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Data Science

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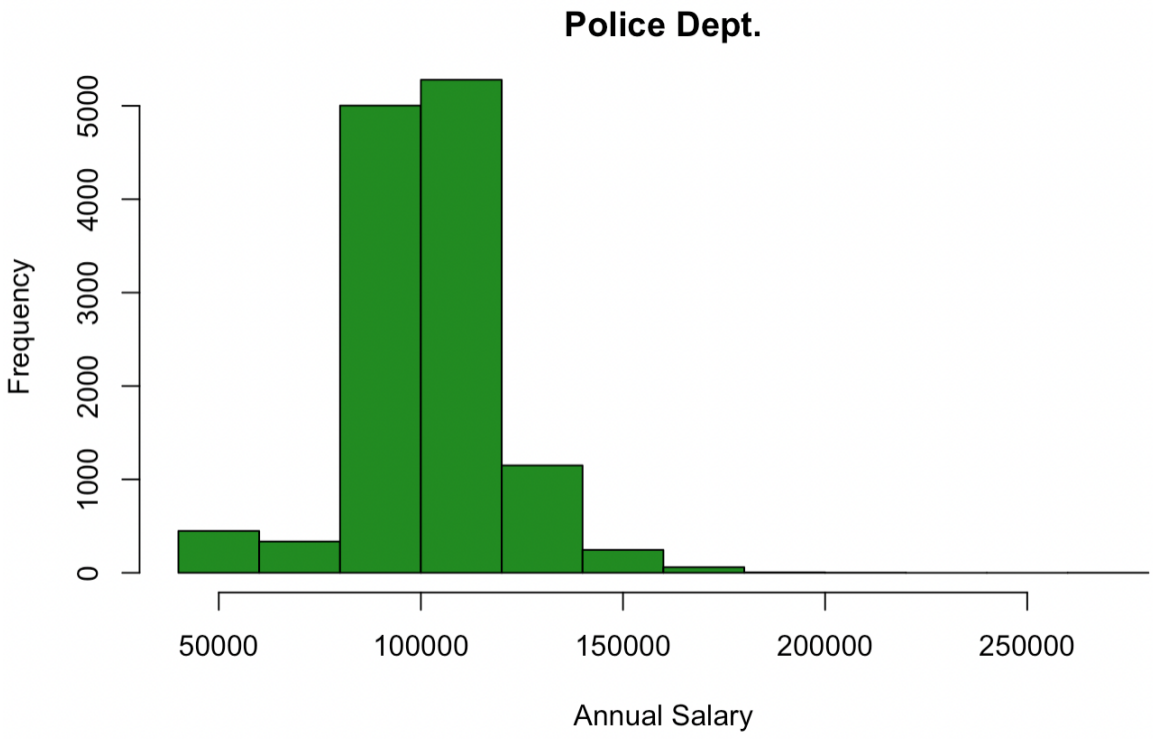
Government Worker Salaries

Question: How much of our tax money goes to government workers' salaries?

