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Lab #7 Report

ECE 2031 L08

23 October 2018

```
-- Altera Memory Initialization File (MIF)

DEPTH = 1024;
WIDTH = 16;

ADDRESS_RADIX = HEX;
DATA_RADIX = HEX;

CONTENT
  BEGIN
    [000..3FF] : 0000;  -- Default to NOP

           000 : 0411;  -- Start:  LOAD    B       ;Load value
stored in B
           001 : 0C12;  --         ADD     C       ;Add value
stored in C
           002 : 0C13;  --         ADD     D
           003 : 0810;  --         STORE   A       ;Store value
in A
           004 : 1404;  -- Here:   JUMP    Here    ;Loop here
forever
           010 : 0000;  -- A:      DW      &H0000
           011 : 0004;  -- B:      DW      &H0004
           012 : 0003;  -- C:      DW      &H0003
           013 : 0008;  -- D:    DW        &H0008
END;
```

Figure 1. This is the EXAMPLE.mif file that contains the code for a program: A = (B + C) + D.

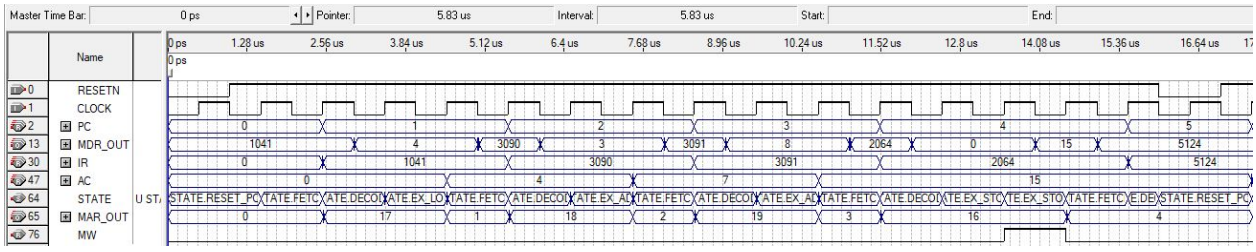

Figure 2. This is the timing simulation waveform for the program: A = (B + C) + D.

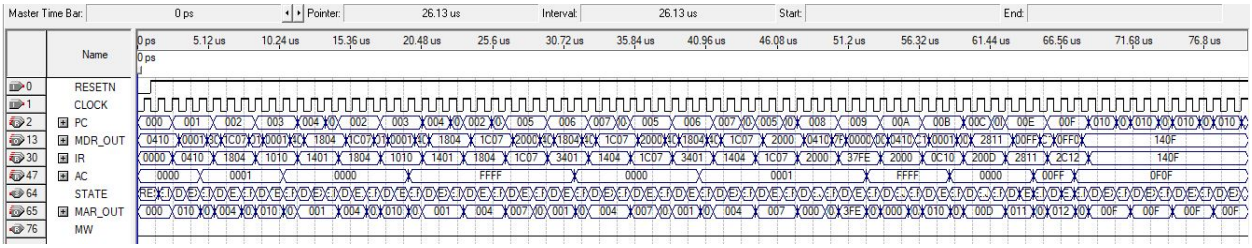

Figure 3. This is the timing simulation waveform for the program: TEST_CODE.mif file (which test various functions of the simple computer).

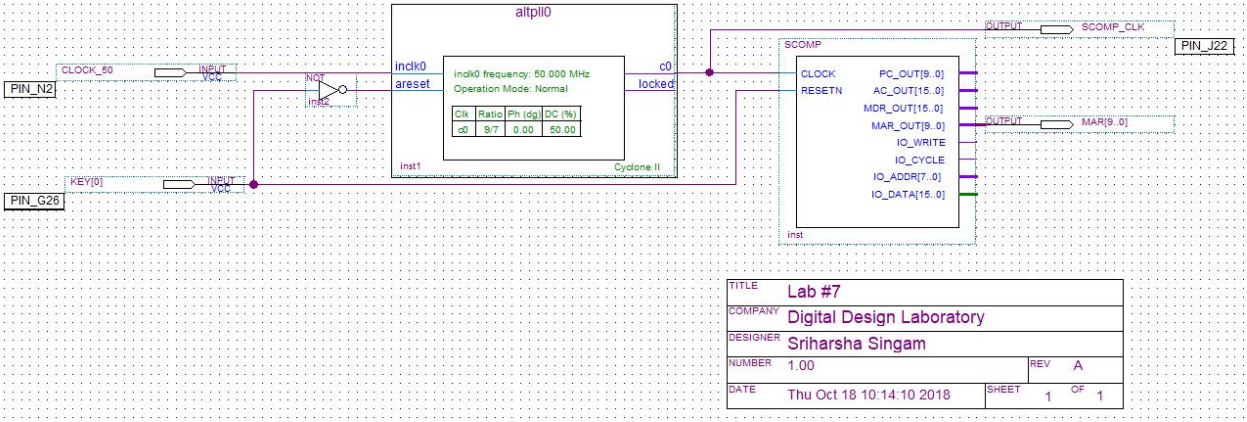

Figure 4. This is the schematic for the simple computer. It includes a clock signal and a schematic for the VHDL program that makes the simple computer's logic.

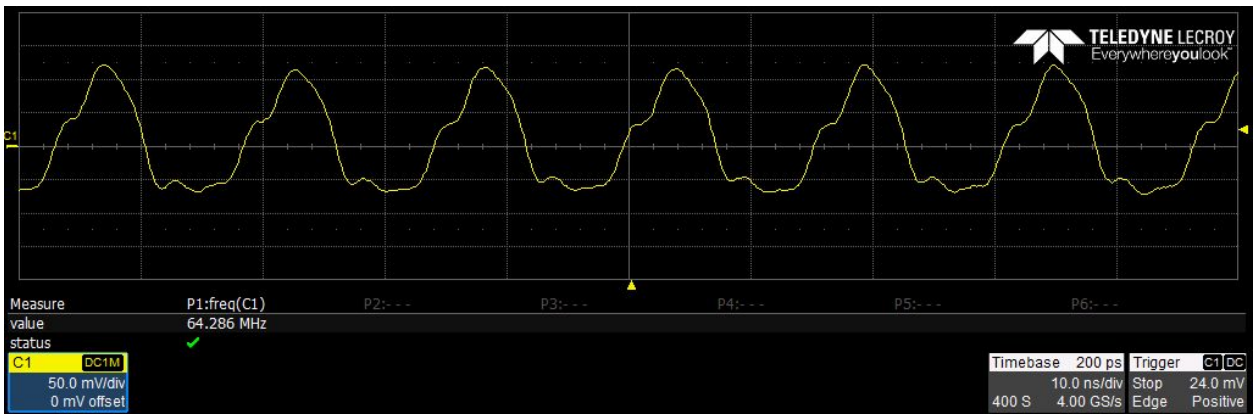

Figure 5. Using the oscilloscope capture to measure the frequency of the clock signal of the simple computer running the program from TEST_CODE.mif (which test various functions of the simple computer).