PRAKHAR BINJOLA

COMBINING SQL AND TABLEAU

DATABASE INTEGRATION

Table of Contents

Task 1

```
SELECT
    YEAR(de.from_date) AS calender_year,
    e.gender AS gender,
    COUNT(*) AS num_of_employees
FROM
    t_employees e
        JOIN
    t_dept_emp de ON e.emp_no = de.emp_no
WHERE
    de.from_date >= '1990-01-01'
GROUP BY YEAR(de.from_date) , e.gender
ORDER BY de.from_date , e.gender;
```

```
SELECT
    YEAR(d.from_date) AS calender_year,
    e.gender AS gender,
    COUNT(e.emp_no) AS num_of_employees
FROM
    t_employees e
```

```
        JOIN
    t_dept_emp d ON e.emp_no = d.emp_no
GROUP BY calender_year , e.gender
HAVING calender_year >= '1990'
ORDER BY d.from_date , e.gender;
```

calender_year	gender	num_of_employees
1990	F	5470
1990	M	8134
1991	F	5255
1991	M	8295
1992	F	5596
1992	M	8480
1993	M	8483
1993	F	5623
1994	M	8468
1994	F	5719
1995	F	5734
1995	M	8623
1996	F	5815
1996	M	8818
1997	F	5795
1997	M	8930
1998	M	8929
1998	F	6030
1999	F	6076

Task 2

```
SELECT
    d.dept_name,
    ee.gender,
    dm.emp_no,
    dm.from_date,
    dm.to_date,
    e.calender_year,
    CASE
        WHEN e.calender_year BETWEEN YEAR(dm.from_date) AND YEAR(dm.to_date) THEN '1'
        ELSE '0'
    END AS `active`
FROM
    (SELECT
        YEAR(hire_date) AS calender_year
    FROM
        t_employees
    GROUP BY calender_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

WHERE

    dm.from_date >= '1990-01-01'

ORDER BY emp_no , e.calender_year;
```

dept_name	gender	emp_no	from_date	to_date	calender_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
Marketing	M	110022	1995-12-30	1998-12-29	2000	0
Marketing	M	110039	1997-04-09	9999-01-01	1990	0
Marketing	M	110039	1997-04-09	9999-01-01	1991	0
Marketing	M	110039	1997-04-09	9999-01-01	1992	0
Marketing	M	110039	1997-04-09	9999-01-01	1993	0
Marketing	M	110039	1997-04-09	9999-01-01	1994	0
Marketing	M	110039	1997-04-09	9999-01-01	1995	0
Marketing	M	110039	1997-04-09	9999-01-01	1996	0
Marketing	M	110039	1997-04-09	9999-01-01	1997	1

Task 3

```
SELECT
    e.gender,
    d.dept_name,
    ROUND(AVG(s.salary), 2) AS salary,
    YEAR(s.from_date) AS calender_year
FROM
    t_employees e
        JOIN
    t_dept_emp de ON e.emp_no = de.emp_no
        JOIN
    t_departments d ON de.dept_no = d.dept_no
        JOIN
    t_salaries s ON e.emp_no = s.emp_no
WHERE
    YEAR(s.from_date) <= '2002'
GROUP BY calender_year , d.dept_name , e.gender
ORDER BY calender_year;
```

	gender	dept_name	salary	calender_year
▶	M	Customer Service	44414.06	1990
	F	Customer Service	44814.29	1990
	M	Development	45764.32	1990
	F	Development	45610.85	1990
	M	Finance	57643.56	1990
	F	Finance	56502.18	1990
	M	Human Resources	40998.23	1990
	F	Human Resources	40972.99	1990
	M	Marketing	58895.85	1990
	F	Marketing	57358.31	1990
	M	Production	45269.05	1990
	F	Production	45138.16	1990
	M	Quality Managem...	42991.80	1990
	F	Quality Managem...	43468.01	1990
	M	Research	46638.34	1990
	F	Research	47005.88	1990
	M	Sales	67413.76	1990
	F	Sales	67448.70	1990
	M	Customer Service	45559.61	1991

