

EECS 370

Discussion 4

Week of 2/6 – 2/12

- I) Project 1
 - a. Due TONIGHT! (Why are you here?)
 - b. Autograder may get bogged down near the deadline, so submit early!
- II) Carry look-ahead adders
 - a. Generation
 - i. $g = a \& b$
 - b. Propagation
 - i. $p = a | b$
 - c. Generation (general range)
 - i. Current bits generate, OR some pair to the right generates and all the bit pairs in between propagate
 - ii. Example
 - d. Propagate (general range)
 - i. All bit pairs propagate
 - e. Carry-out
 - i. Generation within the range, OR propagation within the range and carry-in
- III) IEEE format
 - a. 1 sign bit
 - b. 8 exponent bits
 - c. 23 mantissa bits
 - d. Exponent uses biased base 127 encoding (add 127 to encode)
 - i. $-127 \rightarrow 0$
 - e. Example: 5.875
 - f. Example: What is the value in decimal of the following IEEE floating point encoded number?
 - i. 1 10000101 01011001000000000000000
- IV) FSM
 - a. Mealy vs. Moore
 - b. ROM (read-only memory)
 - i. Used to implement constant logic functions
 - c. HW 2, Problem 5 hints