

Goal for exercise – “System Integration”

Get comfortable having the raspberry pi and Arduino communicate with each other using the I2C protocol and be able to display messages on the screen that coincide with data measured by the Arduino.

Are you aware of any kind of communication protocols? If so which ones and specify one instance of their applications.

I am aware that for raspberry pi and Arduino communication there are two protocols, SPI and I2C, which was used in this assignment. I2C is slower and requires acknowledgement bits but allows for there to be more slaves, while SPI is faster but can only have one slave. Both are useful in their own applications but for this class we will be using I2C.

List all resources and what specifically you used or learnt from that resource to complete the challenge exercises.

Arduino.cc- To learn how to use the different libraries

Oscarliang.com – Basic Arduino Raspberry Pi I2C

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Compile a list of all documentation created. Provide file name and a short description of that file.

Assignment 2 Documentation.pdf – Documentation including code for all exercises and answers to the questions posed in the instructions.

List any challenges you faced when trying to establish communication between the LCD and the Pi or 2-way communication between Pi and Arduino. Clearly explain how you solved the problems you faced and debugging methods you used to resolve the issue.

I had a difficult time getting the Arduino and Raspberry Pi to properly talk to each other. It took a lot of time to figure out what I needed each function to do for the raspberry pi and then having them wait to allow proper communication. Additionally, I had trouble connecting the Raspberry Pi to my computer to allow for easier interaction, but thanks to my group member Mark I was able to connect my laptop to the pi and demonstrate my assignment easier.

On a scale of 1-5, how comfortable are you with the I2C communication protocol? (1 being least comfortable and 5 being most comfortable).



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