Lab Assignment: MODELSIM

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CSc 34300 & CSc 34200

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Table of Contents

[Section 1: Objective 2](#_Toc95840304)

[Section 2: Modelsim Simulation and intro 3](#_Toc95840305)

[Section 2.1: Simulation Results 6](#_Toc95840306)

[Section 3: Explanation and Analysis 10](#_Toc95840307)

[Section 4: Conclusion 10](#_Toc95840308)

# Section 1: Objective

The goal of this project is to familiarize myself with ModelSim and to create a project that uses my 2-1 Mux where each bit is one signal VHDL file to generate waves and output. We then take the bits and compare them to the truth table to validate our result.

# Section 2: Modelsim Simulation and intro

Graphical user interface, text, application, email

Description automatically generated

Figure 1. Creating new project

Graphical user interface, text, application

Description automatically generated

Figure 2. Adding existing item to project



Figure 3. Compiling file

Graphical user interface, text, application

Description automatically generated

Figure 4. Simulating file

Chart, treemap chart

Description automatically generated

Figure 5. Window of project screen when opening simulation

Graphical user interface

Description automatically generated

Figure 6. Changing period

# Section 2.1: Simulation Results

Chart

Description automatically generated

Figure 7. Simulation screen before running

Chart

Description automatically generated

Figure 8. Example of all 1s in output

Chart, histogram

Description automatically generated

Figure 9. Example of 3 1's

A picture containing text

Description automatically generated

Figure 10. Example of 3 0's

Chart

Description automatically generated with medium confidence

Figure 11. Example of 2 0's 2 1's

# Section 3: Explanation and Analysis

Taking the 2-1 Mux VHDL file for the one-bit signals and putting it on Modelsim for waveforms we can see that the waveforms follow the truth table. Every input of the selector, input 1 and 2 we see that the output that is produced is correct. In the last few figures we can see that in the “MSGS” section the bits change so that we can compare it to the truth table respectively.

# Section 4: Conclusion

I was able to familiarize myself with ModelSim and correctly match the 2-1 Mux file for the one-bit signal with the truth table. By looking at the waveform I can conclude that for the two inputs, the given output is correct.