Task 4

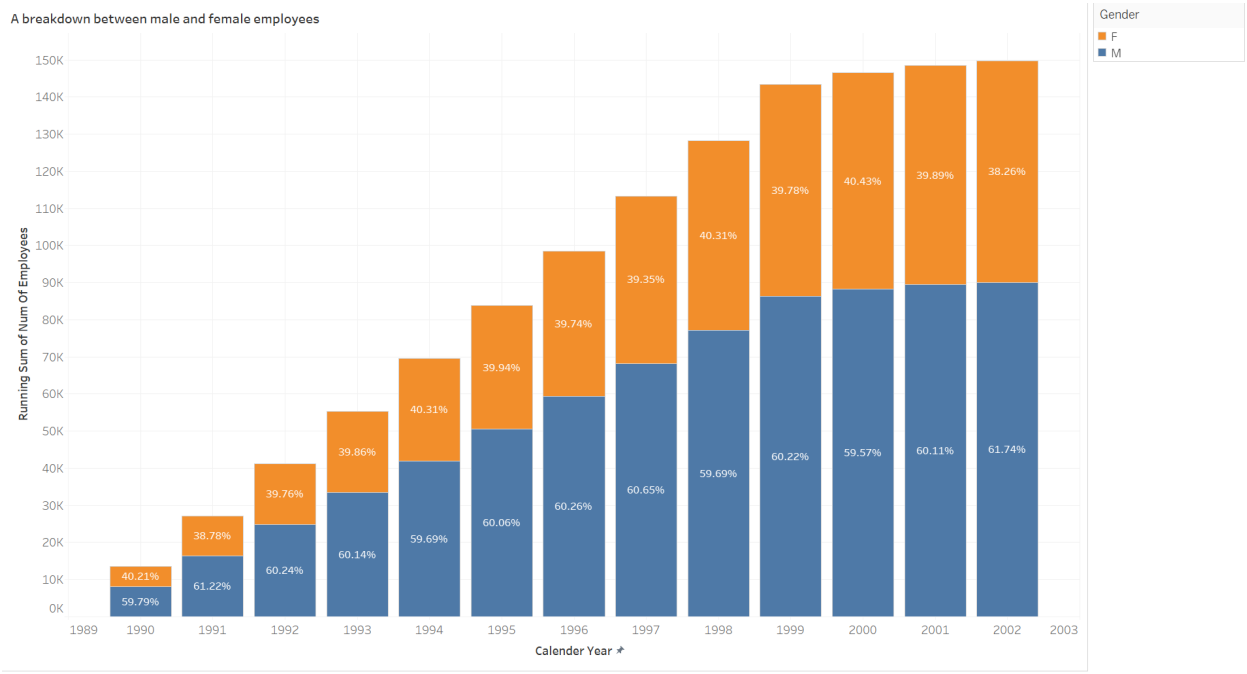
```
drop procedure if exists filter_salary;

delimiter $$

create procedure filter_salary(IN p_min_salary float, IN p_max_salary float)

begin

SELECT

        e.gender, d.dept_name, ROUND(AVG(s.salary), 2) AS avg_salary

FROM

        t_employees e

                JOIN

        t_dept_emp de ON e.emp_no = de.emp_no

                JOIN

        t_departments d ON de.dept_no = d.dept_no

                JOIN

        t_salaries s ON e.emp_no = s.emp_no

WHERE s.salary BETWEEN p_min_salary AND p_max_salary

GROUP BY d.dept_name , e.gender

ORDER BY d.dept_name;

end$$

delimiter ;                -- float data type in the standard choice for professionals for currency
```

call filter_salary(50000, 90000);

gender	dept_name	avg_salary
M	Customer Service	62957.63
F	Customer Service	62343.95
M	Development	62924.43
F	Development	61963.68
M	Finance	67982.07
F	Finance	67420.69
M	Human Resources	60190.38
F	Human Resources	59868.12
M	Marketing	68693.75
F	Marketing	67554.25
M	Production	62978.91
F	Production	61860.77
M	Quality Managem...	61990.41
F	Quality Managem...	60696.84
M	Research	62900.31
F	Research	61795.86
M	Sales	72609.27
F	Sales	71277.31

