Rationale:

Data collision is when two or more different sources are trying to access to same data at the same time. While the data is processed by one source, the other source accesses the data and changes its value. This will cause the other source to work the wrong value which eventually gives a wrong data. In this part of the assignment, it will test whether data collisions can occur when multiply threads are accessing the same data. Since threads are shared the same data with other threads in the same process, it mostly like to the cause a data collision. The goal of this assignment is going to be writes a program with multiple threads accessing the same data and compare the calculated final value with the expected value.

Method:

In the program that is written, it has three different classes. One of them is the main class and the rest are thread classes. In the main class, it has a type long static number that will be accessed by the threads, the main class also starts up all the threads. There are two types of threads, the first is adding one to the number for 100000 times and the other thread is subtracting one from the number for 100000 times. In the main class, it will start up two different types of threads at same time for certain amount of times. After all the threads are starts, it will wait for them to finish and then it will print out the final value of the number.