Assignment 15

Register File

Introduction

We will build dual-port register file of 32 register, each register 32 bits. The inputs to the register file will be

- `RN1` - Number of first source register, to be read
- `RN2` - Number of second source register, to be read
- `WN` - Number of destination, to be written
- `WD` - The value to be written to register `WN`
- `Clk` - The clock
- `Clr` - The clear signal
- `RegWrt` - The write signal, whether to write `WD` to `WN`.

The output will be `RD1` and `RD2`, the values read from registers `RN1` and `RN2`.

The Circuit

Begin by building a 2-register dual-port register file. Test it. Then use recursion to build similar register files of 4, 8, 16, and 32 registers. Test each one as you build it. Add the `RegWrt` signal only to the 32-register file.

Due Date

This assignment will be due by midnight Thursday, November 14.