Program to Operate Waveform Generator

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Abstract

During my internship, I developed a user-friendly program to control a waveform generator using SCPI commands.

Key Features:

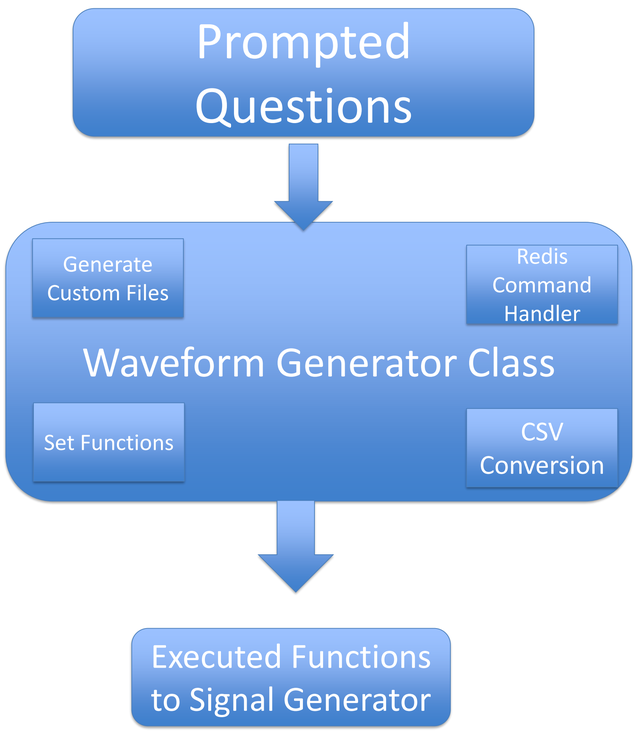
•**Interactive User Prompts:** The program guides users through various options, enhancing ease of use.

•**Direct File Downloads:** Users can download files directly from their computer to the waveform generator.

•**Beam Signal Emulation:** The program allows for outputting signals that are recorded from an oscilloscope by converting csv to binary then sending the commands out to the waveform generator.

A picture of the different waveform types that can be manually inputted instead of using a file.

Here you can also see the different variables you can change on the machine such as amplitude, frequency, offset, and phase accompanying the waveform that's chosen



Methods

-Used a class that holds all the functions necessary to work with different manual components of waveform generator.

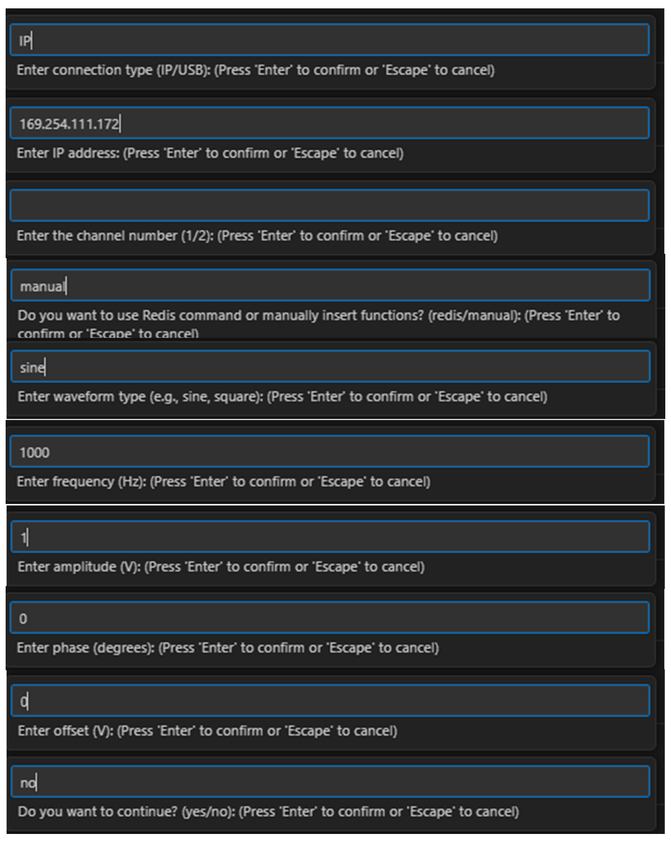
-Applied SCPI commands, which are supported by the machine, to control components on the machines.

-Converted .csv files received to binary to be able to send file directly to machine.

-Stores data to reduce repetitiveness.

Results

-Code is completely finished and cleaned up.
-With the utilization of SCPI commands, code can run with a multitude of machines
-Created a github so that anyone can download and use the code(Link with QR code at the bottom)



Here are a list of questions asked of the user

Conclusion

The end result of this project went better then originally planned. I was able to include some additional functionality including prompted questions as well as send functions from another machine.

Link for github:
https://github.com/Manzo111/Signal-generator.git

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