

STUDY OF INTER-COMPONENT COMMUNICATION PROTOCOLS IN ELECTRIC TRUCK PHASE2



CONTROL SYSTEMS AND INSTRUMENTATION ENGINEERING PROGRAM

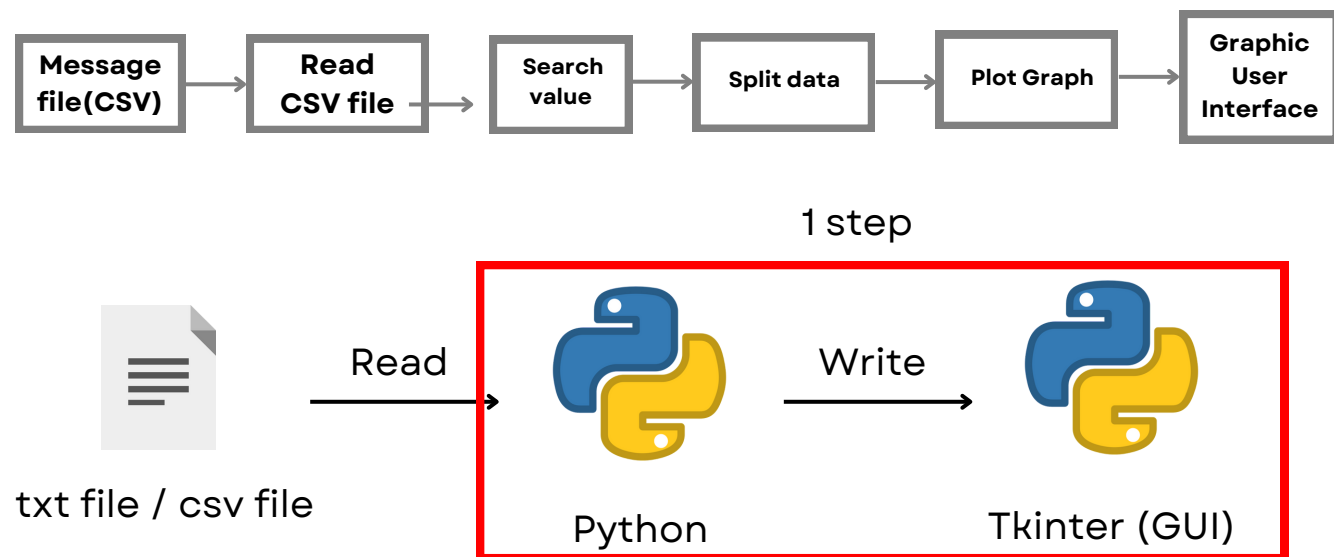
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Abstract

The objective of this project is to create a support program for testing of electric trucks. The test used a USB-to-CAN adapter to read the vehicle log data files from a CAN bus connection port and saved them into text files. The previous-version program had two parts: the parser part, which separate raw data into separated fields, and the graph part, which plot historical data in a time axis. The new program was improved by integrating everything into a single part and written in Python to support 1-click operation.

