Map Backend

- Leaflet is an open source javascript library that can be utilized to implement the backend functionality of displaying live geo-location and displaying routes on the map. It is compatible with open street maps which we will be using for the mapping of our golf cart.

Node Serial Communication

- Create new Node project with *npm init*
- Install the Node serial port package with *npm install serialport*
- Create two js applications: one to send over the serial channel and one to receive
- In the send application:
  - Declare a variable assigned to the serialport package
  - A new serialPort variable can now be created using the serialPort package constructor *SerialPort* with port name as an argument. In this constructor the baud rate will be specified.
  - In the previously declared variable, you can utilize the .write() method with the contents of the message to send as well as an error function.
- In the receive application:
  - Declare a variable assigned to the serialport package
  - A new serialPort variable can now be created using the serialPort package constructor *SerialPort* with port name as an argument. In this constructor the baud rate will be specified.
  - In the previously declared variable, you can utilize the *.on* method with passing the string "open" as an argument and passing an empty function. This method opens the connection.
  - The same method can be utilized with the same "open" argument and a function with the data as a formal parameter utilized as actuals. This command receives the data.
- Both programs can then be run to send the data: the receiving app should be run first.

Notes

- Virtual COM ports can be utilized to practice serial communication within Node.
- The *@serialport/parser-readline* package to make the serial communication easier to work with rather than receiving the raw serial data.
  - If this package is used, you can just utilize the pipe method with your port, passing in *parser* as the argument to the method.
- When defining the serial port, the Com port name can be found by going into device manager. The baud rate can also be found in the details of this device.

References

[Serial communication with Node.js (bhuvaneswaran.com)](#)

▶️ How to Communicate With the Serial Port in Node.js

https://leafletjs.com/#features