

ELEC 5260/6260 Problem Set #4

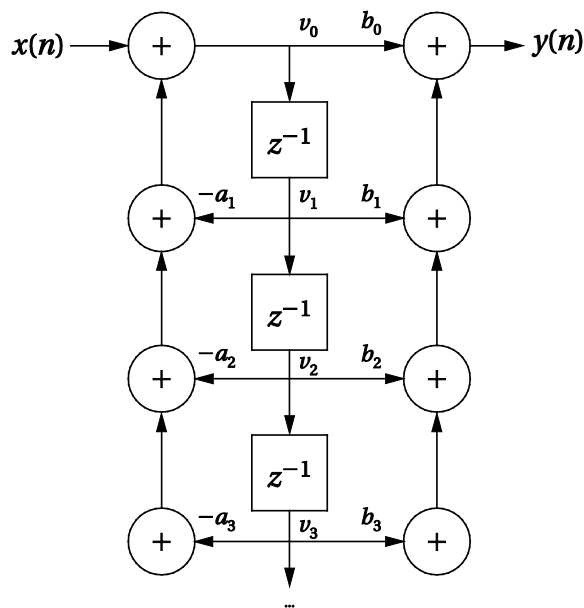
Part 1 Due Wednesday, 2/13/2013

Part 2 Due Friday, 2/15/2013

PART #1 (DSP programming)

Shown below is the design of an “IIR direct form type II filter”, described in Chapter 5 of the text. Design a program for the TMS 32C5x DSP, discussed in class, to implement this filter, using the format of the class examples. Data sample $x(n)$ is to be read from an input port, and filter output $y(n)$ is to be sent to an output port, as in the “Low Pass Filter” example in the class slides. The values $a_1, a_2, a_3, b_0, b_1, b_2, b_3$ are constants, stored in program memory. Variables v_0, v_1, v_2, v_3 are to be stored in data memory. You may assume that all values are in the “proper format” to use for this calculation, as shown in the examples on the class slides.

1. Submit the source program (typed or hand written)
2. On the submitted program, show how you have the variables arranged and stored in memory.



PART #2 (UML)

At the end of Chapter 3, answer/work the following, which deal with input/output operations: Q3-6, Q3-8, Q3-9, Q3-12, Q3-12, Q3-13, Q3-15, Q3-16, Q3-19.