Result and Discussion

Task 1

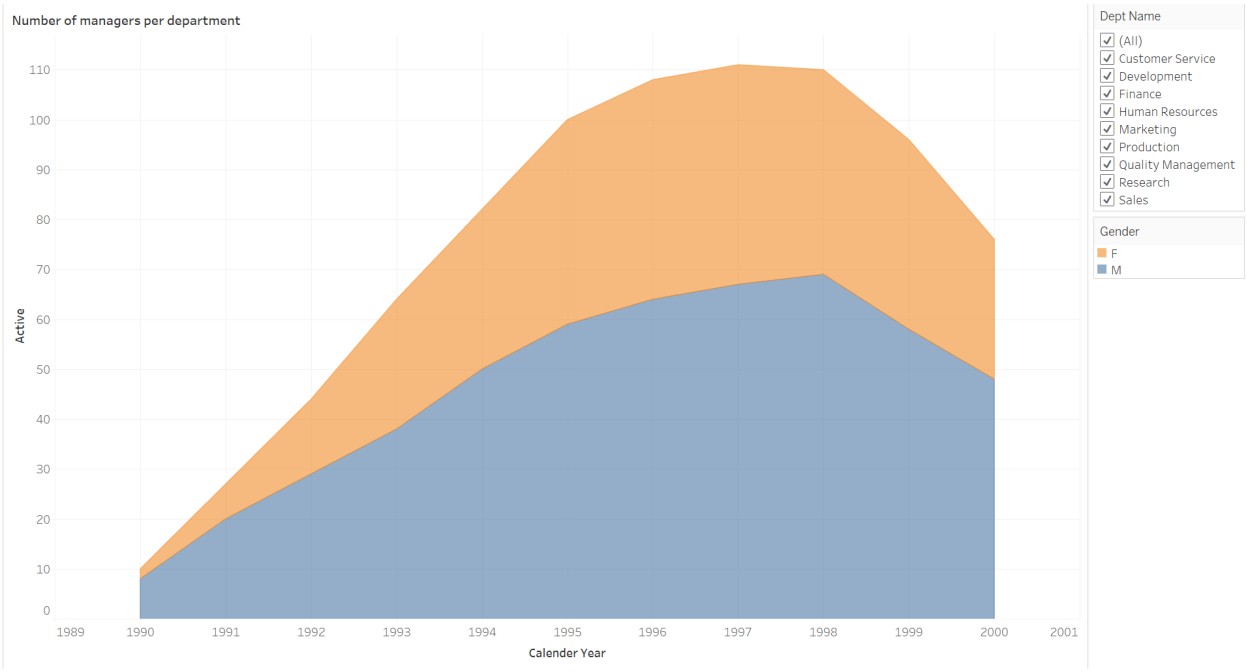


https://public.tableau.com/views/Task-1_16526739308700/Sheet1?:language=en-US&:display_count=n&:origin=viz_share_link

In 1990 there were less than 20000 workers in the company while in 2002 just 12 years later there were more than 140000.

