ECE 5723: Methodologies for System Level Design and Modeling

Homework 4 Report

“SystemC RTL Design”

Worcester Polytechnic Institute

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Submitted by

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Professor Navabi

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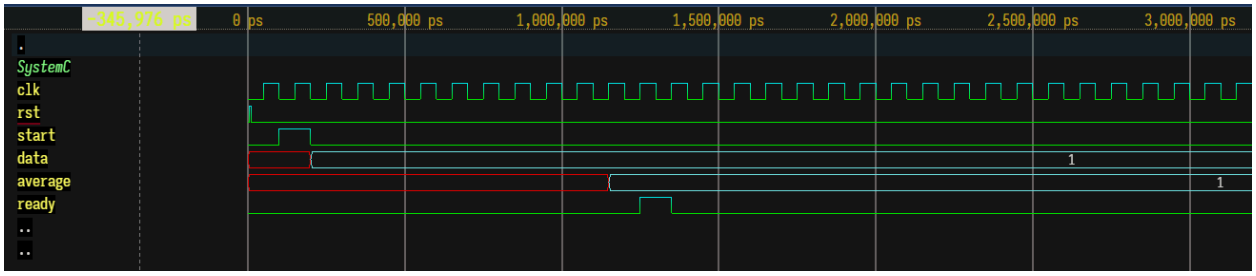
All codes are in the .zip folder submitted via email and canvas

VCD viewer is: https://vc.drom.io/

Test #1 All 1's

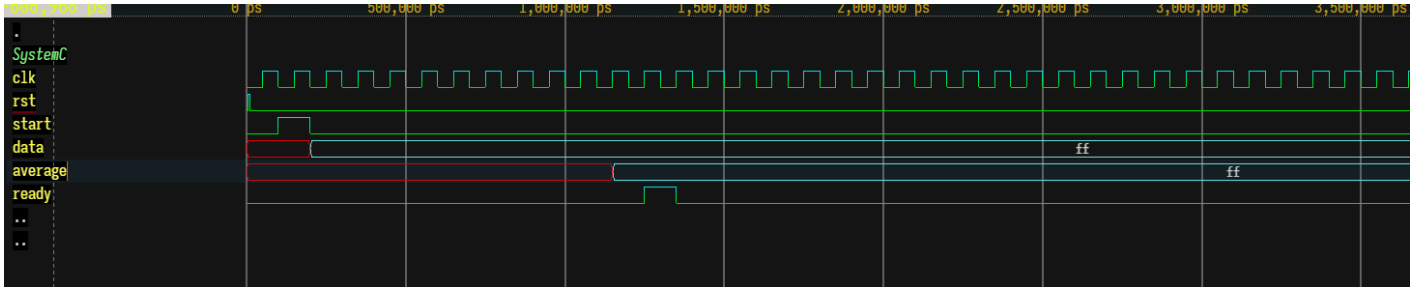
```
// Data Coming in every posedge TEST #1
data = "00000001"; // Data 0
wait(100, SC_NS);
data = "00000001"; // Data 1
wait(100, SC_NS);
data = "00000001"; // Data 2
wait(100, SC_NS);
data = "00000001"; // Data 3
wait(100, SC_NS);
data = "00000001"; // Data 4
wait(100, SC_NS);
data = "00000001"; // Data 5
wait(100, SC_NS);
data = "00000001"; // Data 6
wait(100, SC_NS);
data = "00000001"; // Data 7
wait(100, SC_NS);
```



It's 1

Test #2 all 0xFF

```
// Data Coming in every posedge TEST #2
data = "11111111"; // Data 0
wait(100, SC_NS);
data = "11111111"; // Data 1
wait(100, SC_NS);
data = "11111111"; // Data 2
wait(100, SC_NS);
data = "11111111"; // Data 3
wait(100, SC_NS);
data = "11111111"; // Data 4
wait(100, SC_NS);
data = "11111111"; // Data 5
wait(100, SC_NS);
data = "11111111"; // Data 6
wait(100, SC_NS);
data = "11111111"; // Data 7
wait(100, SC_NS);
```

