A Simple Intel Galileo-based Embedded Web Server and Its Application

Spring 2018

CS 4000: Individual Studies in Computer Science – Intel Galileo based Embedded Web Server

For my individual studies project I worked on an Intel Galileo system that decodes and encodes Morse Code characters via either a pushbutton user interface or a web interface with the Intel Galileo serving as the server.

I began working on this project at the very beginning of it, by learning how to use an LCD screen that is connected to a daughterboard. Next, I learned how to use what is called a momentary pushbutton to send Morse Code characters, to which the board would then send Morse Code characters to the LCD screen. Next, I had to decode those Morse Code characters during runtime. To help do so, I designed a hybrid algorithm of the Finite State Machine algorithm that uses time tracking, a table and string operations to design such an algorithm. Next, I would be tasked with turning the Intel Galileo board into a server in order to serve a web page to the client in which the web page serves as another interface to the system in order to decode and encode Morse Code characters. This was a very challenging undertaking for me because I had previously never programmed my own web server before. I also didn't understand much about web servers and was surprised that such a small device could be a web server.

However, thanks to the weekly meetings with Dr. Lim, he explained to me that servers are nothing more than computers that send data to other computers. As such, an Intel Galileo board that sends a web page to the client is a server.

In conclusion, I am very satisfied with the hands-on experience with and technical knowledge I gained with a topic that I found very interesting. In the future I look forward to keep working with embedded systems on my spare time.

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