

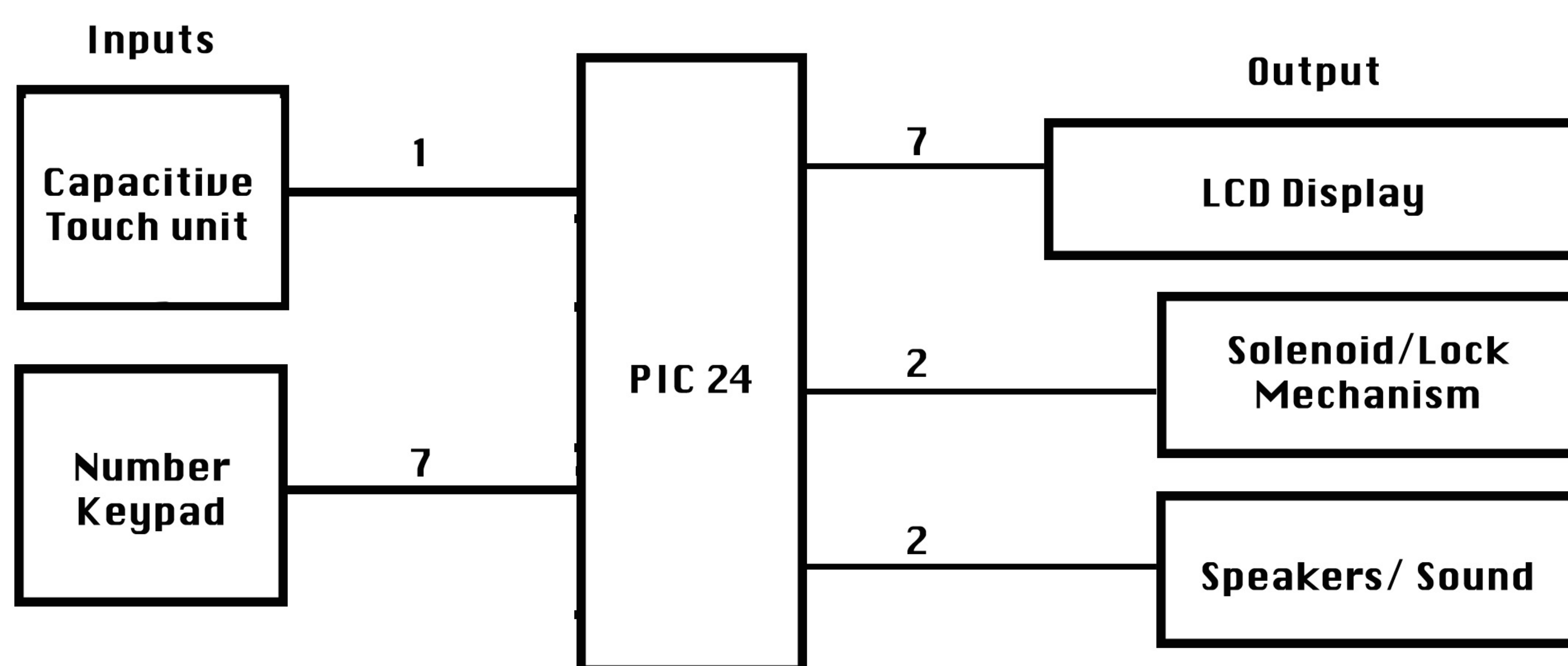
Smart Lock Box

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Problem Statement

Traditional locked storage boxes are hard to break, but once someone has the password, there is no longer a restriction to their access. A digital locked storage box enhances security measures by allowing the user to modify the passcode when desired.

