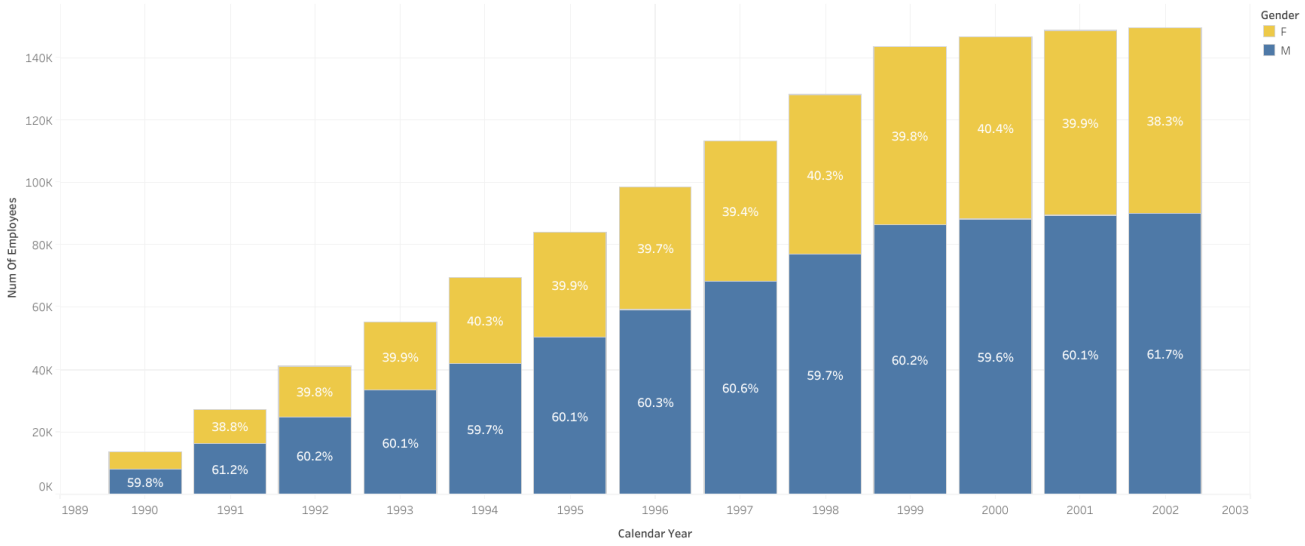
Task 1

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

```sql
USE employees_mod;
SELECT
    YEAR(tde.from_date) AS calendar_year,
    te.gender,
    COUNT(te.emp_no) AS num_of_employees
FROM
    t_employees te
        JOIN
    t_dept_emp tde ON te.emp_no = tde.emp_no
GROUP BY calendar_year , te.gender
HAVING calendar_year >= 1990;
```

calendar_year	gender	num_of_employees
1998	M	8929
1990	F	5470
1992	M	8480
1993	F	5623
1999	M	9199
1997	M	8930
1998	F	6030
1995	M	8623
1991	M	8295
1994	M	8468
1990	M	8134
2002	F	414
1994	F	5719

Tableau Task 1 - Male and Female employees working in the company each year, starting from 1990



Link : https://public.tableau.com/views/Book2_17358257931730/Chart1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