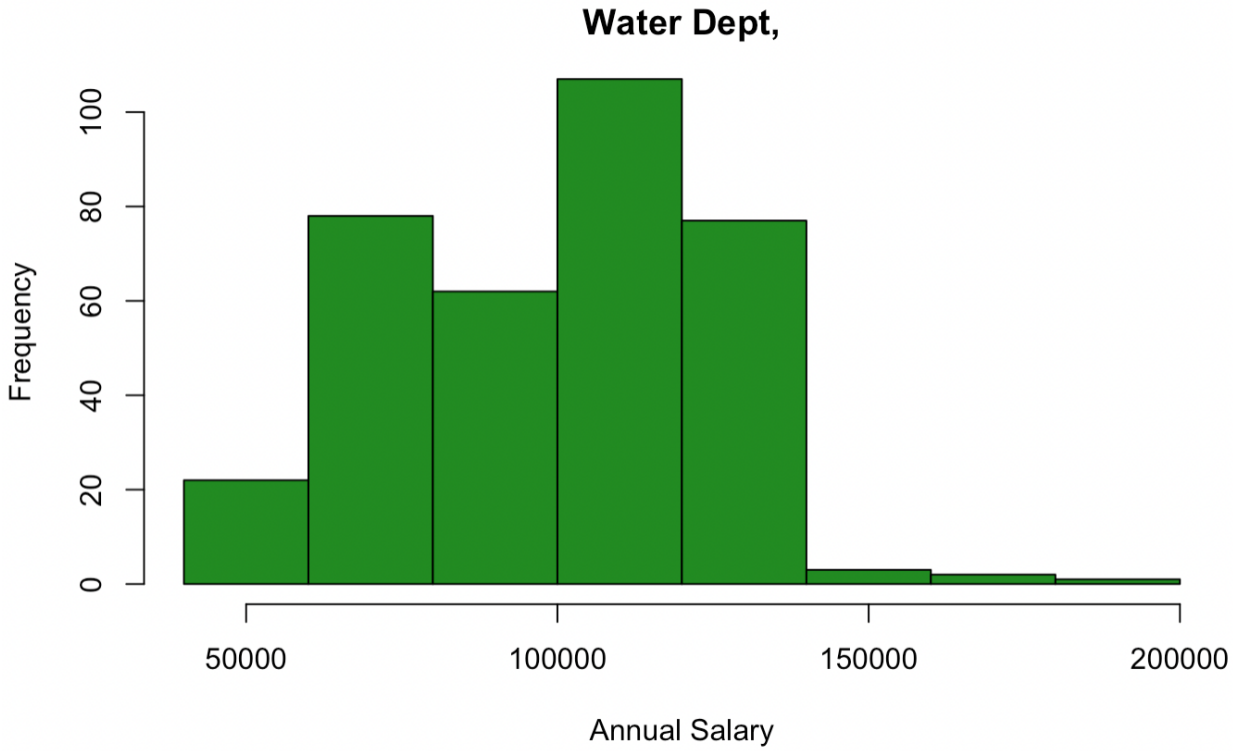
Have you ever wondered how much money goes to government workers? Or have you ever wanted to work for the government? With the dataset I have acquired, I could answer those questions. I got this dataset from Chicago Data Portal which gives the public access to government data such as salaries, crimes, and even food inspections. This dataset is important to me because it answers my question about government workers' salaries. I have always wondered how much they made because the government always has some way of providing incentives to join their workforce. The dataset that I used includes the employee's name, annual salaries, hourly salaries, position titles, departments, full-time or part-time, hours per week, and hourly rate. It includes the data of 30,018 government employees in various departments varying from the police department to the library department. I won't be able to cover all the departments because there are 36. Instead, I analyzed the five departments with the highest amount of workers. They are the aviation, fire, water, police, and transportation departments.

Starting off with the police department, we will be looking at the annual salaries of the employees. The average salary is $101,424.9 (not including hourly paid workers) which is quite a lot but keep in mind that his number is for all workers including sergeants and job positions in

the police department that receive greater compensation. The job position of police officers houses the most employees. There are 8,876 police officers and they make up 70% of the police department. The minimum salary is $54,672, median salary is $95,586, mean salary is $96,397, and max salary is $109,236. Compared to the average salary of the entire department, the mean of the police officers isn't quite off so they are still making around $95,000-$100,000. To obtain this data I filtered the job title and used the function nrow() to find the number of police officers and total workers in the police department which allowed me to find the percentage of police officers in the department. I also used a summary to find the min, median, mean, and max salaries.

