

Roth and John 3rd edition – Chapter 9

(Make sure to use the 3rd Edition to get the appropriate questions!)

1. Problem 9.21
2. Problem 9.22
3. Problem 9.24
4. Problem 9.25
5. In VHDL, implement a load / store RAM with 4 bit addresses and 4 bit words. Create a RAMtype data type as an array of sixteen 4-bit vectors. Use the onboard switches to specify an address and two pushbuttons for load / store (one button to load from the specified address and the other to store to the specified address). When loading a value from RAM, display the 4 bit value on the onboard LEDs. When storing a value, get the value from the PMOD switches. Use another pushbutton as a reset button to set all memory values to 0 and clear the LEDs.
 - a. For submission, you should include:
 - i. a zip file with the Vivado project and code
 - ii. A few images and a short description your working implementation.