Name: Harshil Rajesh Patel Student Number: 35437326

CPEN 311 LAB 3

1. Directory / Path of .sof File:

harshil_rajesh_patel_35437326_Lab_3/rtl/template_de1soc/simple_ipod_solution.sof

2. Status of the Lab:

- LED0 turns on and off every second.
- LED[9:2] indicates the volume/intensity of the audio data being played.
- The pracPICO.psm assembly code compiles successfully.
- When compiled successfully, it generates the PRACPICO.MEM file that I add to the Quartus project.

3. How I Merged Picoblaze into the Lab 2 Solution:

- First, I used the pracPico.psm assembly file from the In-Class Activity to make another Interrupt Service Routine in which the average of the audio data is calculated (for every 256 signals) and output on the LED[9:2].
- The assembly code includes checking for and obtaining the absolute value of the average that needs to be output.
- After, I added two states (interrupt1, interrupt2) to my address_calc.sv FSM (after every flash read as required by the lab).
- In these states, the FSM sends an interrupt_signal to the picoblaze_template module to run the ISR and display the lights on the LED[9:2].
- In addition, the psm file also contains code to make LED[0] turn on and off every second.
- The successful compilation of pracPico.psm created PRACPICO.MEM, both of which I added to the new Quartus project for Lab 3 (along with Pacoblaze files) in order to compile it and load it onto the DE1-SOC.

4. Additional Info

- There were no simulations required for the lab, so the /sim and /doc folders are empty.
- All necessary Picoblaze, Pacoblaze, Quartus, Verilog files can be found in the /rtl folder.