This programming assignment provides a client with useful fuel mileage information pertaining to their vehicle and a possible trip they may take. The application will ask the user about the fuel economy of their vehicle, along with the distance of the trip, and the amount of fuel in the vehicle. With this information, the server will determine how much fuel will be left inside the vehicle, and the server will also determine how far the vehicle can possibly travel to the destination. Additionally, a small diagram will be shown, demonstrating how far the vehicle will get it to the destination.

The underlying architecture of the application makes use of multithreading on the server in order to use the system's resources efficiently. Additionally, the client and server communication is handled via Java sockets. The program is able to handle continuous client requests until it is manually terminated. The results of the trip can be saved in a text file for retrieval later on.

Though, the project consists of some challenges which were overcome. One of these problems was parsing the correct values entered by the user. This was solved by sending the user input to the server as a string and then parsing it into its correct type. Another issue was figuring out the logic on how to print a small diagram illustrating how far the vehicle can possibly travel. This was overcome by physically drafting out the problem and solving each portion step by step, using some basic math and logic. Another small problem that occurred was how to handle a user event when they are prompted to log the results to a text file. This was completed by using a Boolean flag and an "if" statement. A major roadblock was implementing the GUI; many small event handling issues and such needed to be solved. Much time was spent referencing the Java documentation, though, this feature was chosen not to be implemented – all input and output was handled through the command line.