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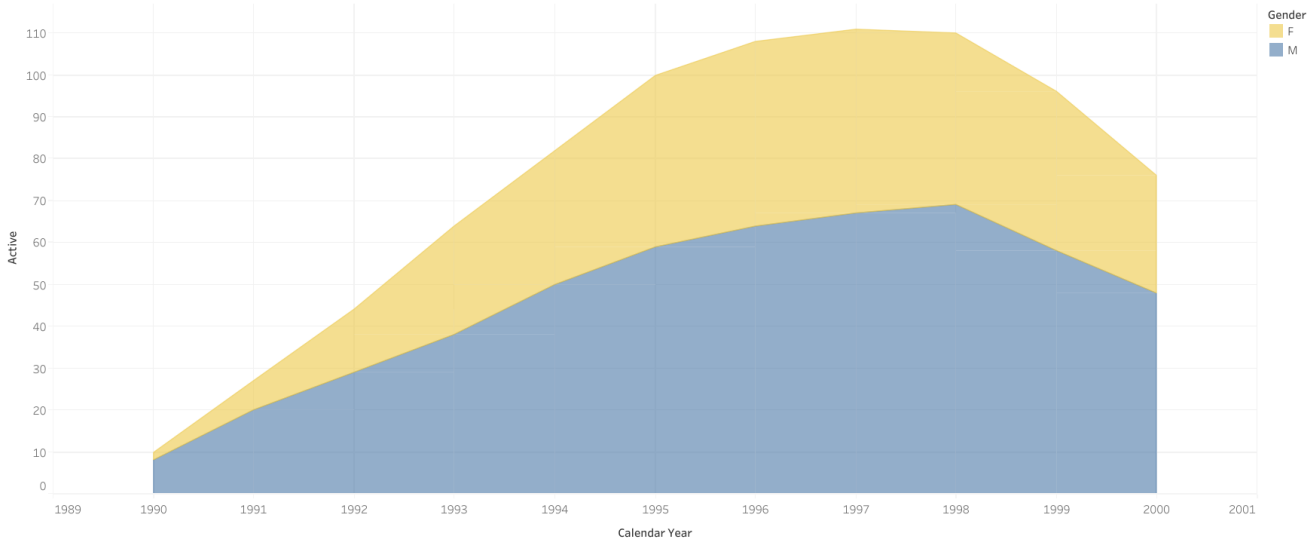
Task 2

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

```sql
SELECT
    d.dept_name, e.gender, dm.emp_no, dm.from_date, dm.to_date, cal.calendar_year,
    CASE
        WHEN YEAR(dm.to_date) >= cal.calendar_year AND YEAR(dm.from_date) <= cal.calendar_year THEN 1
        ELSE 0
    END AS active
FROM
    (SELECT YEAR(hire_date) AS calendar_year FROM t_employees GROUP BY calendar_year) cal
        CROSS JOIN
    t_dept_manager dm
        JOIN
    t_departments d ON dm.dept_no = d.dept_no
        JOIN
    t_employees e ON dm.emp_no = e.emp_no
ORDER BY dm.emp_no , calendar_year;
```

dept_name	gender	emp_no	from_date	to_date	calendar_year	active
Marketing	M	110022	1995-12-30	1998-12-29	1990	0
Marketing	M	110022	1995-12-30	1998-12-29	1991	0
Marketing	M	110022	1995-12-30	1998-12-29	1992	0
Marketing	M	110022	1995-12-30	1998-12-29	1993	0
Marketing	M	110022	1995-12-30	1998-12-29	1994	0
Marketing	M	110022	1995-12-30	1998-12-29	1995	1
Marketing	M	110022	1995-12-30	1998-12-29	1996	1
Marketing	M	110022	1995-12-30	1998-12-29	1997	1
Marketing	M	110022	1995-12-30	1998-12-29	1998	1
Marketing	M	110022	1995-12-30	1998-12-29	1999	0

Task 2 - Comparision of male and female managers who are active



The plot of Active manager number for Calendar Year. Color shows details about Gender. Details are shown for Gender. The data is filtered on Dept Name, which keeps 9 of 9 departments.

Link: https://public.tableau.com/views/task2_17359290579960/Sheet1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

