEAR(s.from\_date) AS calendar\_year  
FROM  
    t\_salaries s  
        JOIN  
    t\_employees e ON s.emp\_no = e.emp\_no  
        JOIN  
    t\_dept\_emp de ON de.emp\_no = e.emp\_no  
        JOIN  
    t\_departments d ON d.dept\_no = de.dept\_no  
GROUP BY d.dept\_no , e.gender , calendar\_year  
HAVING calendar\_year <= 2002  
ORDER BY d.dept\_no;**

Task 4

Create an SQL stored procedure that will allow you to obtain the average male and female salary per department within a certain salary range. Let this range be defined by two values the user can insert when calling the procedure.

Finally, visualize the obtained result-set in Tableau as a double bar chart.

Solution

**DROP PROCEDURE IF EXISTS filter\_salary;**

**DELIMITER $$  
CREATE PROCEDURE filter\_salary (IN p\_min\_salary FLOAT, IN p\_max\_salary FLOAT)  
BEGIN  
SELECT   
    e.gender, d.dept\_name, AVG(s.salary) as avg\_salary  
FROM  
    t\_salaries s  
        JOIN  
    t\_employees e ON s.emp\_no = e.emp\_no  
        JOIN  
    t\_dept\_emp de ON de.emp\_no = e.emp\_no  
        JOIN  
    t\_departments d ON d.dept\_no = de.dept\_no  
    WHERE s.salary BETWEEN p\_min\_salary AND p\_max\_salary  
GROUP BY d.dept\_no, e.gender;  
END$$**

**DELIMITER ;**

**CALL filter\_salary(50000, 90000);**

My next task was to analyze the data and create a interactive dashboard whose screen shot is below and is uploaded on tableau public.

