Socket Programming Research & Async

For the next sprint in our project, we needed a way to effectively transmit data from our server (the desktop application) to the clients (the remote vehicles). To do this, we needed a way to internally program the application to find the clients themselves, and then add data to the form of a packet to transmit individually. In coming with a solution to this problem, we learned about the fundamental idea of socket programming where as we bind a port socket to the thread of the application and then send the data over that port to specific IP. Stack overflow provided plenty of examples that were similar to what we ultimately needed to use.

<https://stackoverflow.com/questions/21549963/tcp-server-c-sharp-on-windows-tcp-client-python-raspberry-pi>

Furthermore, we also needed a way to program the application to send a multiple messages uninterpreted in the backward, or asynchronously on their own thread. In order to approach a task like this, I began to research the topic specially related to networking with socket programming with an EOF model basis and found Microsoft’s example of their implementation of how to both send and receive data in async.

https://docs.microsoft.com/en-us/dotnet/framework/network-programming/asynchronous-server-socket-example