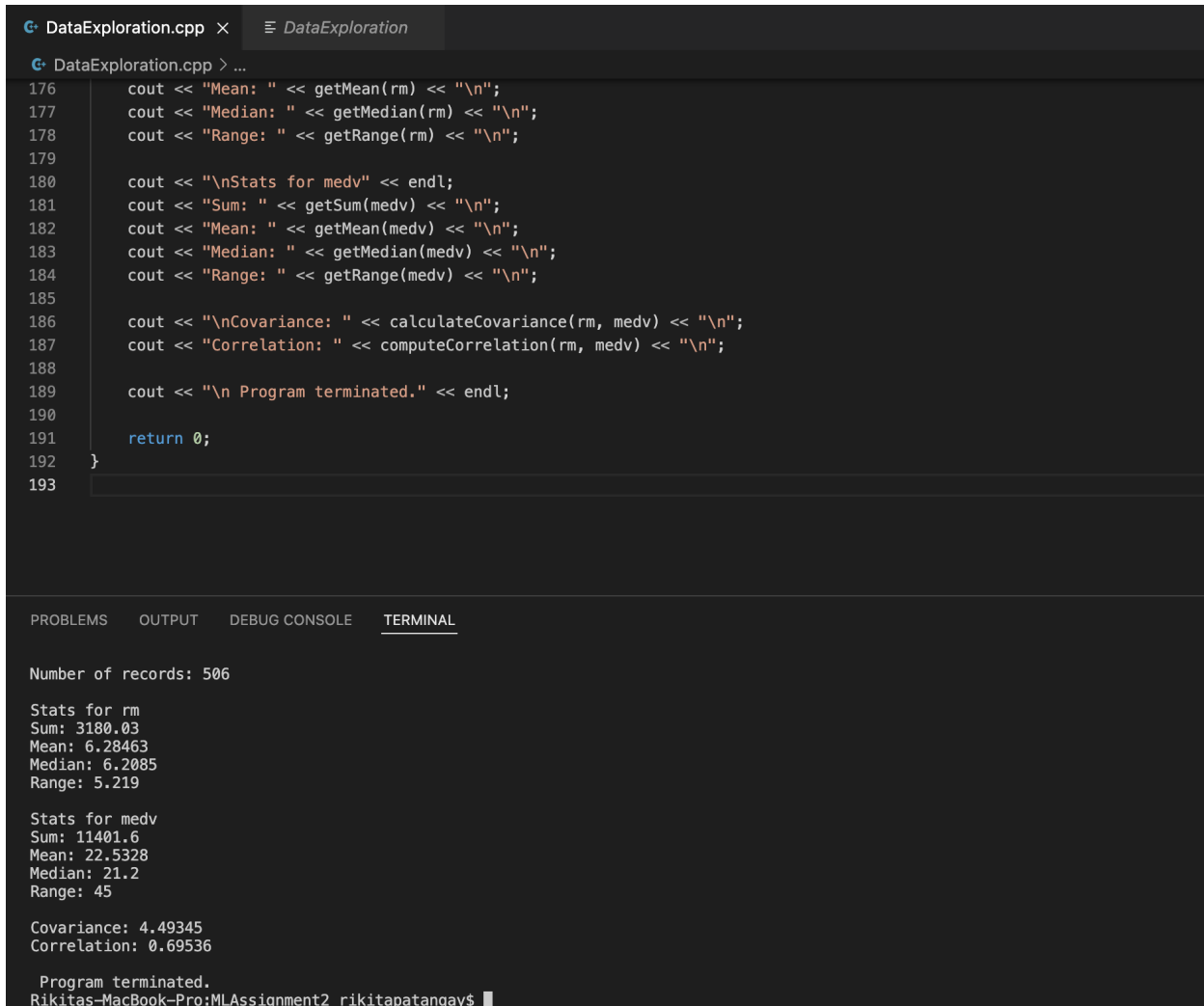


Portfolio Component 1: Data Exploration

a.



```
176     cout << "Mean: " << getMean(rm) << "\n";
177     cout << "Median: " << getMedian(rm) << "\n";
178     cout << "Range: " << getRange(rm) << "\n";
179
180     cout << "\nStats for medv" << endl;
181     cout << "Sum: " << getSum(medv) << "\n";
182     cout << "Mean: " << getMean(medv) << "\n";
183     cout << "Median: " << getMedian(medv) << "\n";
184     cout << "Range: " << getRange(medv) << "\n";
185
186     cout << "\nCovariance: " << calculateCovariance(rm, medv) << "\n";
187     cout << "Correlation: " << computeCorrelation(rm, medv) << "\n";
188
189     cout << "\n Program terminated." << endl;
190
191     return 0;
192 }
193
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Number of records: 506

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

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

Covariance: 4.49345
Correlation: 0.69536

Program terminated.
Rikitas-MacBook-Pro:MLAssignment2 rikitaatangay$
```

b. Using built-in functions with R v.s coding my functions in C++ was challenging. It is a lot more complicated but coding your own functions can help you understand the structure of the problem you are trying to solve. Also, the different components that makeup what you are looking for.

c. Once you understand the concepts of what mean, median, and range mean in regards to the data, it is simpler to code functions that can achieve these values. They are all used collectively to help us get some information about the data and what it is saying to us. Using these statistical measures we are able to get a quick look into what the data is telling us. You are able to imagine the distribution of the numbers.

d. Using correlation we are able to see how values behave with each other and how they are related. It describes how one variable is affected in relation to another one. Covariance shows us how two variables vary together and how when you change a value the others get affected (skewed).