Output of Code:

```
*****Stats for rm:*****
Sum of rm: 3180.03
Mean of rm: 6.28463
Median of rm: 6.2085
Range of rm: 5.219

*****Stats for medv:*****
Sum of medv: 11401.6
Mean of medv: 22.5328
Median of medv: 21.2
Range of medv: 45

Covariance = 4.49345

Correlation = 0.69536
```

Although using the built in functions in R is quick and simple, there is no requirement to understand the process being undergone to achieve the result. However, by coding the functions in C++, a deeper understanding of why and how the functions work can be achieved. Ultimately, it is helpful to code the functions once to understand them and then use them in R.

The mean of a dataset is also known as the average, and it is computed by adding all the data values together and dividing the sum by the number of data values. The median is the middle value of the dataset when it is sorted from smallest to largest. The range of a dataset is the difference between the largest and smallest values. Prior to machine learning, these values were useful for data exploration because they gave a brief overview of the dataset. By computing the mean, scientists could understand the average of the data and compare it to the median, while also calculating the range to determine if the spread of the data was large or small.

Covariance calculates how changes in one variable impacts changes in another variable. It is calculated by the [summation of (each value of one dataset - the mean of the dataset) * (each value of the other dataset - the mean of the other dataset)] all divided by (the total number of data values - 1). Correlation, on the other hand, scales the covariance between [-1 and 1]. It is calculated by dividing the covariance between two variables by (sigma of one variable * sigma of the other variable). This information is useful for machine learning because it calculates if two variables are related to each other, which can further be used as a baseline when testing other datasets in order to create pattern recognition.