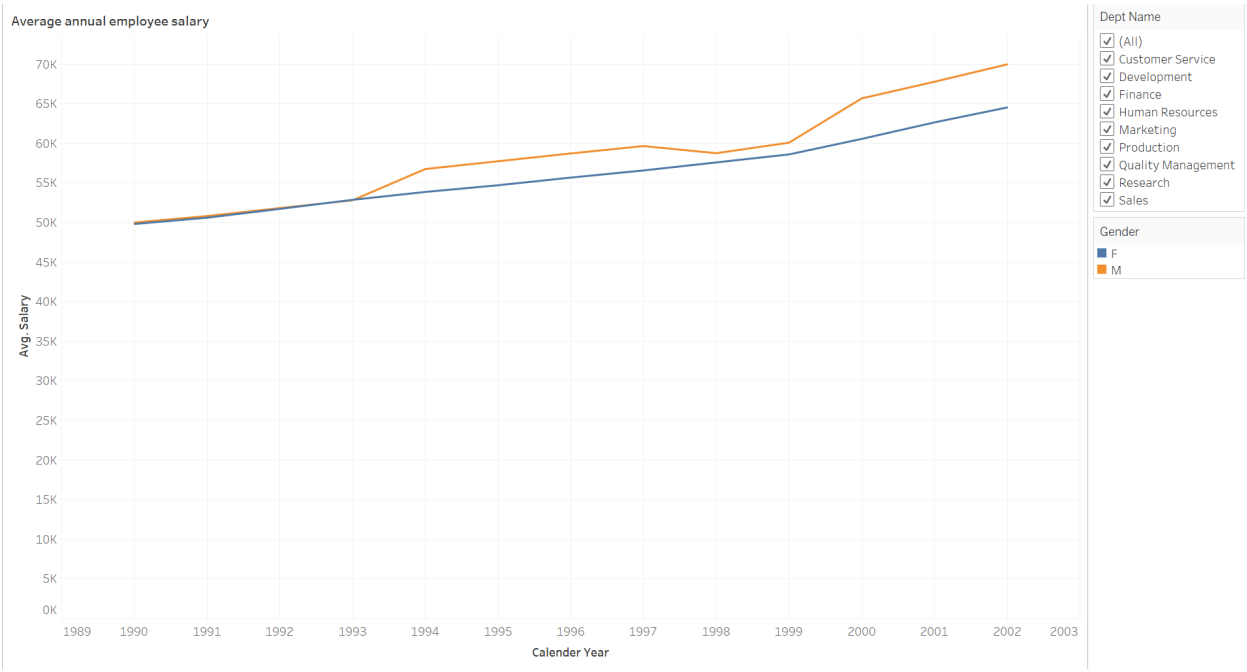
However, the increase in the number of employed workers throughout the years has been constant and the ratio between male and female employees and the company has always been 60 to 40 per cent approximately.

Task 2



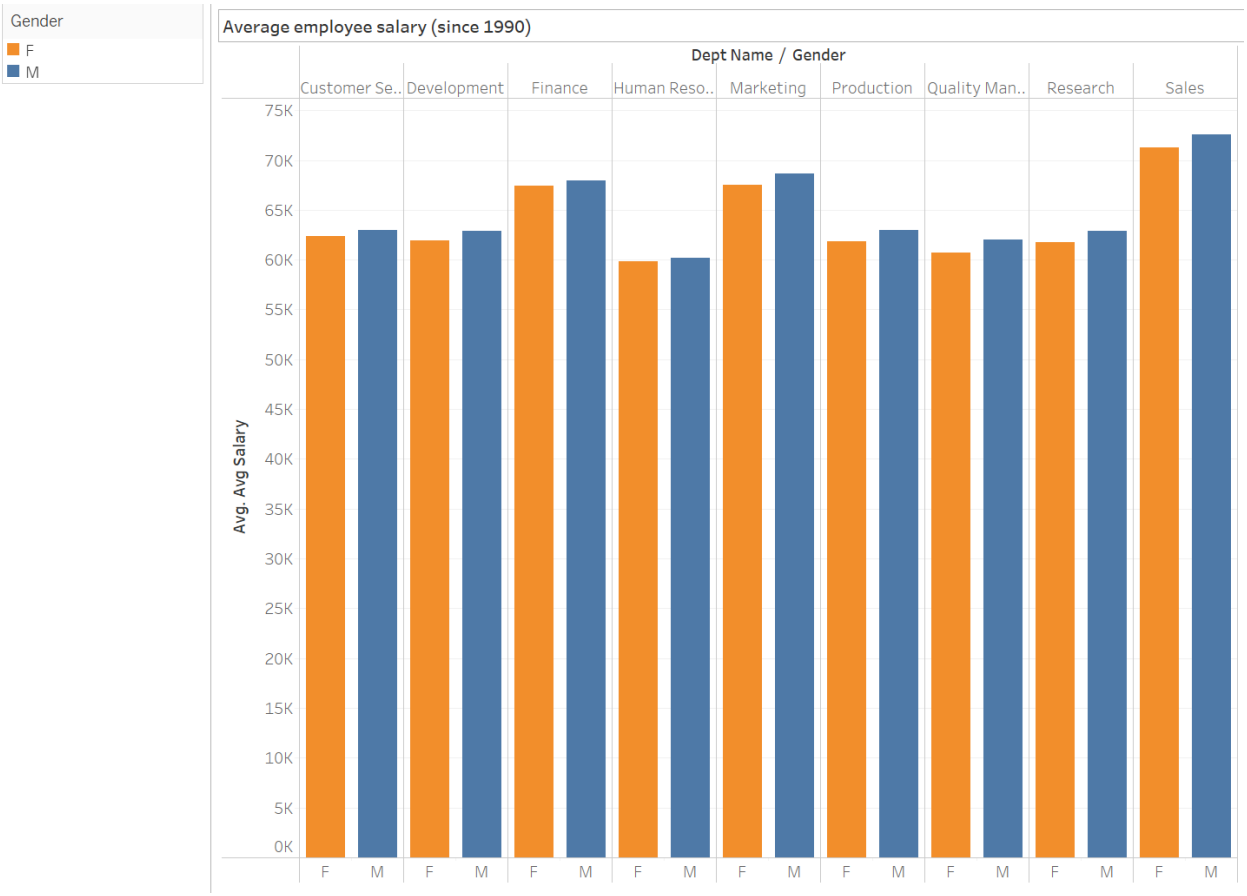
https://public.tableau.com/views/Task-2_16526787087910/Chart2?:language=en-US&:display_count=n&:origin=viz_share_link