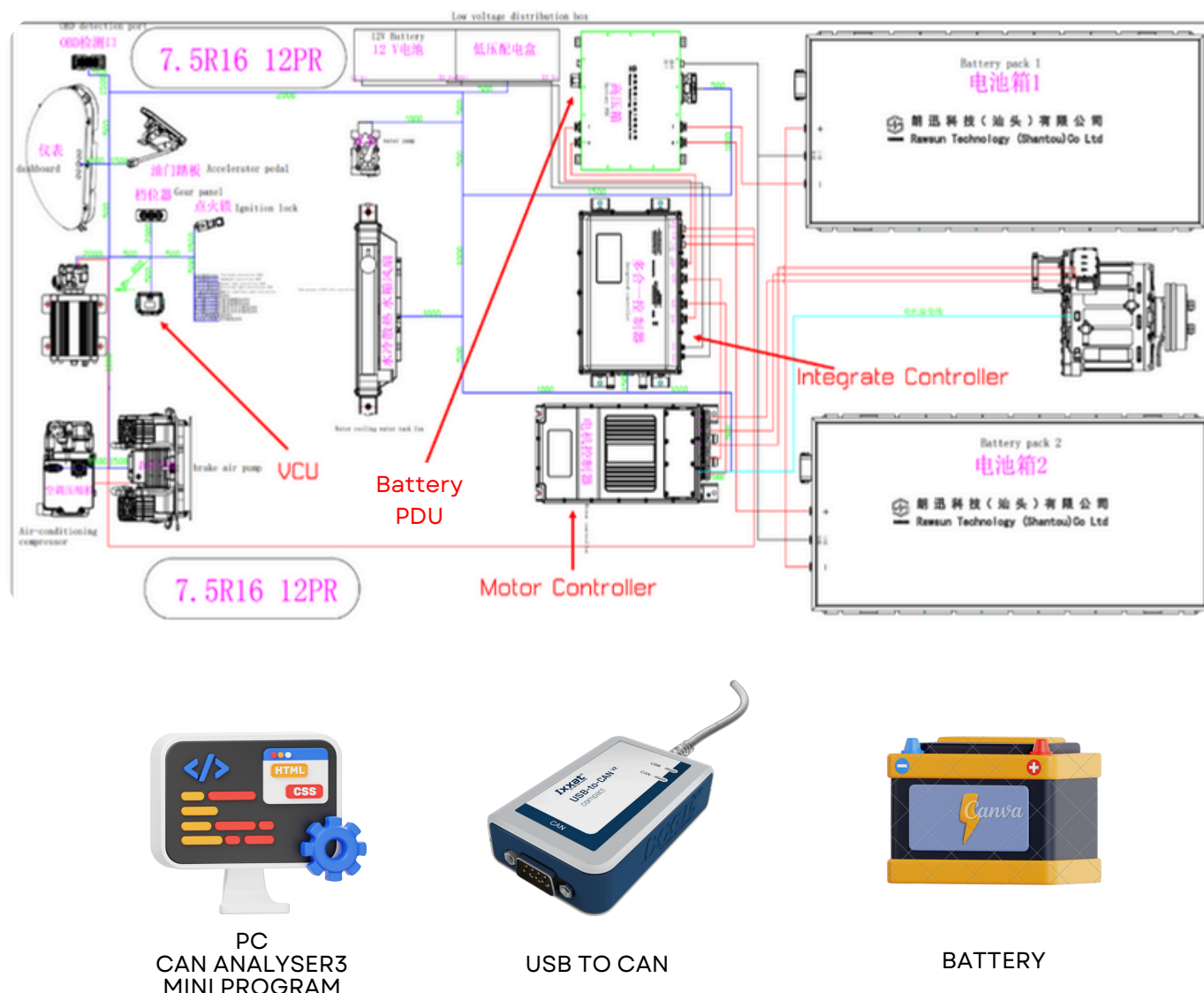
Methods

The diagram of coding to read csv file of message



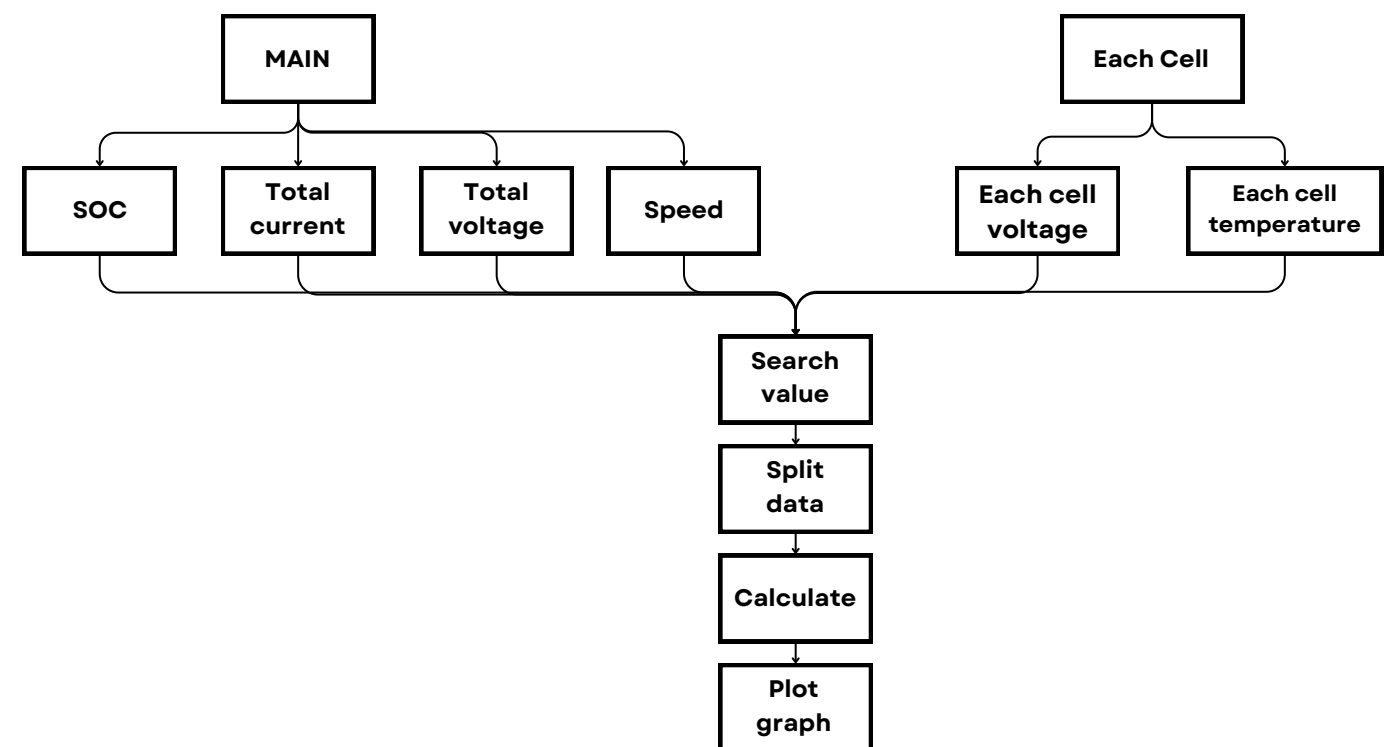
We use python to analyze data from CAN bus messages. Then using tkinter to create Graphic User Interface for display values and graph.

