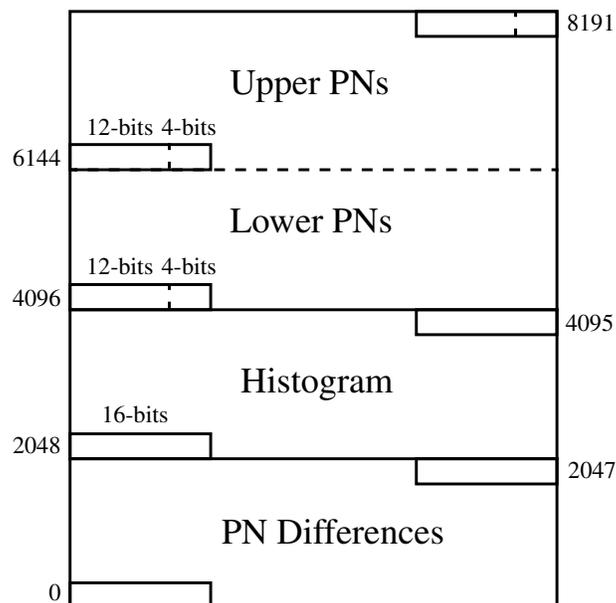


LAB Assignment #2, for ECE 522

Description: Run Vivado High Level Synthesis (HLS) on the LFSR_11Bit design, and add the automatically generated FSMD to your lab#1 project

Modify the project from lab#1 to use the 11-bit LFSR generated by Vivado HLS, as demonstrated in the VivadoHLS_LFSR videos. Instead of subtracting consecutive values in the lower portion of the PN memory, use the output of the LFSR as an address for lower PN to subtract from consecutive upper PN. The expression from lab#1 is revised as follows: $(\text{Upper PN}_{(i + 6144)} - \text{Lower PN}_{(\text{LFSR}(i) + 4096)})$ for $i = 0$ to 2047. Store the result in the lowest portion of the BRAM, labeled PN differences in the figure below at positions $j = 0$ and 2047, as you did for lab#1. Use your HISTO routine from lab #1 to process a histogram from these new PN Differences. Use a seed of 0 and the same data set from 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.