# Obstacles:

One of the obstacles I had to overcome while writing this program was that C++ does not automatically initialize integer variables to zero; I had declared but not initialized my *totalCost* variable, so when I added values to it later using *totalCost +=* I ended up with unexpected values. Fixing this was relatively simple—when I declared *totalCost*, I also initialized it to 0. Another obstacle was having the program print out the rental charge correctly, with two digits to the right of the decimal point. However, the code to fix that and set the decimal precision of cout has been covered in class and was exemplified in the last project, so I added the lines *cout.setf(ios::fixed)* and *cout.precision(2).*

# Test data:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Case | Reason | Odometer at start | Odometer at end | Rental days | Customer name | Luxury car? | Month |
| Given case #1 (Elon Musk) | To test if the program handles non-winter, non-luxury, and between 100 and 400 mile cases correctly | 2417 | 2754 | 4 | Elon Musk | n | 10 |
| Given case #2 (John DeLorean) | To test if the program handles winter, luxury, and under 100 mile cases correctly | 1885 | 1973 | 1 | John DeLorean | y | 2 |
| Test case #3 (over 400 miles) | To test if the program handles cases over 400 miles correctly | 12 | 669 | 5 | me | N | 1 |
| Negative starting odometer | To test the negative starting odometer reading case | -1 | 10 | 2 | Jack | n | 1 |
| Decreasing odometer reading | To test how the program handles a decreasing odometer reading | 300 | 200 | 1 | And | n | 2 |
| Non-positive rental days | To test if the program handles non-positive rental days correctly | 12 | 13 | 0 | Jill | n | 7 |
| No customer name | To test if the program handles an empty string for name correctly | 0 | 325 | 2 |  | n | 5 |
| Abnormal luxury status | To see if the program correctly handles bad luxury status | 89 | 998 | 3 | Up | The | 4 |
| Invalid month value | To see how the program handles a month value that is not 1-12 | 789 | 987 | 123 | Hill | y | 554 |