Project HW2

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# **Overview**

In this phase introduced the usage of the LCD, the Keypad, and the UART unit. My idea is to divide the different functionality that is needed into procedures then call each function as needed. I believe that this will ease up the programming and the debugging process.

The user will be prompted to choose whether to encrypted or decrypted. If the user presses 1 then the decryption operation will be executed. If anything else is pressed then the encryption procedure will be invoked.

At the end of each message entered, the system automatically enters a #(23H) this will help the other procedures with knowing when the message ends.

There are no restrictions on the length of the messages entered. However, entering symbols and numbers is not allowed.

Note that this program was implemented with a crystal of 11.0592MHz and a baud rate of 4800bps.

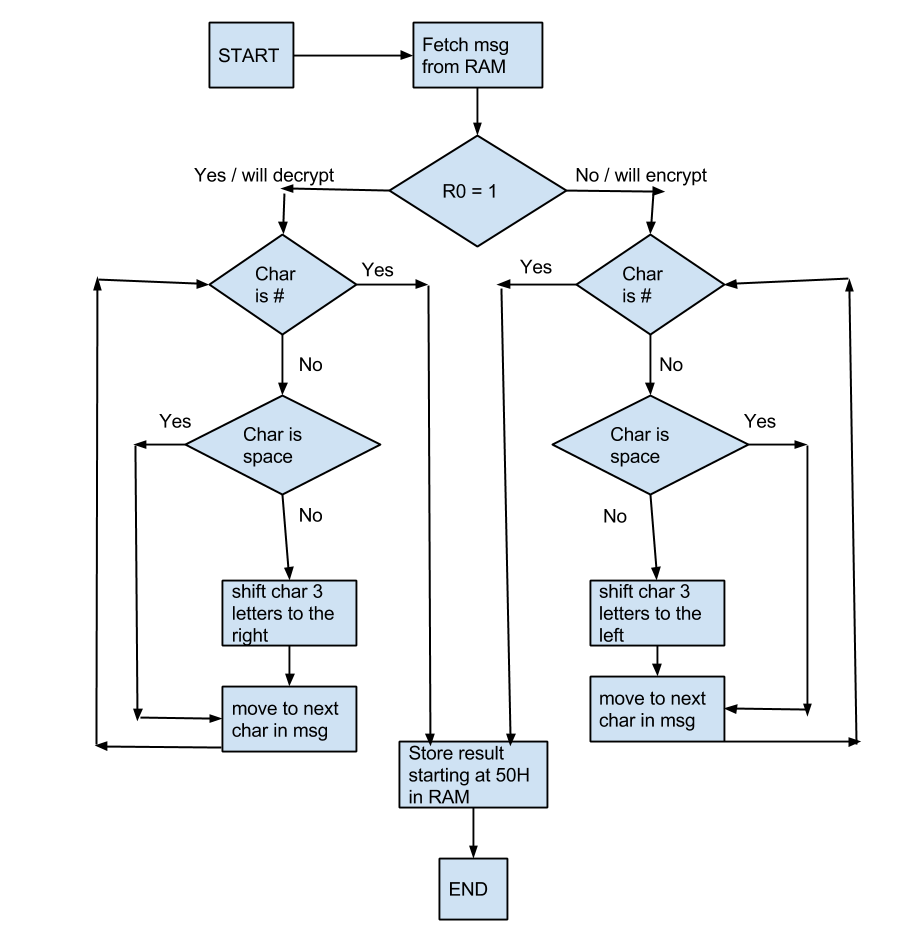
# Functionality

Everything in this phase works **except** the last part, the part where I am required to display the result of the encryption/decryption on the LCD. The result is stored successfully in RAM starting at memory address 50H. The only problem is outputting the result into the LCD. I tried everything I could think of. I was unsuccessful.

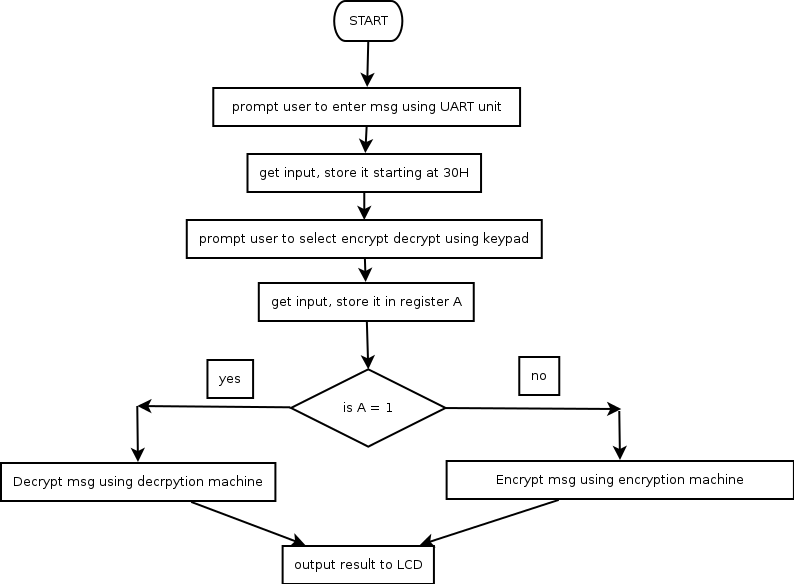
# Algorithm

Here are some flow charts. I have included them separately in PNG format as well because I thought it maybe of convenience.

Here is the encryption/decryption machine:



Here is the main flowchart:



# Appendix

Source code: