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**Title: SQL Stored Procedure and User-Defined Functions Assignment  
Group name (Ninjas)**

**1st Case Study**

A company wants to assess its gender equality employment policy by looking into the number of male and female employees in the company. Please find:

* The number of male and female employees in the company.
* The ratio of males to females hired in the last 5 years
* If the ratio is not 1:1, list the departments that have the highest gaps in descending order
* If the ratio is not 1:1, then design a 5-year plan to resolve this difference when hiring new employees to fill new positions. Clearly state the number of employees we need to hire each year
* If the average salary for males and females is not equal, then find the gap in each department and design a 5-year plan to resolve this situation. Clearly state the number of additional funds that the company needs to allocate

For the first point we counted the number of all the female and male employees in the company we found out that there are:

**179973 male employees**

**120051 female employees**

From this we can clearly see that there are 59922 more male employees in the company than the females.

For the next point, after calculating the ratio of the males and females **hired in the last 5 years**, we can see that the ratio is **not 1:1** and it was about **1.5225.** these are the departments with the highest ratios in descending order are:

1. Marketing 1.5147 6. Customer service 1.4958

2. Human resources 1.5139 7. Quality management 1.4903

3. Sales 1.5053 8. Production 1.4869

4. Research 1.5034 9. Finance 1.4727

5. Development 1.5018

The number of employees in the last 5 years is:

**13234 male employees**

**8691 female employees**

If we subtract male numbers with female numbers, we will see that the **company has 4543 less female employees than males**. To fix this for the next 5 years the company will need to layoff around 454 male employees each year while hiring the same number of female employees. Doing this will help the company to maintain about the same amount of funds throughout the next 5 years.

In the last point Since the average salary between males and females in each department is **less than 800 dollars**, we considered that this is a fine amount that doesn’t need to be adjusted.

**2nd Case Study**

Due to unforeseen events similar to COVID-19 the company wants to downsize its employees to save 20% of the total salaries it pays annually.

We calculated the total annual salaries paid in the last year, to save 20% of total salaries paid annually. The result

as the following:

* Total dept salaries paid in 2000 = 6,550,550,602
* The calculation of 20% = 1,310,110,120.4

The first step we have done, is deduct 30% and 50% of the lowest years of service among all departments. As we noticed that there are many employees who have served for two years or less are paid more than $100,000, so we took off 50% of the total annual salary. In addition, for the employees who have served between three to five years and are paid more than $100,000 we took off 30% of the total annual salary. We found 55 of our employees matching these two cases. Ultimately, this helped us save around 4,805,711.30 $.

We found that is not sufficient, so we went to push some employees to early retirement. We have selected the age range of 65 – 70 years of employees and served us 8 years and more. We found 13231of employees are on the edge of retirement. This helped us saving around 1,023,811,879 $.

Fortunately, we an almost achieved our goal and we will try to reset lower salaries for renewal contracts with our employees.

All of employees’ information are listed in excel sheets.

**3nd Case Study**

A company wants to offer bonuses at the end of the year to reward its employees. The total payment should not exceed $50 million.

We decided to design a plan to distribute these bonuses correctly using the employees records of a certain company, we tried to figure out solutions for the following problems:

* We had to find out the average salary between the female and male employees to see if there was a noticeable difference and whether or not offering a higher bonus was needed to compensate for it.
* We also needed to know the employees’ years of service with the company to decide the difference in bonuses.
* If the employees’ contracts are about to end (February 1,2001) we had to convince them to stay with us.

For the first issue we calculated the average of both the female and male employees and the results were as follows:

**Average Salary for female employees :** $63769.122

**Average Salary for male employees :** $63755.9134

As we can see there isn’t much of a noticeable difference in salaries so there will be no need to provide higher bonuses to compensate either of them.

As for the second part the employees years of service were varying between 15 to 16 years and less. So we decided that employees who have over 15 years of service would have a 5% bonus and employees who have over 10 years of service would have a 3% bonus.

As for the last issue we found that 20 employees are ending their contract in February so we can convince them to stay with us by offering a raise based on their years of service like the previous issue. If they don’t fall within those categories we can interest them in a 3000$ raise or a better health insurance plan for them.