**Software Recruiting – Take Home**

Emerson wants to learn more about your work-related skills and abilities. I encourage you to frame this assignment not as a pass/fail but rather a show-and-tell of your hard skills. We've chosen a task that should take a couple hours and hopefully a little fun. Feel free to write it in any style you like. We are looking specifically for code that is human-friendly. While not required, if you take steps that you normally would when writing production code we'll take that into consideration too - for example creation of a makefile or equivalent, tests, documentation, committing under source control, etc.

The assignment will be completed remotely at your convenience, and we expect the assignment to take 3-5 hours to complete.

Please complete the assessment by Tuesday, January 11th or let me know if you need more time. Don't hesitate to reach out if you have questions.

**Take Home Assignment:**

Build a simplistic pub/sub implementation with a client and server in any programing language or framework of your choice. The client and server should communicate over TCP.

It is fine if the client exists purely as unit or behavior tests for the server, it does not need to be a stand-alone project or have a UI.

The pub/sub implementation only needs to implement 2 commands:  
 1. a “publish” command that publishes a message to a channel  
 2. a “subscribe” command which listens to a channel for messages.

Rather than implementing a command for creating channels, you can either create them on the fly during publish or subscribe, or provide a default list of channels. Either approach is fine.

The protocol for commands can be as simple as you like. Simply sending ascii characters back and forth delimited by \r\n is sufficient for this exercise.