Adventures in
MicroController Applications

Laboratory uP3,4

μP Laboratory 3

Use Index addressing for your Loop.

Initialize Display

Initialize Counter = 0

Read in Number

Display number

Is Number = 1   No

Is Number = 0   No

Yes

Turn on Buzzer

Yes

Turn off Buzzer

Delay 1 Sec

Set Relay output Hi

Decrement counter

Jump to Buffalo

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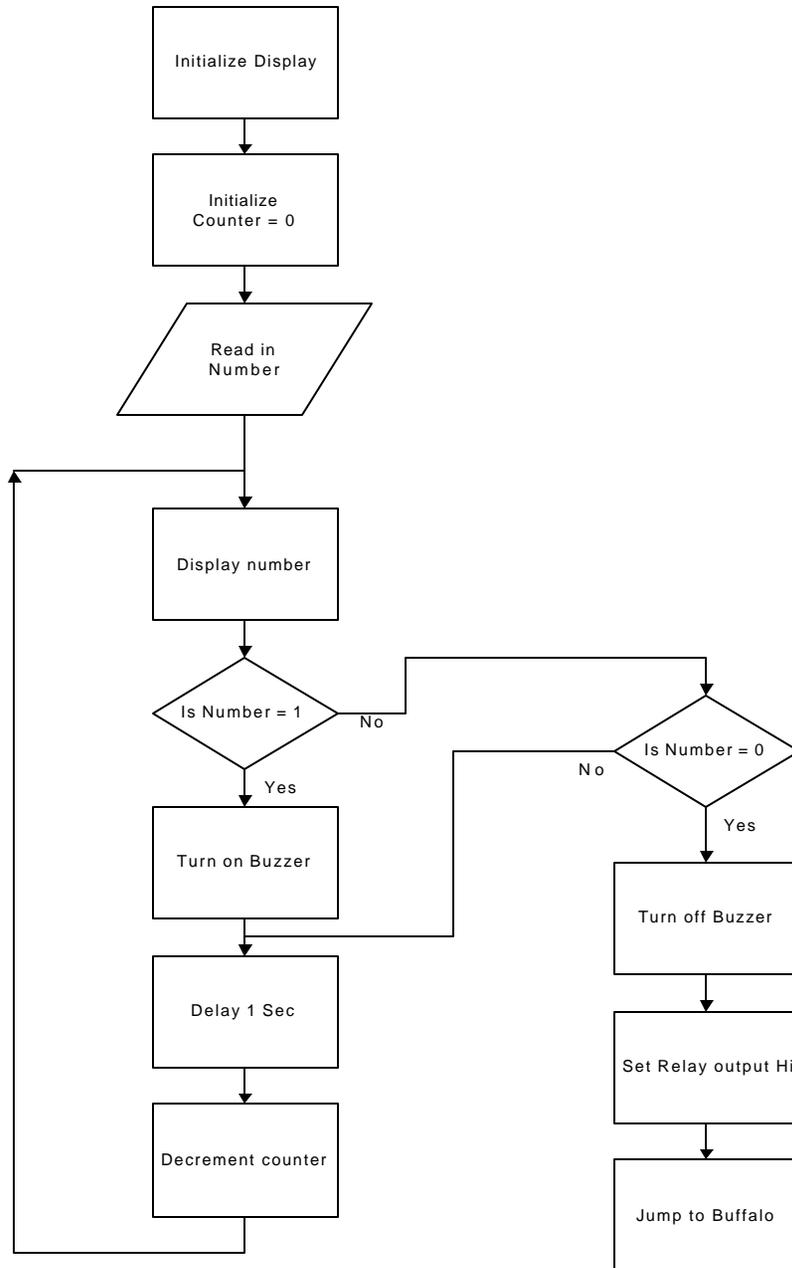
μP Laboratory 4:
Soda Pop Machine Controller

Purpose:

1. Develop an application using a micro-controller.

Preparation:

Design a vending machine control system for the given specifications.

> Use the M68HC11EVB.
>
> The vending machine dispenses: 4 varieties of soda pop: Coke, Diet Coke, Sprite, and Mello Yello.
>
> The coin entry mechanism accepts nickels, dimes, quarters, and dollar bills. The coin return mechanism gives only nickels, and dimes. Coin mechanisms produce or require positive level pulses on each coin.
>
> Display the amount entered or credit in the form: $0.00.

Design Rules:

1. Use proper documentation when creating your source file.
2. M68HC11EVB I/O limitations: PortB, PortE, PortA (excluding PA7).

Experiment Procedure:

1. Test your vending machine controller.

Things to Consider

- Inputs?
  - How to input?
  - Requires positive level pulse on each coin.
  - Coin Entry Mechanism (nickels, dimes, quarters, dollar bills) (4 bits)
  - Soda Selection (4bits)
- Outputs?
  - Output a pulse for each output (about ½ - 1 second pulsewidth)
  - Coin Return Mechanism (nickel,dime) (2 bits)
  - Soda Output (Coke, Diet Coke, Sprite, Mello Yello) (4bits)
  - Amount entered or credit in the form: $0.00.(????)