Group 45

Lab 09 - Mux and Demux

In this lab, you've learned about how the physics of semiconductors and circuits induce delay in the outputs, and the consequences thereof. You have also implemented a circuit that has a lot of delay and seen its effects on the simulation.

Rubric

Item	Description	Value
Summary Answers	Your writings about what you learned in this lab.	25%
Question 1	Your answers to the question	25%
Question 2	Your answers to the question	25%
Question 3	Your answers to the question	25%

Lab Summary

We learned about the components of Mux and Demux in verilog. Mux has multiple inputs and one output. Demux has one input and multiple outputs. We implemented a 4-bit Mux and 4-bit Demux in verilog and then connected them to complete the design for the lab.

Lab Questions

1 - In plain English describe the function and use of a multiplexer.

A multiplexer is a switch that selects one input from several inputs and forwards it to a single output. The use of the Mux is to have selection control of the inputs.

2 - In plain English describe the function and use of a demultiplexer.

The demultiplexer is the inverse of a multiplexer. It takes one input and directs it the the designated output line. The use of a Demux is where you have single data input and want to use select signals for the expected output.

3 - What other uses might these circuits have? (Think Shannon's)

You can use these circuits where multiple data signals share a single communication path. Related to Shannon's theorem, use these to define the max data rate for error-free communication paths.

Code Submission

Upload a .zip of all your code or a public repository on GitHub.