**Lab2-1**

* Mismatched data type going from Random Source to PSK Mod blocks
  + Changed Random source output to byte from int
  + The PSK Mod block does not accept an int as input, so the only option is to change the output of the Random Source block

Diagram

Description automatically generated

Figure 1: Lab2-1 Corrected GRC Flow Graph

Chart, scatter chart

Description automatically generated

Figure 2: Lab 2-1 GRC Output

**Lab2-2**

* Missing wire between 2nd Signal Source and Add block
  + Connected the appropriate wire
* Type mismatch between Add block and Throttle block
  + Changed Throttle input to “float” and GUI Frequency Sink to “float” as well
* The signals were changed to “float” because it was simpler, but another valid option would be to change all of them to “complex”. The only main difference in the flow graph would be that a Quadrature Demod block with a gain of 1 would be needed between the throttle and the Audio Sink to convert the “complex” signal to “float”.
* The Throttle block also caused a warning because it isn’t needed, as the Audio Sink acts as a rate limiting block for the stream. However, it did not stop the graph from running and the lab instructions state that no blocks are to be deleted, so it was left in.

Diagram

Description automatically generated

Figure 3: Lab 2-2 GRC Corrected Flow Graph

Graphical user interface

Description automatically generated

Figure 4: Lab 2-2 GRC Output

**Lab2-3**

* Pointer file in File source “Waldo.txt” doesn’t exist
  + Pointed to the only other text file provided in the Lab: “Message.txt”
* Complex type provided by file source can’t be directly read by FFT Sink
  + Modified type at File Source and Throttle to Float
  + Added Frequency Mod block with a gain of 1 to convert to complex frequency
  + Pointing the float output of the Throttle block to Audio Sink also fixed the issue of not being able to read a complex value into Audio Sink

Text

Description automatically generated

Figure : Lab 2-3 GRC Corrected Flow Graph

Chart

Description automatically generated

Figure : Lab 2-3 GRC Output