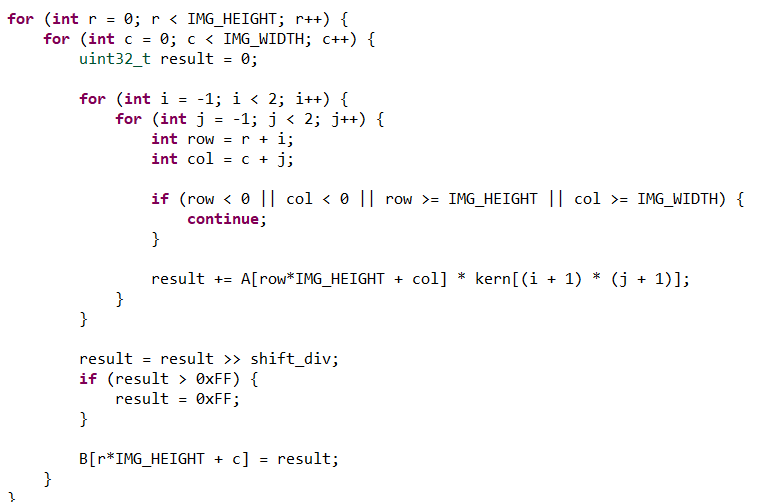
Avery Peiffer

ECE 1195 – Spring 2021

Lab 5 Report

The following report shows a series of images illustrating my completion of Lab 5. The first image shows the code for my sw\_conv function.



The following three images show my code for the hw\_conv function.

Graphical user interface, text, application

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

The next set of images shows the synthesis report for my Vivado HLS code. I was not able to fully attempt the bonus because I ran out of time before having to return my kit, but I tried it and ran into some issues with executing the Linux commands on Putty. Dr. Mahmoud said that this could be because my design uses too many flip-flops and lookup tables.

Graphical user interface, text, application

Description automatically generated

Table

Description automatically generated

Table

Description automatically generated

The next set of images shows my results from running the Vivado HLS code. From left to right, the images are: the original rock image, the software convolution result, and the hardware convolution result. The hardware and software results are blurred to the same degree; this means that the filter was applied in the same intensity to both images.

A mountain covered in snow

Description automatically generated with low confidenceA picture containing outdoor, sky, mountain, valley

Description automatically generatedA picture containing outdoor, mountain, valley, canyon

Description automatically generated

The final set of images shows the HLS code being integrated into a Vivado block diagram. The first image shows the hardware accelerator replacing AXIS\_DATA\_FIFO subcomponent within the ACCEL component. The second image shows the successful bitstream generation, while the third image shows the implemented design that was created from this bitstream.

Diagram

Description automatically generated

Diagram

Description automatically generated

Chart

Description automatically generated with low confidence