1. sh -c make -s
   ./main
   rm sum: 3180.03
   medv sum: 11401.6
   rm mean: 6.28464
   medv mean: 22.5328
   rm median: 6.2085
   medv median: 21.2
   rm range: 5.219
   medv range: 45
   Covariance between rm and medv : 4.49344
   Correlation between rm and medv : 0.69536

2. I realized that using R's built-in functions is a faster and easier option than implementing my own functions in C++. This is because R was designed as a statistical programming language with numerous built-in functions for statistical and data analysis applications. The R syntax is also user-friendly and simple for those without programming experience. However, if I need greater power and efficiency, especially for activities involving significant quantities of data or complicated computations, I may choose to develop my own C++ functions. This language offers more flexibility and customization choices, but it requires a thorough comprehension of programming ideas and a higher degree of technical competence.

3. Mean, median, and range provide me with a notion of how my data appears.

   To get the average of all the values in my dataset, I use the mean. I compute the mean by putting all of the numbers together and dividing by the number of values. I like the mean, however, it can be influenced by any really high or low numbers in my sample.

   When all of the values in my dataset are placed in order, the median is the middle value. I use the median to determine the center value of my data. The median, unlike the mean, is unaffected by high or low values in my dataset.

   Finally, I utilize the range to calculate the difference between my dataset's top and lowest values. The range lets me know how spread out my data is and helps me find any outliers.

   Overall, these descriptive statistical metrics are crucial for me to grasp as a data explorer since they help me understand my data and make pre-processing decisions.

4. To understand the link between two features in my data, I use covariance and correlation statistics.

Covariance is a measure of how two qualities evolve in tandem. When the values of two qualities rise simultaneously, the covariance is positive. If the values of one property grow while the values of the other attribute drop, the covariance is negative. And if the values of the two qualities do not appear to change together, the covariance is close to zero.

In contrast, correlation is a normalized form of covariance. It represents the strength of the association between two traits and spans from -1 to 1. A correlation of -1 indicates that the two traits have a strong negative association, a correlation of 1 indicates that the two attributes have a strong positive relationship, and a correlation close to 0 indicates that the two attributes have no relationship.

This knowledge of the link between two qualities may be quite beneficial in machine learning. For example, if I know that two traits have a strong positive association, I would wish to predict the other using one of the attributes. Alternatively, if I know that two qualities have a significant negative association, I may want to avoid combining them in my machine-learning model.

Overall, covariance and correlation provide useful information about the relationship between two qualities in my data, allowing me to make more informed judgments about how to use the data in machine learning.