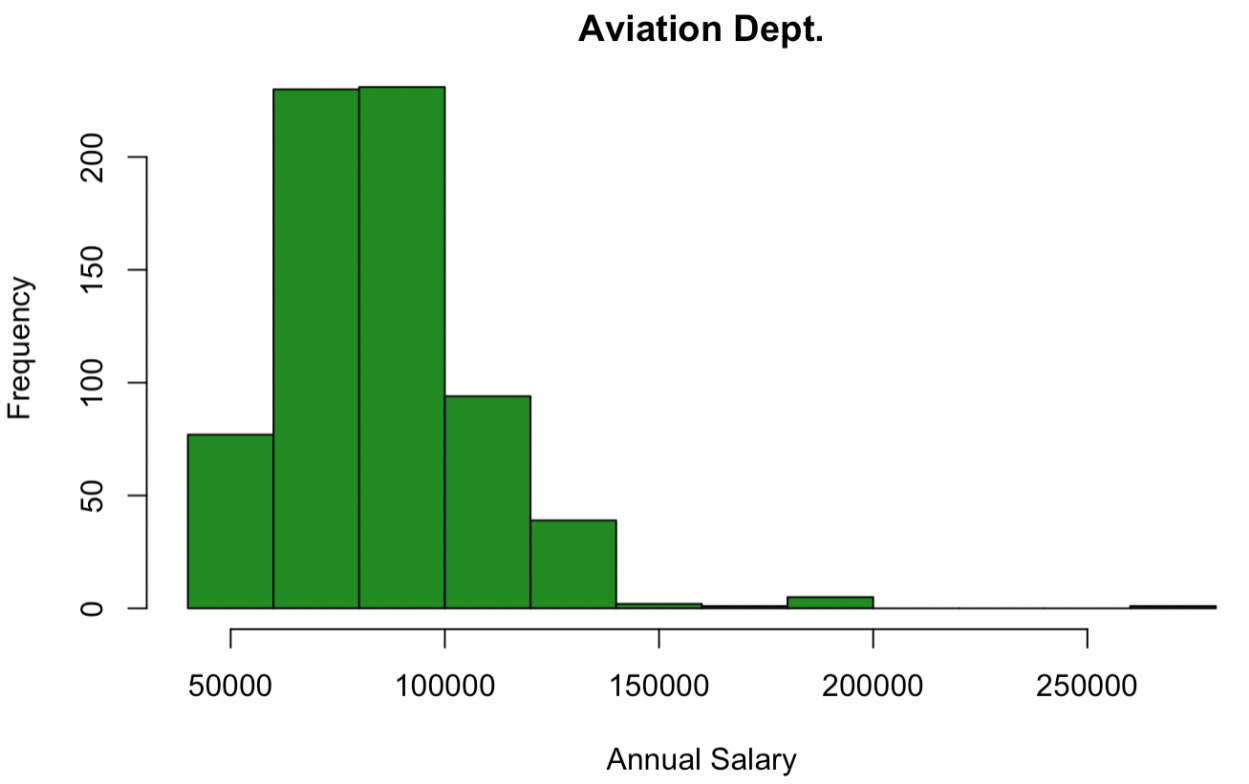


Secondly, I looked at the water department. The average annual salary is $99,142.44, not including the hourly workers. There are a total of 1,825 employees in this department with 412 of them working as construction laborers. They makeup 22.5% of the department and only make $45.9 or $40 per hour. Those two hourly rates were the only ones available for construction laborers and they work 40 hours a week. If they were to work for the entire year their annual salary would be $83,200 or $95,472 which is pretty close to the salaries of police officers. I found this data by using the summary(), nrow(), and my own custom function.