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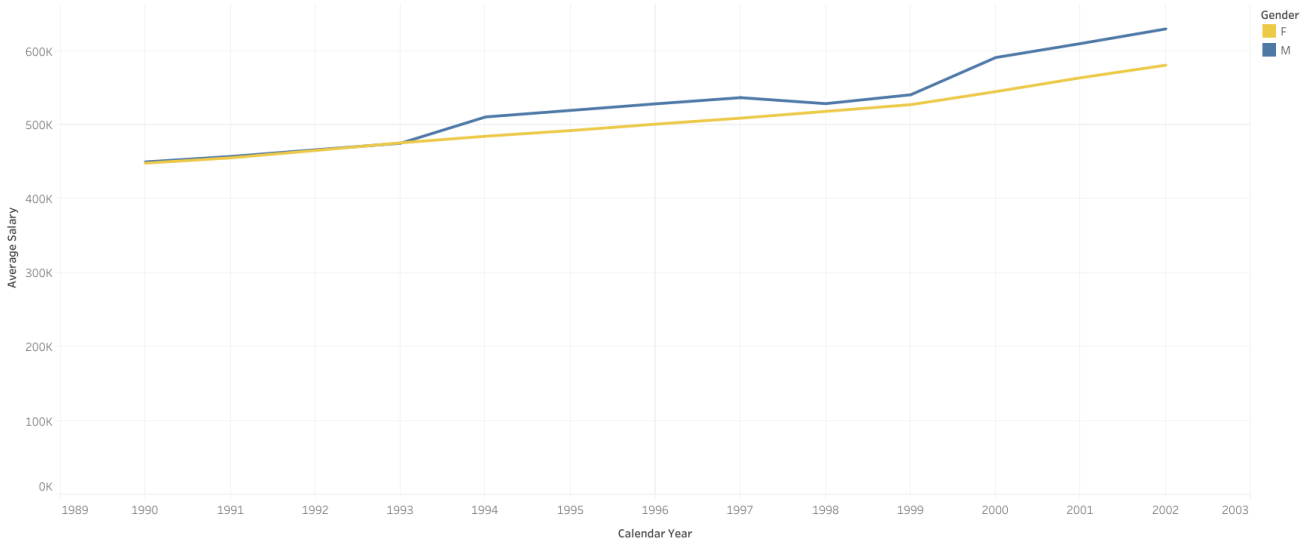
Task 3

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.

```sql
SELECT
    e.gender,
    d.dept_name,
    ROUND(AVG(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;
```

gender	dept_name	salary	calendar_year
M	Marketing	58895.85	1990
M	Marketing	59232.75	1991
M	Marketing	59743.08	1992
M	Marketing	60436.85	1993
M	Marketing	64547.55	1994
M	Marketing	65377.05	1995
M	Marketing	66467.56	1996
M	Marketing	67253.18	1997
M	Marketing	66332.51	1998
M	Marketing	67594.58	1999
M	Marketing	73248.01	2000
M	Marketing	75364.26	2001
M	Marketing	77525.24	2002
F	Marketing	57358.31	1990
F	Marketing	57670.20	1991

Task 3 - Comparison of the average salary of female and male employees



The graph is the comparison of the average salary of female versus male employees in the entire company until year 2002. Color shows details about Gender. Details are shown for Gender. The data is filtered on Dept Name, which keeps 9 of 9 departments.

Link: https://public.tableau.com/views/Task3_17360134926880/Task3?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

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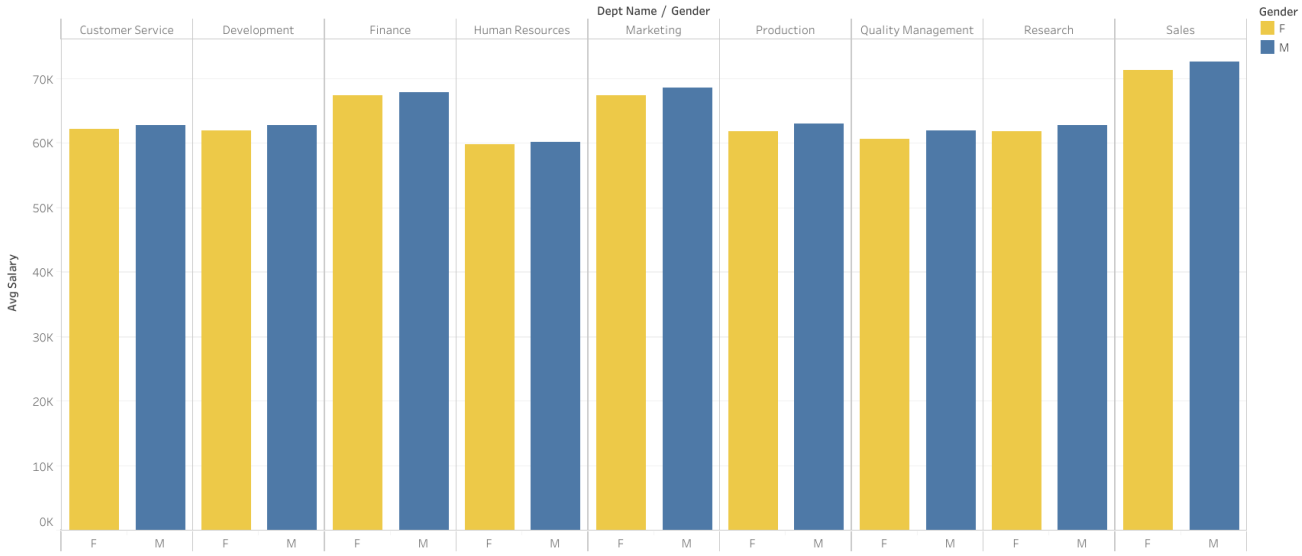
Task 4

