

Union College

ECE352

Assignment 1

Due Date: Tuesday April 8th

1. Give block diagrams of two examples of embedded systems that show the inputs and outputs of the microcontroller. Specify whether the inputs and outputs are analog or digital. Site any references that you used.
2. Who designed the first stored program machine?
3. When was the first microcontroller released?
4. What is held in the Program Counter register?
5. What is the address of:
 - a. R2 in register bank 3
 - b. R0 in register bank 2
6. Explain how data and program memory are treated by the 8051.
7. What is in the SFR area of memory?
8. What is the range of bit-addressable memory locations?
9. Write a sequence of instructions to put the constant 44h in the following locations:
 - a) Register 3 (bank 0)
 - b) 0x2F
 - c) 0x88 (NOT a SFR)
 - d) B register
 - e) 0x0FF0 in external RAM
10. Write a program to push all of the registers in bank 2 onto the stack. Be sure to initialize the stack pointer.

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