Ebrahim Simmons - simmoe1 - 400200042
Bilal Yusuf - yusufb1 - 400185626

Lab 2 Report

fourierTransform.py

- given to us in the lab In-Lab: We wrote our own function for DFT and IDFT by similar to the python code we used in lab 2. It was tested similarly from lab 1 where we computed DFT(IDFT) to check correctness.
- Take Home: array was created going from 2^7 to 2^14. The given functions to generate random samples were used. DFT and IDFT were calculated. And times were measured for how it ran, it was measured to be 0.223 milliseconds the original was 0.150 milliseconds.

filterDesign.py

- In-Lab 1: Similar to Lab 1 we designed our own low-pass filter. Converting the python code to C++ similarly the same was done for convolution.
- Take Home: We created a function for a square wave, using ideas we had come up with in the first lab, even though we ended up using the square function previously. Our duty was set to a value of 0.5, and the frequency was a random integer set between 5 and 20. We called the function and used push_back() to see the output of the square wave.

blockProcessing.py

- In-Lab 1: The same functions were used from filterDesign.py for impulse response and convolution.
- Take-Home: This takehome was similar to the takehome/in-labs from Lab 1. That code was converted from python to C++ for the zi implementation.