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.

```sql
DROP PROCEDURE IF EXISTS sp_filter_salary;

DELIMITER $$
CREATE PROCEDURE sp_filter_salary (IN p_min_salary FLOAT, IN p_max_salary FLOAT)
BEGIN
SELECT
    e.gender, d.dept_name, ROUND(AVG(s.salary), 2) AS avg_salary
FROM
    t_salaries s
        JOIN
    t_employees e ON s.emp_no = e.emp_no
        JOIN
    t_dept_emp de ON de.emp_no = e.emp_no
        JOIN
    t_departments d ON d.dept_no = de.dept_no
WHERE
    s.salary BETWEEN p_min_salary AND p_max_salary
GROUP BY d.dept_no , e.gender;
END$$

DELIMITER $$ ;

CALL sp_filter_salary(50000, 90000);sp_filter_salary;
```

gender	dept_name	avg_salary
M	Development	62924.43
M	Sales	72609.27
F	Marketing	67554.25
F	Production	61860.77
M	Production	62978.91
M	Human Resources	60190.38
F	Development	61963.68
F	Research	61795.86
F	Finance	67420.69
M	Research	62900.31
M	Finance	67982.07
M	Marketing	68693.75
F	Sales	71277.31
M	Quality Manage...	61990.41
F	Customer Service	62343.95

Task 4 - Average Salary comparison of male and female employees



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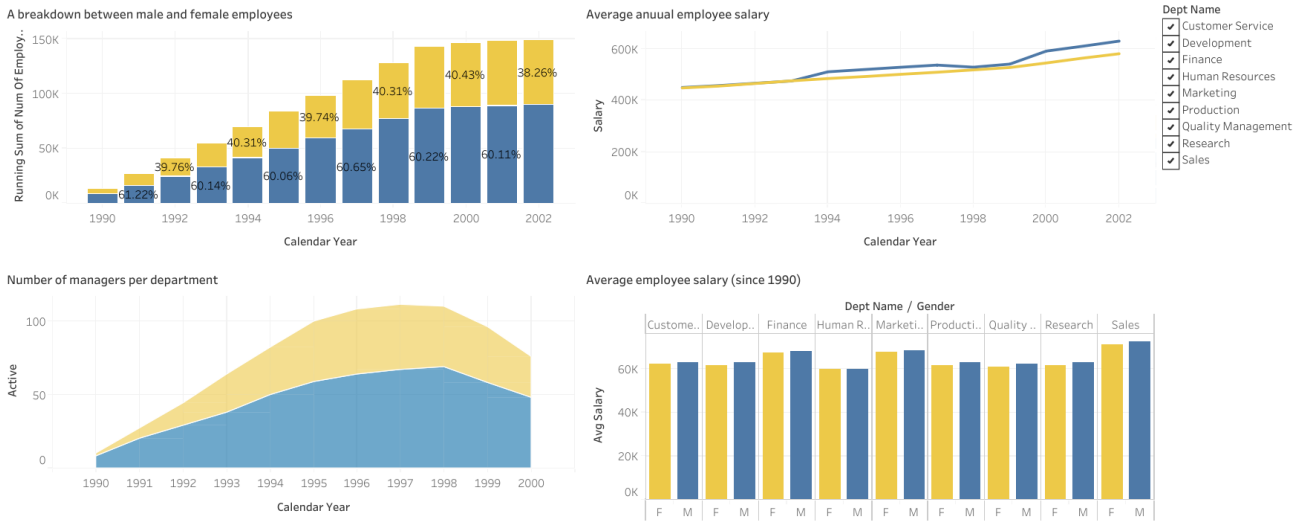
Final Dashboard



Link: https://public.tableau.com/views/final_dashboard_17360853681300/Dashboard1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

Linkedlin : [Pranoy Chakraborty]