Task 3



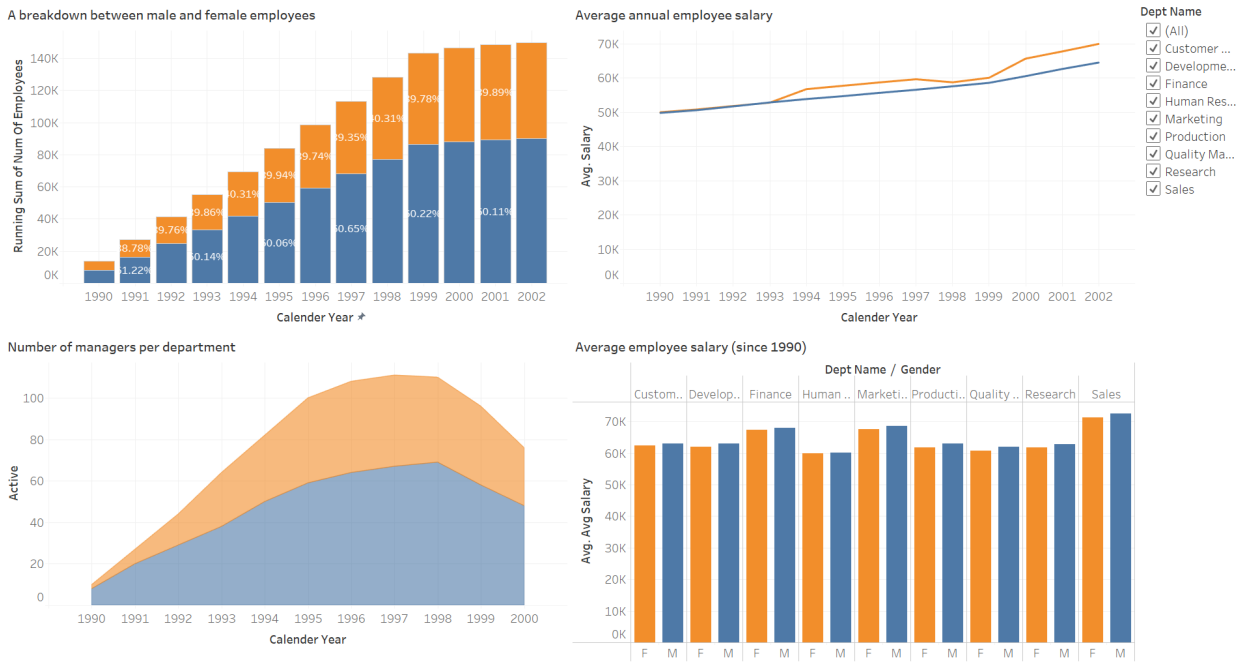
https://public.tableau.com/views/Task-3_16528871634270/Sheet1?:language=en-US&:display_count=n&:origin=viz_share_link

Task 4



https://public.tableau.com/views/Task-4_16528891055540/Chart4?:language=en-US&:display_count=n&:origin=viz_share_link

Task 5



https://public.tableau.com/views/Dashboard-1_16528914004590/Dashboard1?:language=en-US&:display_count=n&:origin=viz_share_link