Data Analysis

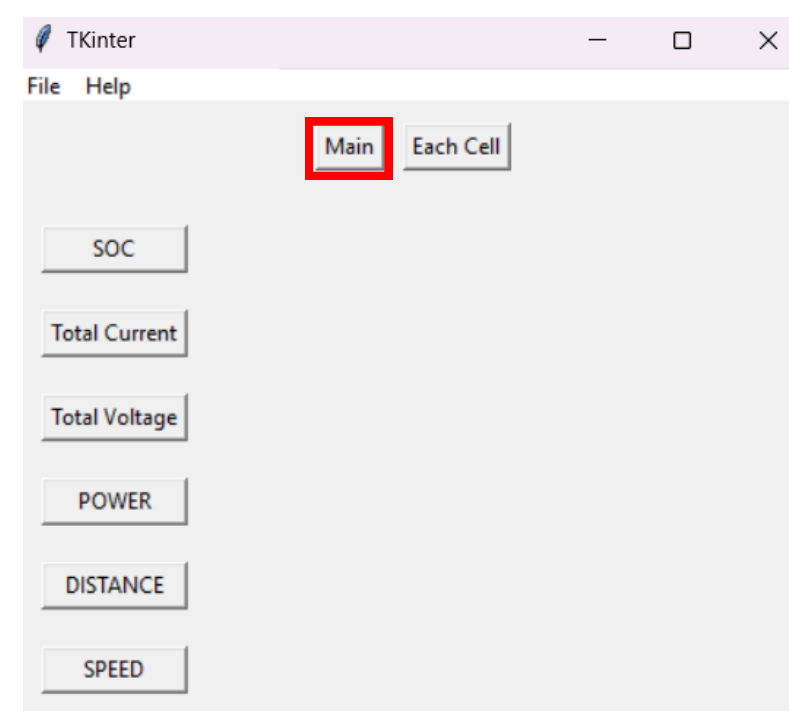


Connecting wire and communication cables to systems and components. We use a CAN analyzer to connect to the communication line to read CAN bus message.

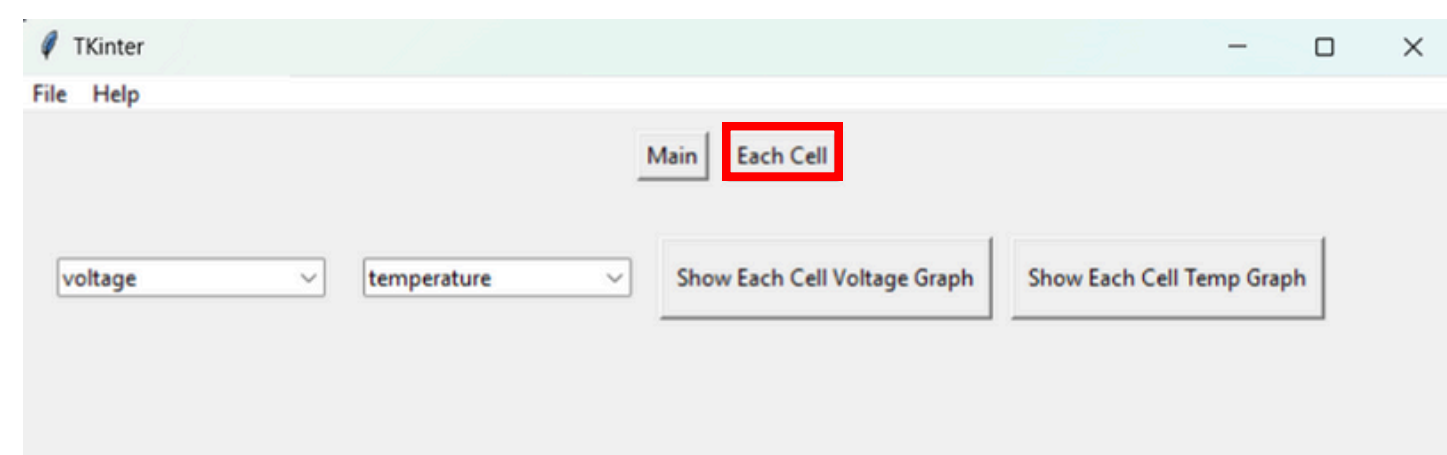
Graphic User Interface



This is the diagram of the system. First, it reads a CSV message log file. The main part has SOC, Total current, Total Voltage, and speed to be displayed. The each cell part has voltages of 156 cells and temperatures of 32 positions. Then, the program searches for the specified ID, splits the data into individual bytes, calculates the data, and plots the graph.



- SOC
- Total Current
- Total Voltage
- Speed



- Each Cell Voltage
- Each Cell Temperature