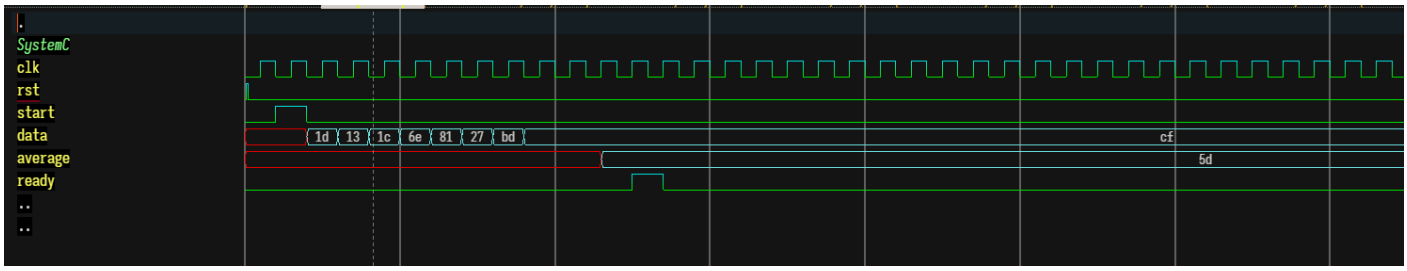


0xFF = 255

Test #3

(29 + 19 + 28 + 110 + 129 + 39 + 189 + 207) = 750/8 = 93.75 floor 93

```
// Data Coming in every posedge TEST #3
data = "00011101"; // Data 0
wait(100, SC_NS);
data = "00010011"; // Data 1
wait(100, SC_NS);
data = "00011100"; // Data 2
wait(100, SC_NS);
data = "01101110"; // Data 3
wait(100, SC_NS);
data = "10000001"; // Data 4
wait(100, SC_NS);
data = "00100111"; // Data 5
wait(100, SC_NS);
data = "10111101"; // Data 6
wait(100, SC_NS);
data = "11001111"; // Data 7
wait(100, SC_NS);
```

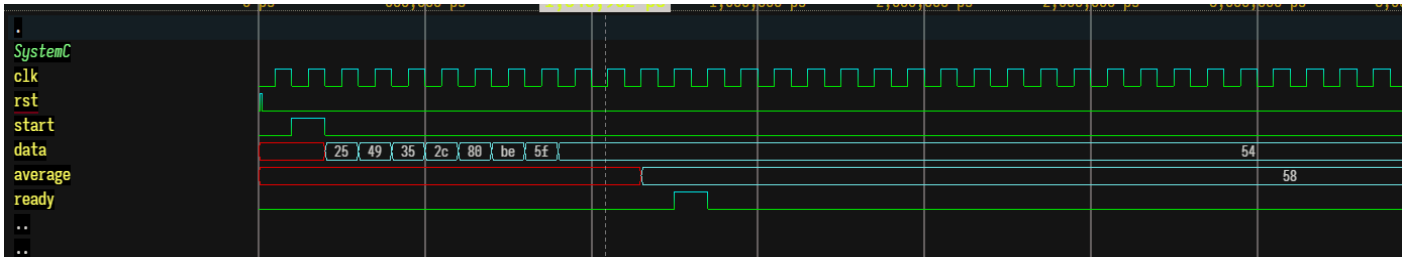


0x5D = 93

Test #4

(37 + 73 + 53 + 44 + 128 + 190 + 95 + 84) = 704/8 = 88

```
// Data Coming in every posedge TEST #4
data = "00100101"; // Data 0
wait(100, SC_NS);
data = "01001001"; // Data 1
wait(100, SC_NS);
data = "00110101"; // Data 2
wait(100, SC_NS);
data = "00101100"; // Data 3
wait(100, SC_NS);
data = "10000000"; // Data 4
wait(100, SC_NS);
data = "10111110"; // Data 5
wait(100, SC_NS);
data = "01011111"; // Data 6
wait(100, SC_NS);
data = "01010100"; // Data 7
wait(100, SC_NS);
```



0x58 = 88