L60: Digital Logic Lab

Note: This work must be completed by the end of the lab on *WEEK OF FEB 29, 2016*

Name: _____ ID: _____

Goals:

1. Be able to use Karnaugh maps.
2. Be able to compute Hamming codes.

Tasks

- Create a circuit that, given 6 data bits, computes the corresponding 4 Hamming checkbits.

Deliverables:

- Hand in the four Karnaugh maps for checkbits 1, 2, 4, and 8.
- Use the labelling scheme $C_1C_2D_3C_4D_5D_6D_7C_8D_9D_{10}$, where *C* denotes a check bit and *D* denotes a data bit.
- Be sure to label the data inputs in ascending order (e.g., C_1 uses D_3, D_5, D_7, D_9, so D_3D_5 should be on top and D_7D_9 should be on the left hand side of the Karnaugh map for C_1).
- Go to https://kazuhikoarase.github.io/simcirjs/ and implement the circuit based on your Karnaugh maps. You are allowed (and encouraged) to use exclusive OR (XOR) gates where appropriate. (*XOR* is labelled *EOR* in SimCir.)
- Hand in a printout (screen snapshot) or your circuit.