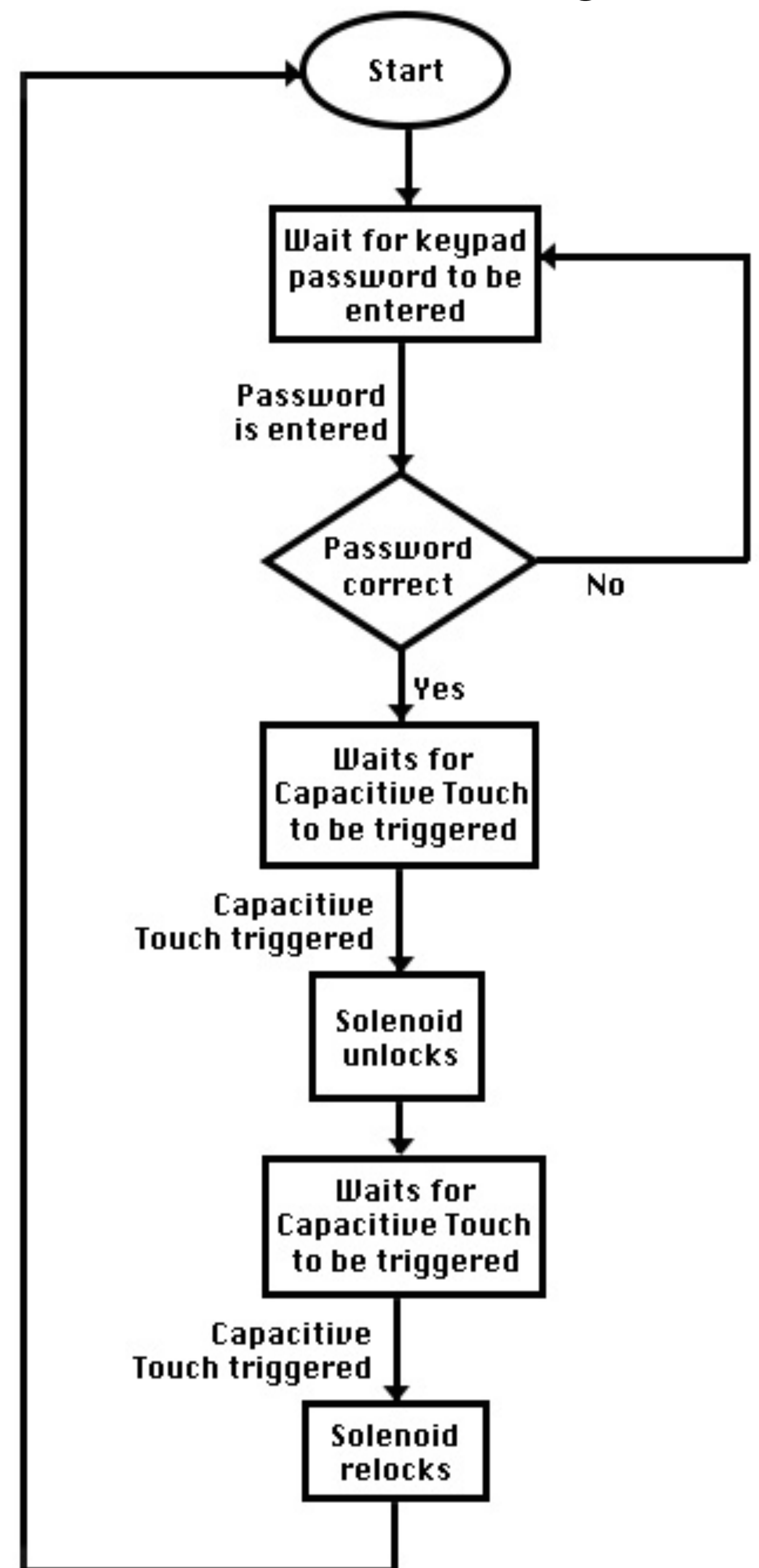
System Diagram



Results

The system is first initialized when the LCD prompts user to enter their password. The password mechanism is interfaced by using a series of coded inputs which allows the user to enter the sequence of keys. The password is then verified by the PIC24 microcontroller. If the password is wrong, the LCD prompts the user to enter the password again. If the password is correct, the user is then prompted to trigger the capacitive touch mechanism in order to confirm the opening of the box. This mimics our desire to implement a fingerprint scanner which adds another level of security to the digital lock box. Our project performs the goals outlined in the project definition as desired.

Software Flow Diagram



Microcontroller Peripherals

- | | |
|---------------|---------------|
| • OC1/OC2 | • IC1 |
| • TMR2/TMR3 | • UART1 |
| • AD1PCFGL | • LAT |
| • PORT | • B0/A0/B2 |
| • A1/A2/A3/B1 | • B4/B5/B6/B7 |
| • ODC | • B13/B14/B15 |
| • B15/B14/B5 | • A4 |