1st Case Study

We have extracted the number of male and female employees in the company - for employees whose contracts have not expired yet.

There was a big difference between the numbers of the two gender ,

Where the number of males was: 155434 , and the number of females: 103552.

To solve this problem, first we extracted the ratio of males to females who were employed in the last five years = M = 14618 , F = 9573 , and the Ratio = 1:5 .

Second, We extracted information about each department and the number of males and females in it.

The results were as follows:

gender	dept_no	dept_name	female_no
F	d005	Development	31026
F	d004	Production	26916
F	d007	Sales	19029
F	d009	Customer Service	8671
F	d008	Research	7667
F	d006	Quality Management	7393
F	d001	Marketing	7316
F	d003	Human Resources	6432
F	d002	Finance	6341

gender	dept_no	dept_name	male_no
M	d005	Development	46673
M	d004	Production	40045
M	d007	Sales	28540
M	d009	Customer Service	13000
M	d008	Research	11589
M	d001	Marketing	11093
M	d006	Quality Management	10963
M	d003	Human Resources	9750
M	d002	Finance	9408

And we planned to solve this over a period of five years to hire 1,000 males against 2,000 females, so that after five years their ratio would be 1:1.

Females will hired in the deployment , production and sales departments

As for the males, the deployment and production department seems fine, so they will be hired in other less numerous departments.

For The AVG(salary),We found that both gender are very close, so we decided not to change anything with it.

2nd Case Study

we build a query that shows us the total amount of salaries paid to each department, after that we compare it into the salaries paid to the employees in the same department to know if there is any overpaid. The result is as follows:

Total of salaries paid to each department last year as it is shown:

employees	dept_no	dept_name	department_amount
25370	d005	Development	1580097790
21896	d004	Production	1364480859
15439	d007	Sales	1290619775
5920	d001	Marketing	440950470
7055	d009	Customer Service	433738224
6238	d008	Research	390864771
5108	d002	Finance	372302687
5900	d006	Quality Management	354625211
5310	d003	Human Resources	309020676

- Sum of salaries = 5914584280

There is overpaid in all departments compared to the salaries paid to the employees. It really needs to be restructured as the employees do not have clear and specific salary scale criteria.

- The highest salary in the Development department is for someone with experience of 14 years while the lowest salary goes to a person with 6 years of experience. whereas those who have 1 year of experience are higher than them.

- The highest salary in the Production department is for someone with experience of 11 years while the lowest salary goes to a person with 13 years of experience.

- The highest salary in the Sales department is for someone with experience of 15 years while the lowest salary goes to a person with 15 years of experience too!

- The highest salary in the Marketing department is for someone with experience of 10 years while the lowest salary goes to a person with 10 years of experience too!

- The highest salary in the Customer Service department is for someone with experience of 14 years while the lowest salary goes to a person with 3 years of experience. whereas those who have 2 years of experience are higher than them and those who have 15 years of experience in the same position as those who have 3 years of experience.

- The highest salary in the Research department is for someone with experience of 15 years while the lowest salary goes to a person with 9 years of experience. whereas those who have 3 years of experience are higher than them.

- The highest salary in the Finance department is for someone with experience of 14 years while the lowest salary goes to a person with 1 year of experience whereas those who have 8 years of experience in the same position with them.

- The highest salary in the Quality Management department is for someone with experience of 14 years while those who have 15 years of experience are in a lower position than them.

- The highest salary in the Human Resources department is for someone with experience of 13 years while the lowest salary goes to a person with 14 years of experience! whereas those who have 1 year of experience have higher salaries than them.

Therefore, as an initial solution we develop a strategy to reduce the cost of all contracts expiring within a year instead of downsizing departments.

- The employees' information we plan reduce is have been attached in .csv file.

- in additon, we found that average salary of both gender are very close, so we decided not to change anything with it.

3rd Case Study

The company wants to reward its employees for their work which was as a very excellent revenue for the company, therefore, the company gave a budget that does not exceed 50$ million. Here provides three different bonus plans

1. The first plan sees the average salary for both genders if it is equal or not to decide the bonus

	gender	avg(salaries.salary)
▶	M	70304.8295
	F	70219.4463

As you can see the salary average is not equal, so we offer the bonus for the lowest Average salary and here, the female is the lowest average salary than males, therefore, we decide to give a bonus which is 85$ for all females who will continue working with us. We chose this amount because the difference between the average salary is 85. The total amount (bonus) paid here is 85 x (87307 the number of females) = 7421095 $

2. A lot of employees have serviced the company for many years, so we decide the second plan, increase the salary for employees who have worked for the company for 10 years or more.

	count(employees.emp_no)
▶	136124

You can see above that the number of employees who worked 10 years or more is 136124, and 150$ is considered the bonus price. The total amount (bonus) paid here is 150$ x 136124 = 20418600 $