1 Introduction

In this pre-lab you are going to explore the functionality of Multiplexers (Muxes) and De-Multiplexers (De-Muxes). Part one of this pre-lab is a questionnaire section. You have to derive truth tables for a Multiplexer and a Decoder. In part 2 of the pre-lab you are going to check whether you can implement a decoder using a De-Mux.

Part 1

2 Short questions on Mux and De-Mux

Derive the Truth table for the Mux shown in Figure 1

![Diagram of a 4 X 1 Mux](image)

Figure 1: Circuit Diagram for a 4 X 1 Mux
Derive the Truth table for Decoder shown in Figure 2

Figure 2: Circuit Diagram for 2 to 4 Decoder
Show the BCD representation of the Decimal number '1492'

Part 2

3 Decoder to De-Mux

Implement the Functionality of a 2 to 4 Decoder using a 1x4 De-Mux.
You can use this page as an rough sheet