Stats Library

Stats Library was a project we were challenged to keep up with throughout the whole semester, as we learned formulas in class, we were tasked with making those formulas work with code. With that being said, the StatsLibrary program provides a wide range of formulas from mean, median, mode, standard deviation, 1.2 (axioms 1,2,3), calculating the prob of the union, 2.10, 2.11, 3.4, 3.5, 3.7, and 3.8. Going into a further breakdown of methods I implemented was to check the validity of probabilities, test for mutually exclusive events, and calculate conditional probabilities. Some newer features we are just starting to learn about include computing the binomial and geometric probabilities, along with the expected value and variance of random variables.

The StatsLibraryTester is a class created to test all these functions using a list of multiple different numbers and a variety of probability related examples. It computes the mean, median, and other statistical measures, while also testing probability axioms and event independence. The library outputs result for various probability tests, such as conditional probability and binomial probability, showcasing how these statistical concepts are applied.