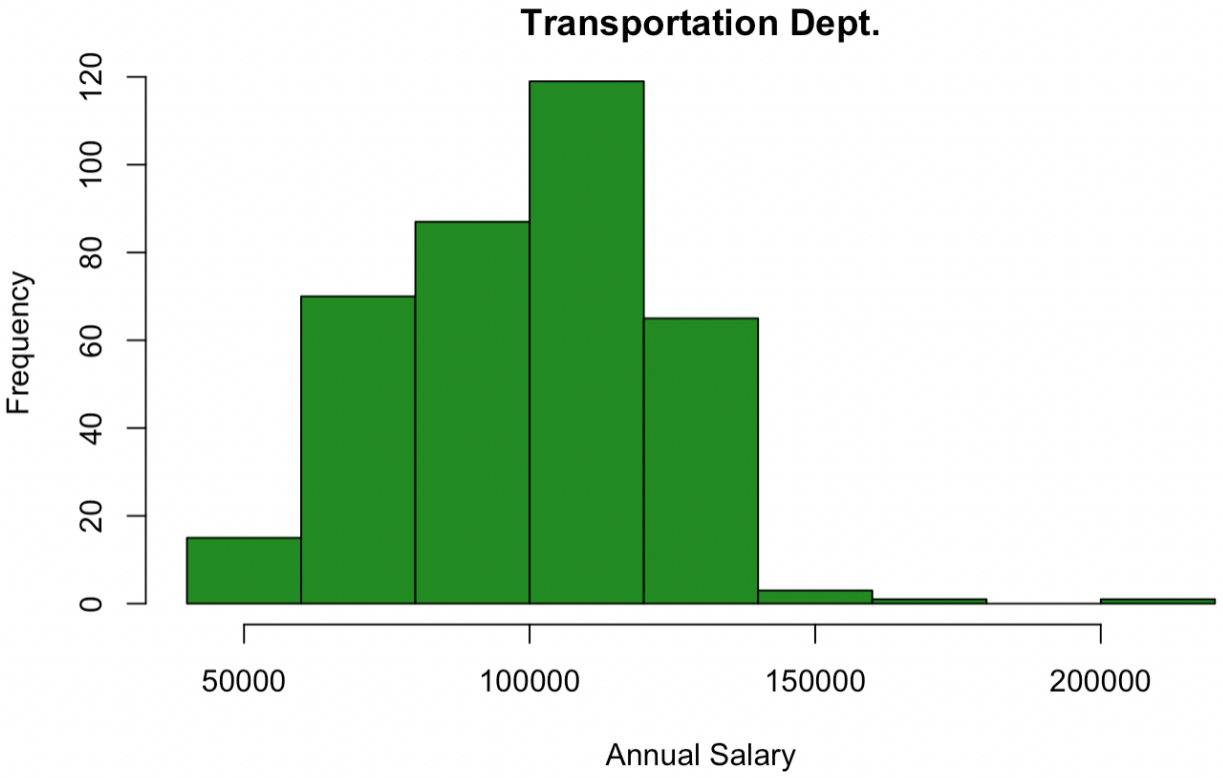


Next, I analyzed the aviation department. The average annual salary is $84,585.2 not including the hourly paid workers. In the aviation department, I looked at pool motor truck drivers (their job is to operate motor vehicles and power equipment). They make up 19.24% of the aviation department and have 349 employees. They are paid hourly with a minimum of 10 hours, a median of 40 hours, a mean of 39.91 hours, and a max of 40 hours. The hourly rate

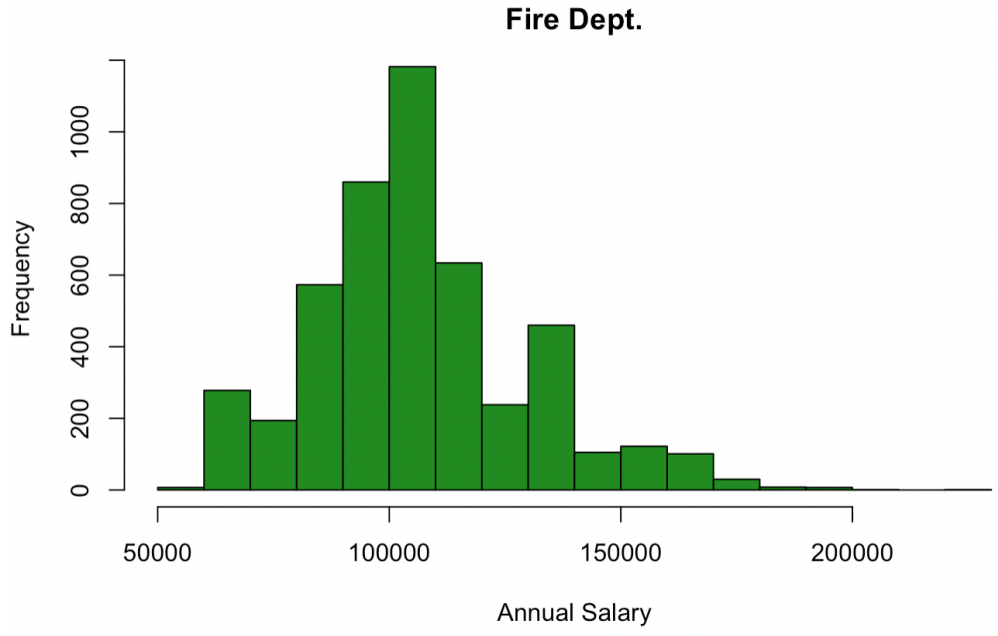
minimum is $21.73, the median is $39.25, the mean is $37.31, and the max is $39.25. I used the filter, row count, and summary function to find these numbers.



After the aviation department, I analyzed the transportation department. The average annual salary is $100,408.4 not including hourly paid workers. I looked at the job position, of concrete laborer because they were paid hourly. They made up 9.9% of the transportation department and had an hourly rate of 45.9 and 40 with a total of 109 workers. I used filter, nrow, and summary to analyze this data.



Lastly, I analyzed the fire department. I looked at three job positions and they were firefighter EMT, firefighter EMT (recruit), and lieutenant EMT. They made up 28.3%, 15.3%, and 8.4% of the fire department respectively. For firefighter EMT, their mean salary was $102,373, firefighter EMT (recruit) mean salary was $76,615, and lieutenant EMT mean salary was $131,554. I used filter, summary, and nrow to find this information.



I also found out that the sum of all annual paid workers is $2,398,361,625 and the sum of hourly paid workers is $507,050,619. That is an astounding number, but for more than 30,000 workers it makes sense. From my analysis of the five different departments, I found the minimum, median, mean, and maximum salaries of the employees from different job positions. The amount of money they made yearly/ hourly surprised me because they are making quite a lot of money. Another interesting discovery is that we have 8,876 police officers and 1,178 police sergeants in our police force.

I would like to do a more in-depth dive into one department such as the police department and look into all the job positions and compare them. Although I am not excited to do that it is something that I could do to learn more about the structure of the police department with the various job titles they give to their employees. Another project I would be interested in doing is an analysis of trending products. I am interested in making money and I've seen dropshipping and eCommerce everywhere. If I could analyze data for those products and have an algorithm that can find the success of the product that would be both amazing and practical because I could try selling that product online and of course make $$$.