

Programming Assignment #2

COEN 233 Computer Networks
Department of Computer Engineering
Santa Clara University

Dr. Ming-Hwa Wang Winter Quarter 2015
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Office Hours: Saturday 5:00-5:30pm

Due date: February 1, 2015

Viterbi Decoder (200 points)

Please implement the famous convolution decoder, the Viterbi decoder.

Your program should be able to do Viterbi decoding on a Linux using a language you prefer. Your Viterbi decoder should be flexible enough to do different decoding schemes according to the input. The input contains 4 numbers, the first 3 arguments are used to configure the decoder: 1) the more than one the number of stages of the shift registers, 2) output bit one's xor pattern, and 3) output bit two's xor pattern. The 4th number is input bit stream in binary format (with infrequently one or more single-bit errors). The output should be the original sequence of binary numbers before encoding as in the example below.

For example, if the input is 3 7 5 0011100001100111111000101100111011, and output should be 010111001010001.

Student Name:

SSN/ID:

Score:

Correctness and boundary condition (70%):

Whitespace and free format compliance (5%):

Compiling without warning/error (5%):

Error Handling (5%):

Modular design, file/directory organization, showing input, documentation, coding standards (10%):

Automation (5%):

Subtotal:

Late penalty (20% per day):

Special service penalty (5%):

Total score: