Inspiring Excellence

CSE460

VLSI Design

Lab Assignment : 01

Submitted By

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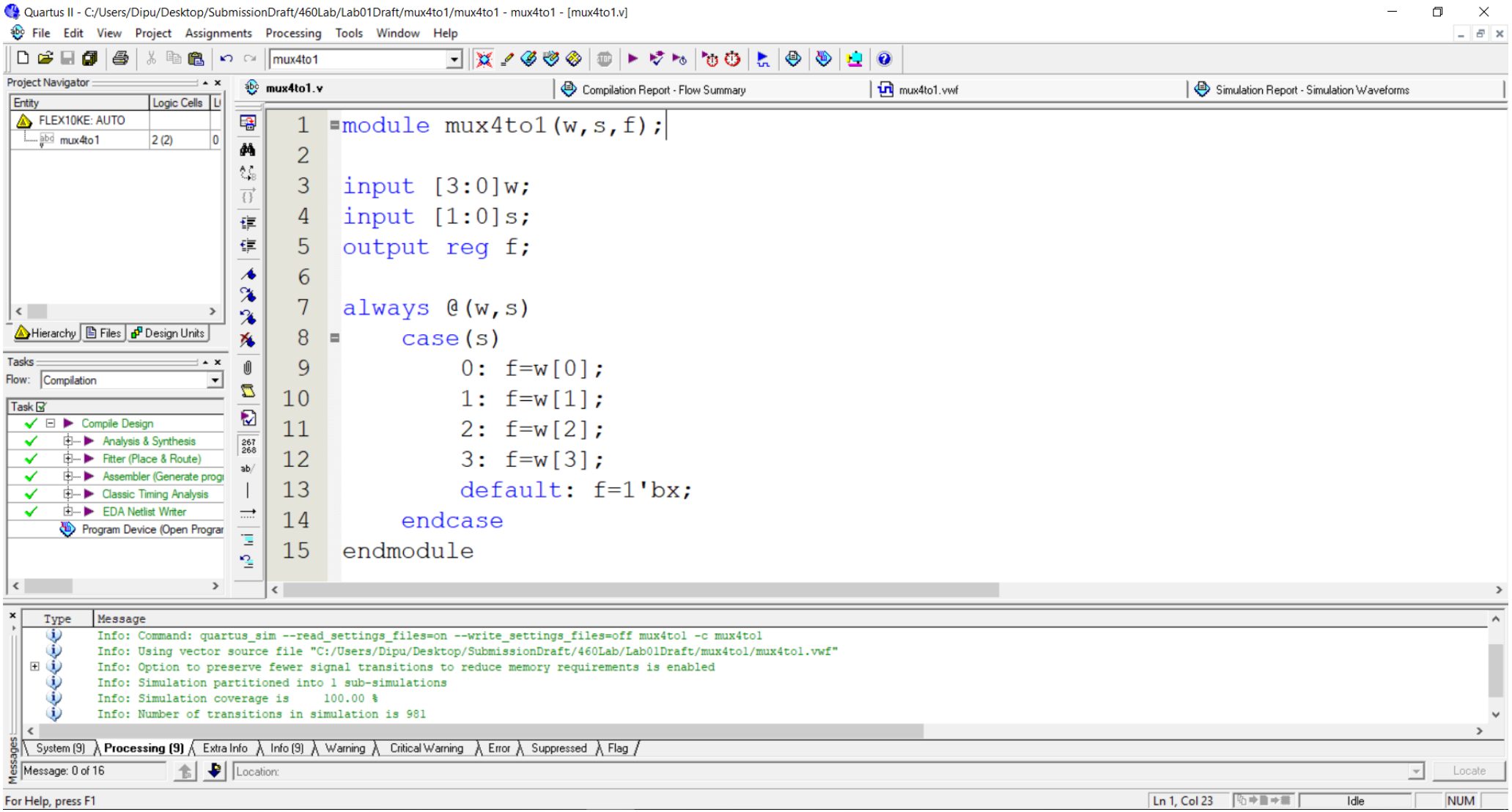
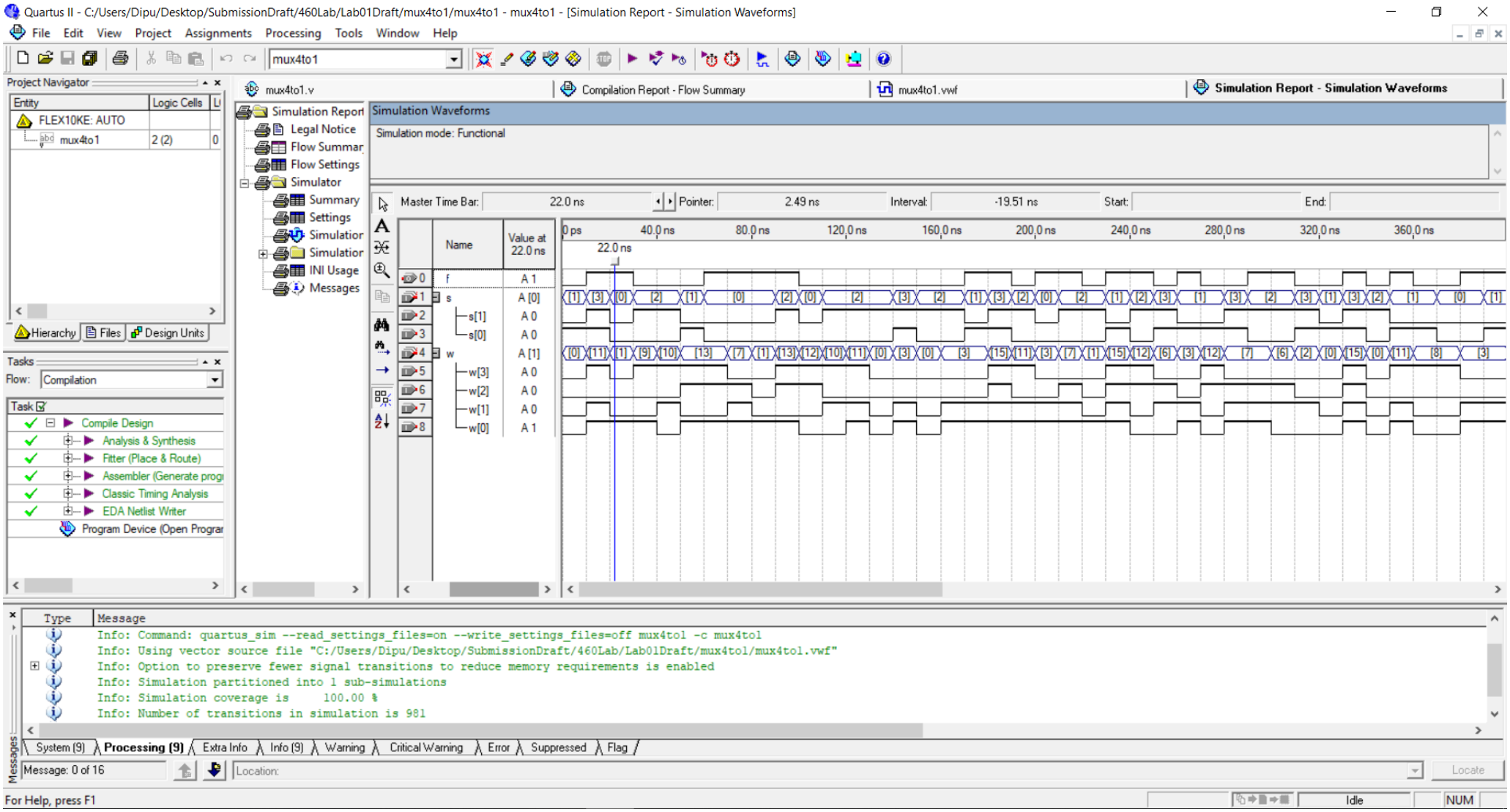
Lab Assignment 01

Home Work 01 Verilog Code



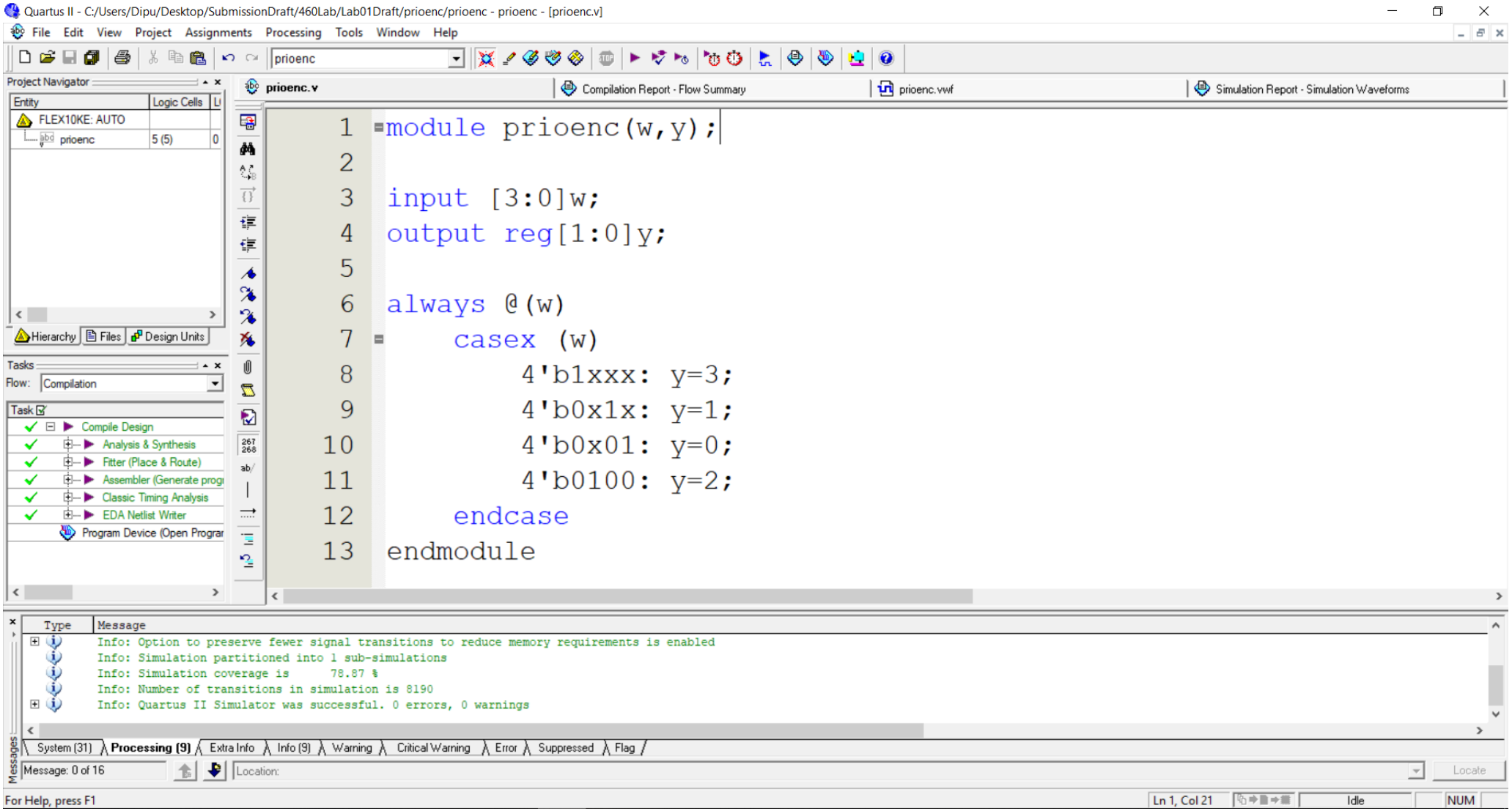
Home Work 01 Vector Waveform



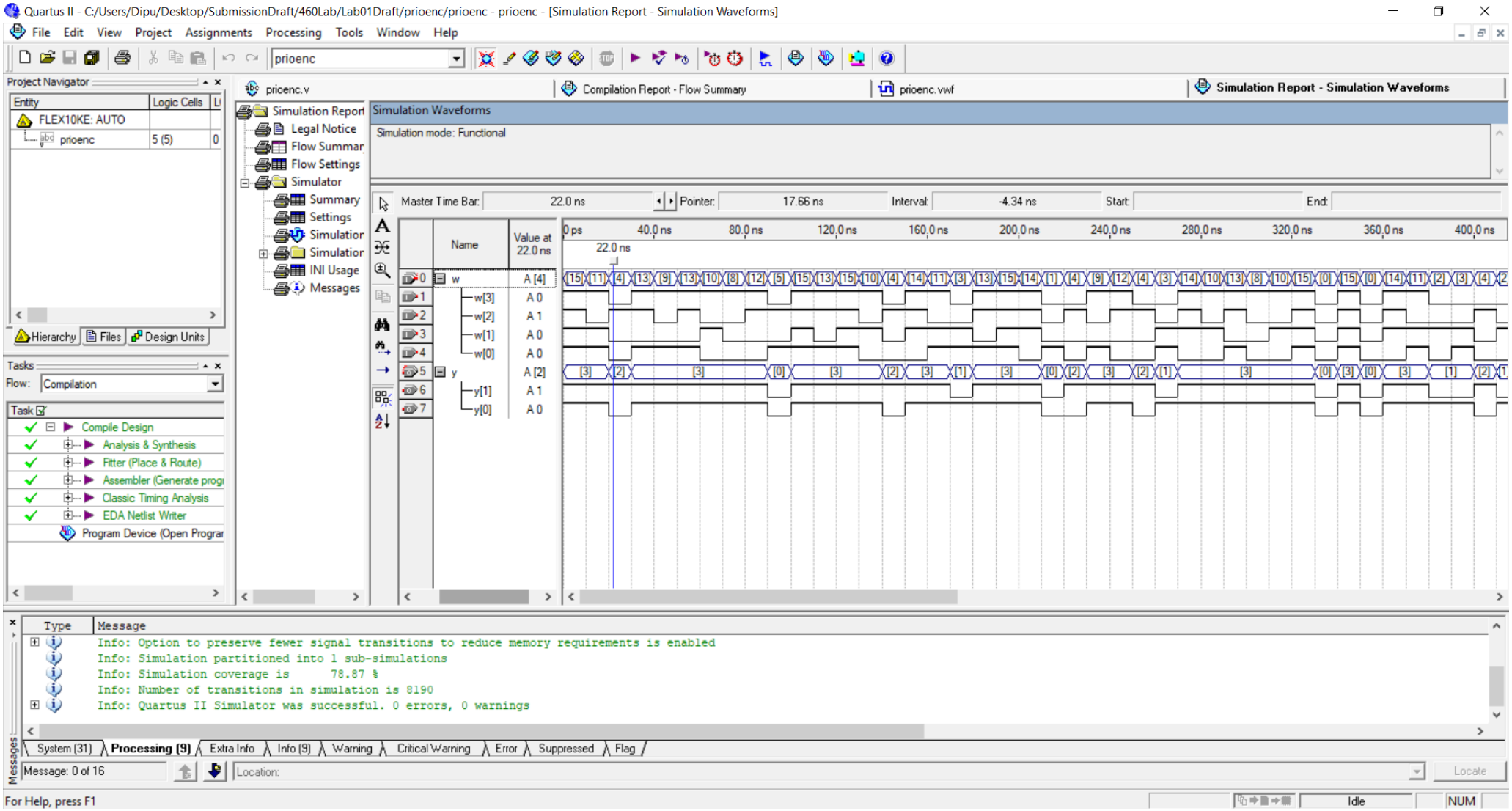
Home Work 01 Discussion

It is a 4 to 1 MUX which takes 4 inputs and provides 1 output(f). It has two bit selector through which we get four binary combinations(00,01,10,11) which are 0,1,2,3 case in the Code. If we select 0(00), it will provide out the input it will have in w[0] and w[1], w[2] & w[3] for the cases 1(01), 2(10) & 3(11) respectively.

Home Work 02 Verilog Code



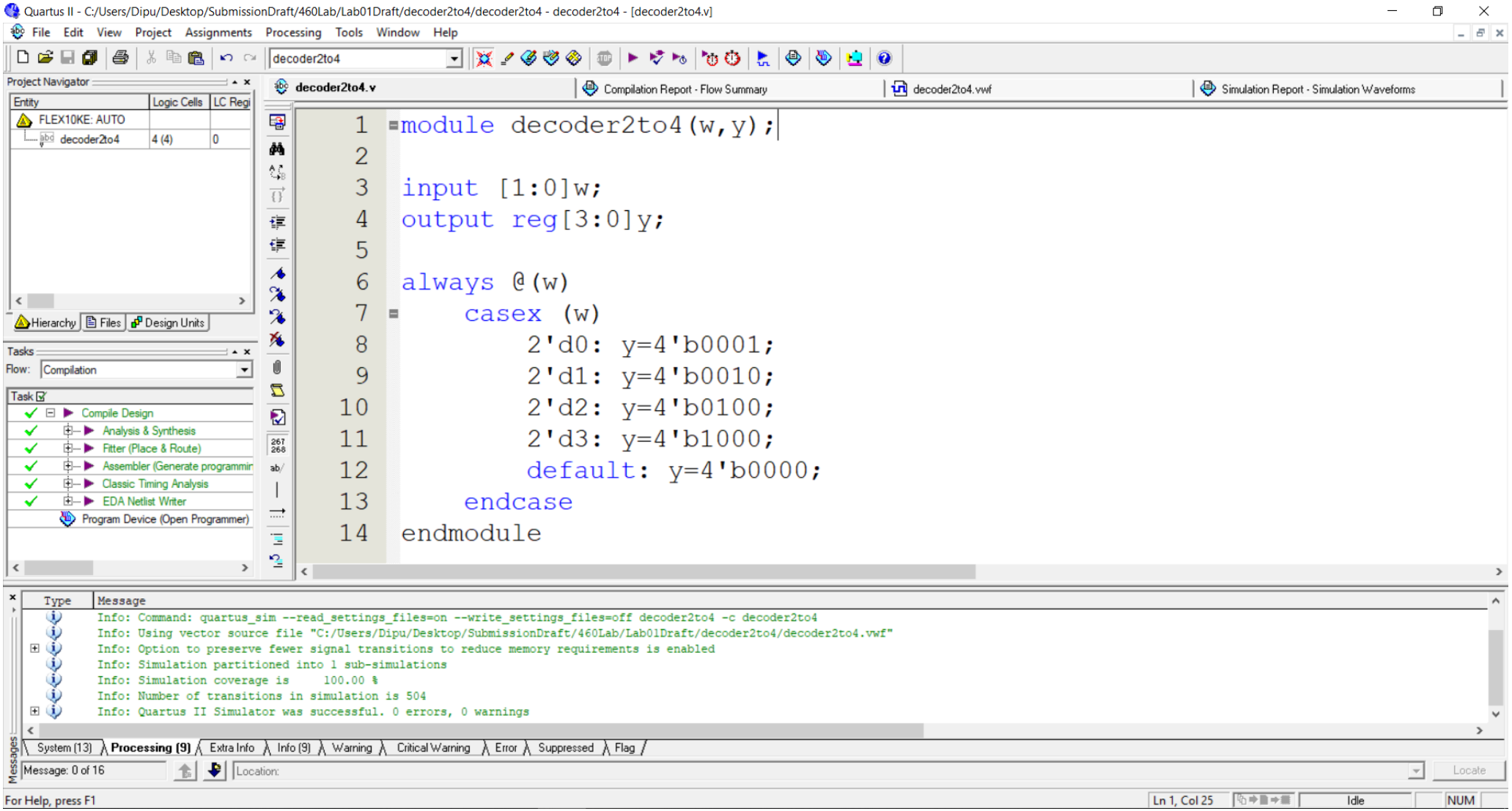
Home Work 02 Vector Waveform



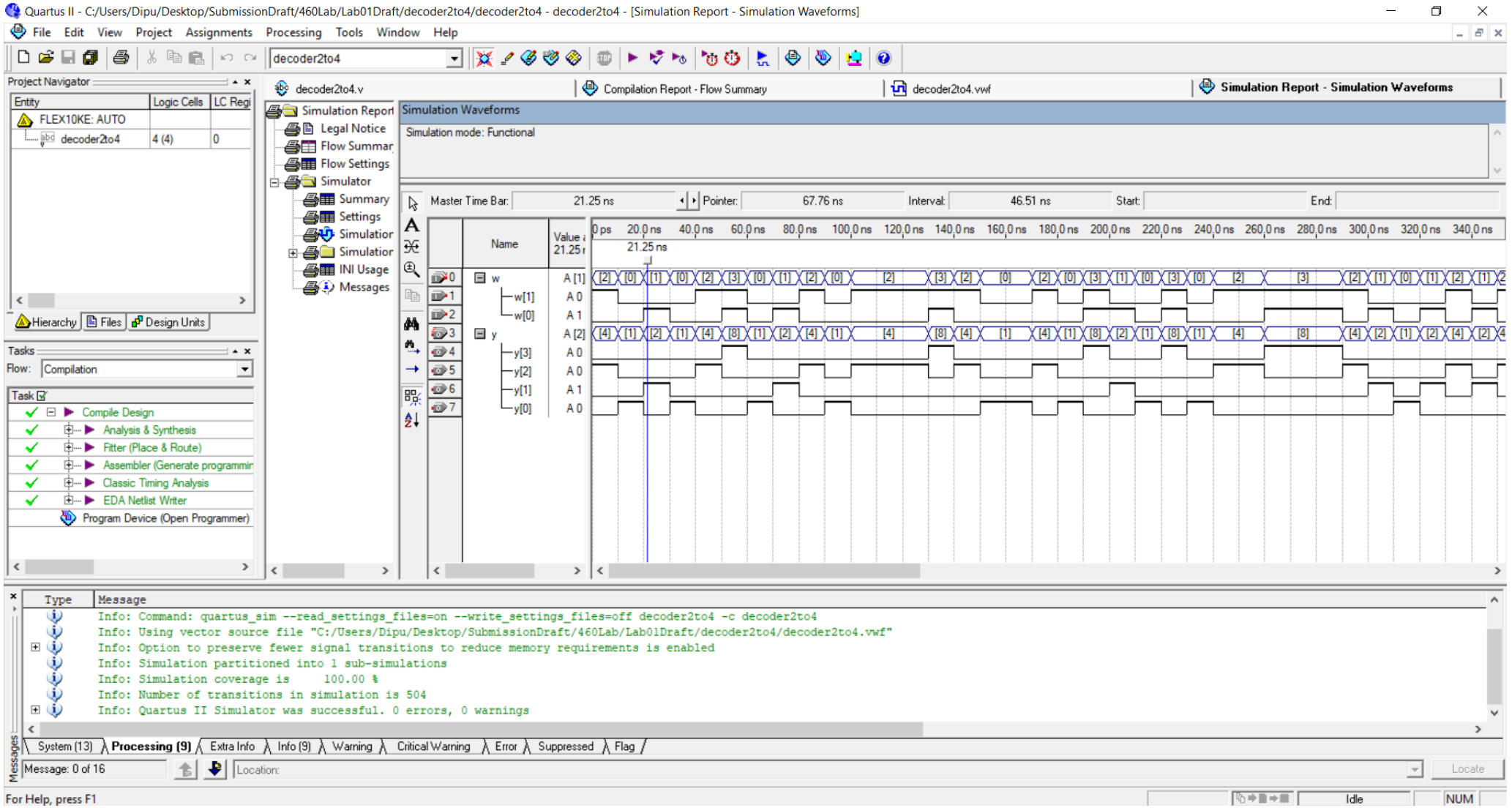
Home Work 02 Discussion

It is a Priority Encoder having priority order 3>1>0>2. It takes a 4 bits input & provides a 2 bits output. To appear in output, the corresponding bit of that number will have to high(1) & the corresponding bit(s) of higher priority number(s) will have to be low(0) & it won't care about the other bits.

Home Work 03 Verilog Code



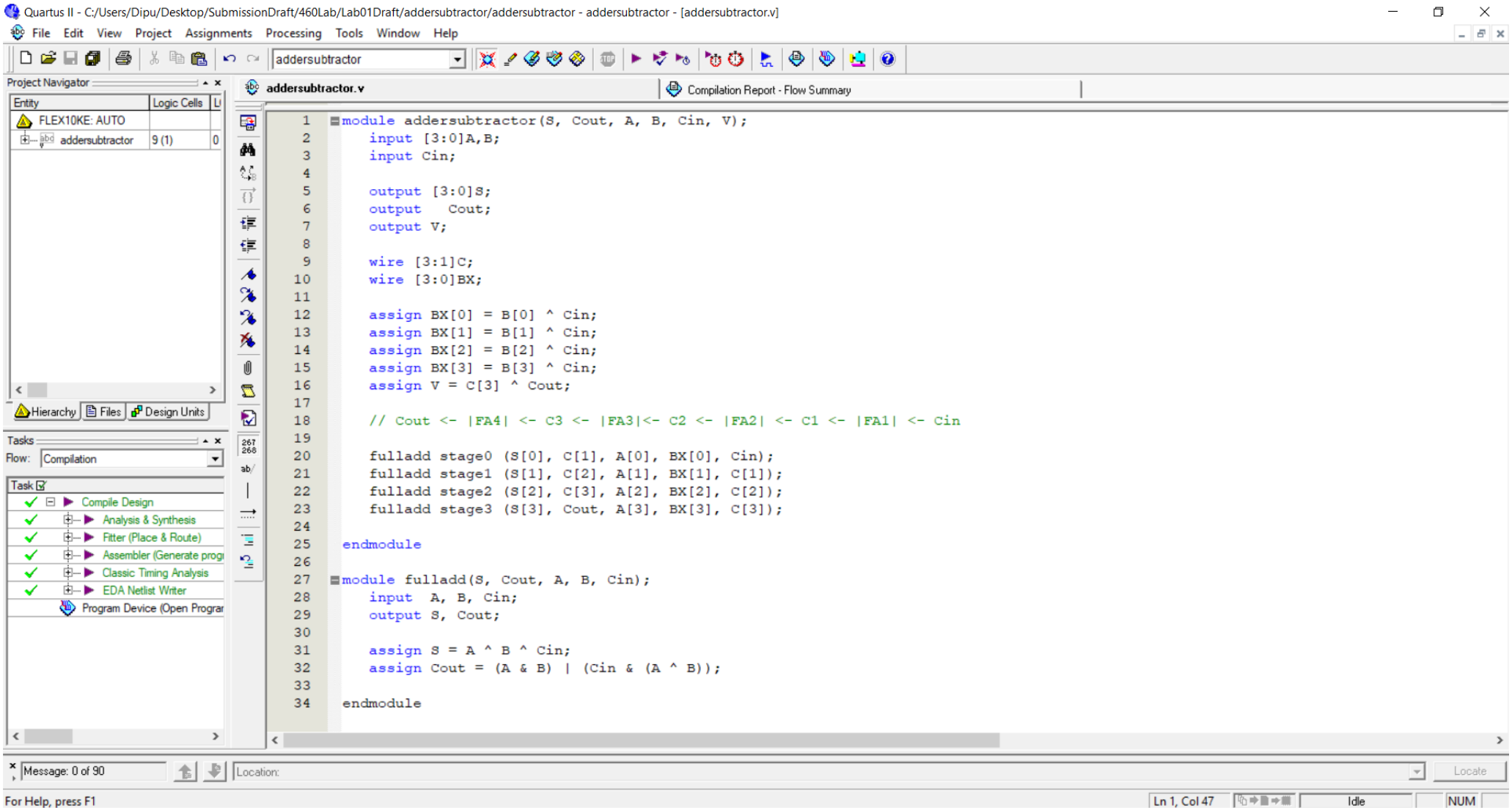
Home Work 03 Vector Waveform



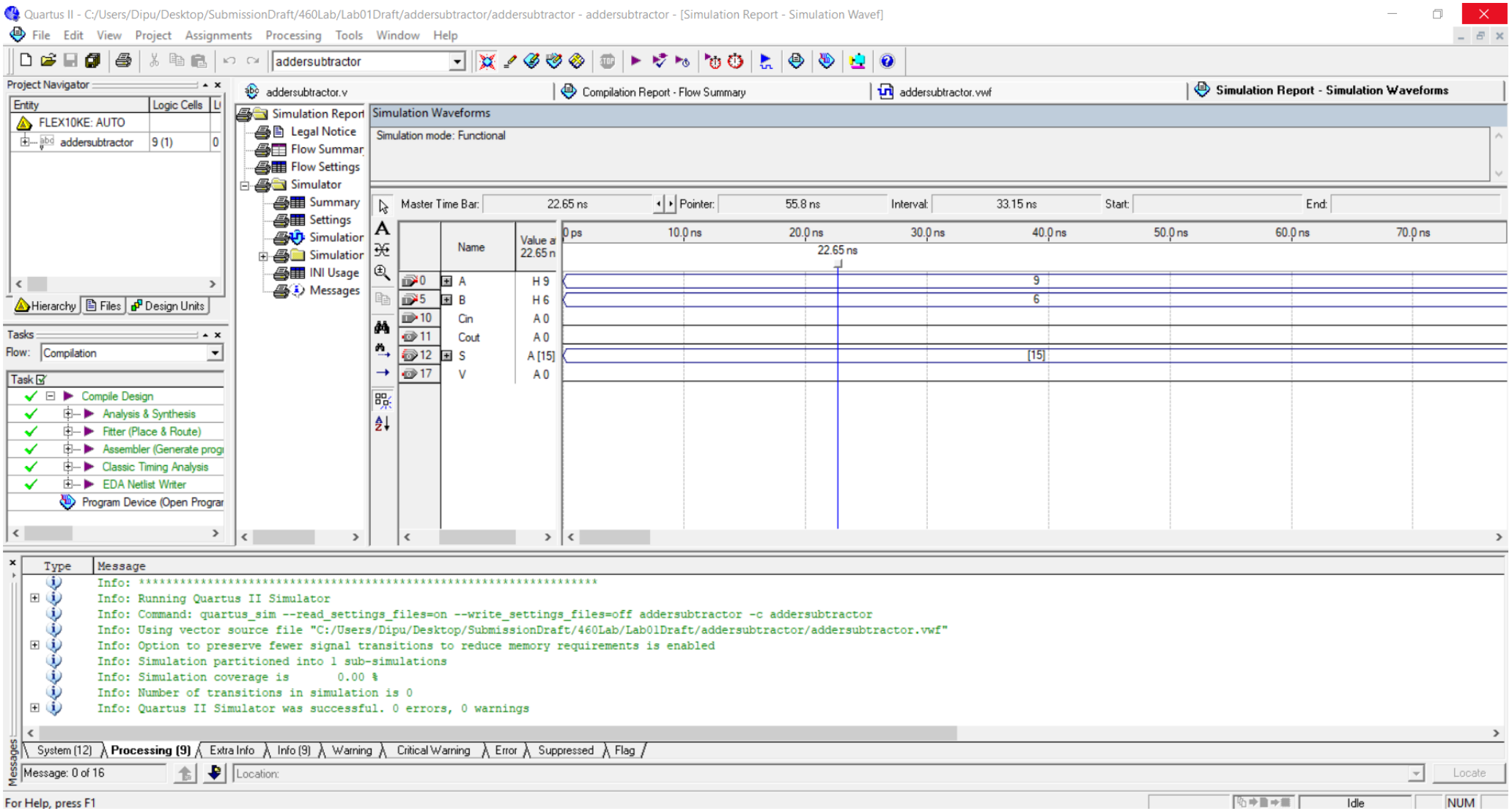
Home Work 03 Discussion

It is a 2 to 4 Decoder which takes 2 bits input and provides an output of 4 bits. Based on the 2 bits input, it will provide one output which will be represented in 4 bits. If none of the specific case is provided as input, it will provide an output value of 0 (0000 in 4 bit binary).

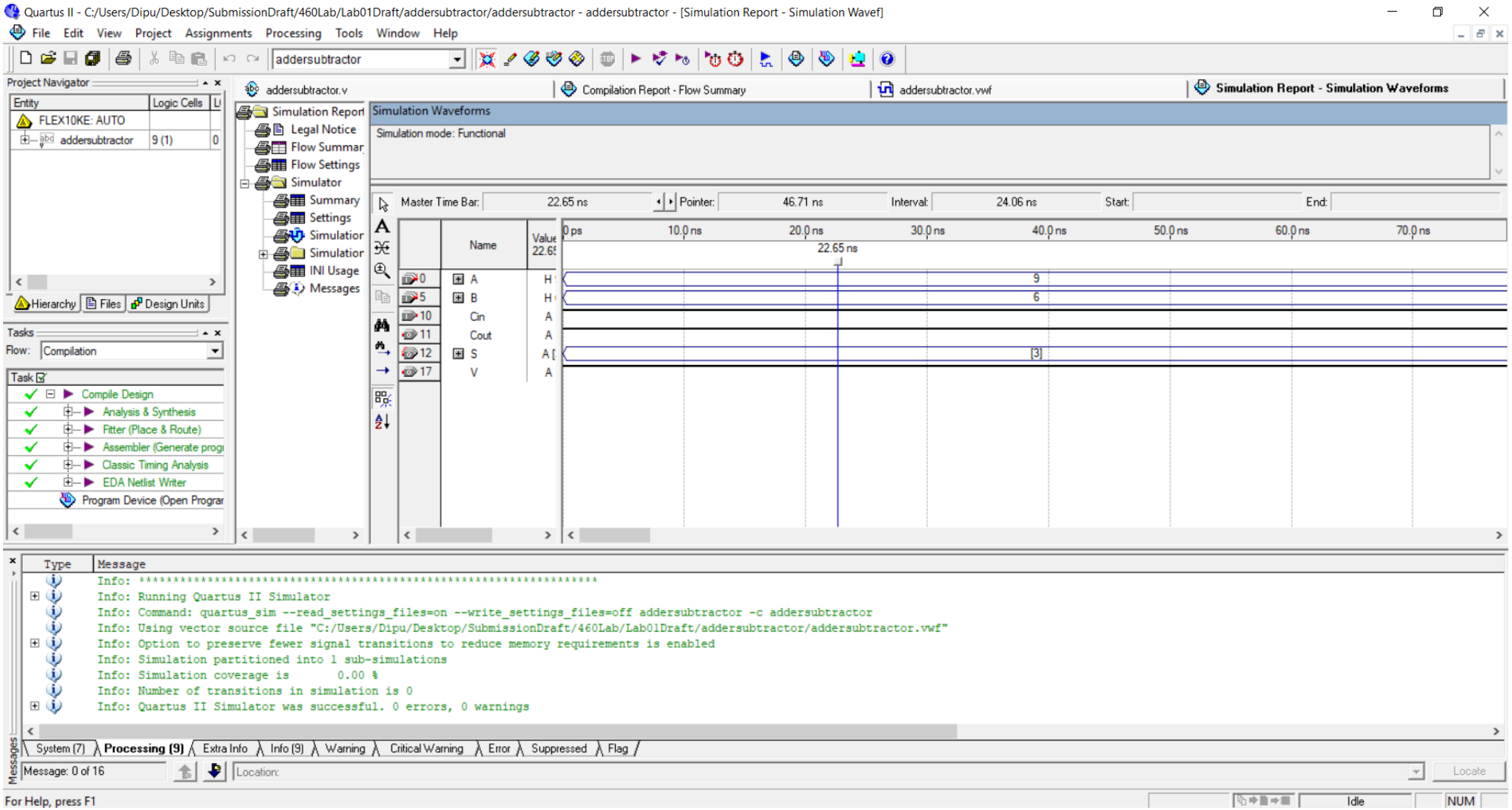
Home Work 04 Verilog Code



Home Work 04 Vector Waveform : Addition



Home Work 04 Vector Waveform : Subtraction



Home Work 04 Discussion

It is a 4 bit ripple carry adder & subtractor which can take input as two 4 bits number. If we provide 0 in Cin, it will perform Addition Operation & for Cin=1, it will perform Subtraction Operation. This has been implemented in Code using a subcircuit 'fulladd'. Here S will have the value of Addition or Subtraction, Cout will have the value of Carry Out of last full adder & V will provide us idea about Overflow Status. Here we do perform XOR operation between the input value of Cin & each bit of input B.