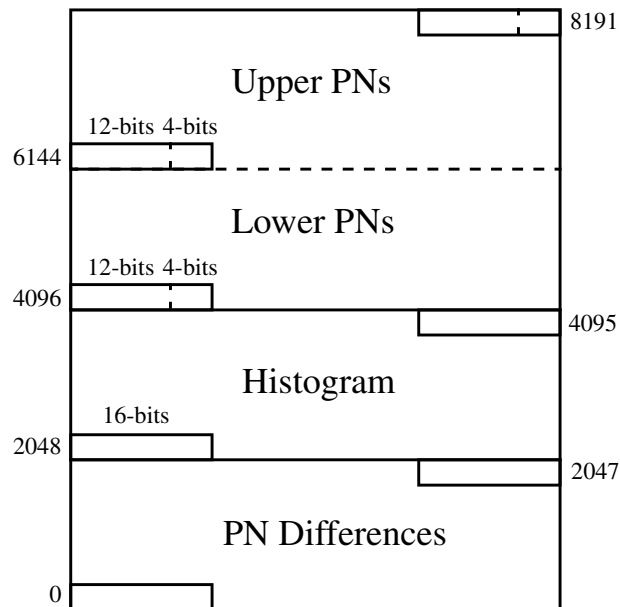


LAB Assignment #1, for ECE 522

Description: Add a module to the HISTO project that computes pairwise differences from the data values stored in the BRAM

Add a module that subtracts pairs of consecutive values from the PN portion of the BRAM as (Upper $PN_{(i+2048)}$ - Lower PN_i) for $i = 4096$ to 6143 , and then stores the results in the lowest portion of the BRAM, labeled PN differences (as shown in the figure below) at positions $j = 0$ and 2047 . Modify the HISTO routine to process a histogram using the PN Differences instead of the PNs as we did in HISTO lab0. Use the data set from the HISTO lab0. The output of your C program should follow the example given in HISTO lab0, i.e., print out the histogram values and the mean and range as the last two values read from the BRAM.



Please consult the laboratory grading criteria for requirements on the report. You must also upload your VHDL code to UNM learn. You may also upload a cell phone video showing your demo if you like.