

## Medicine Reminder System

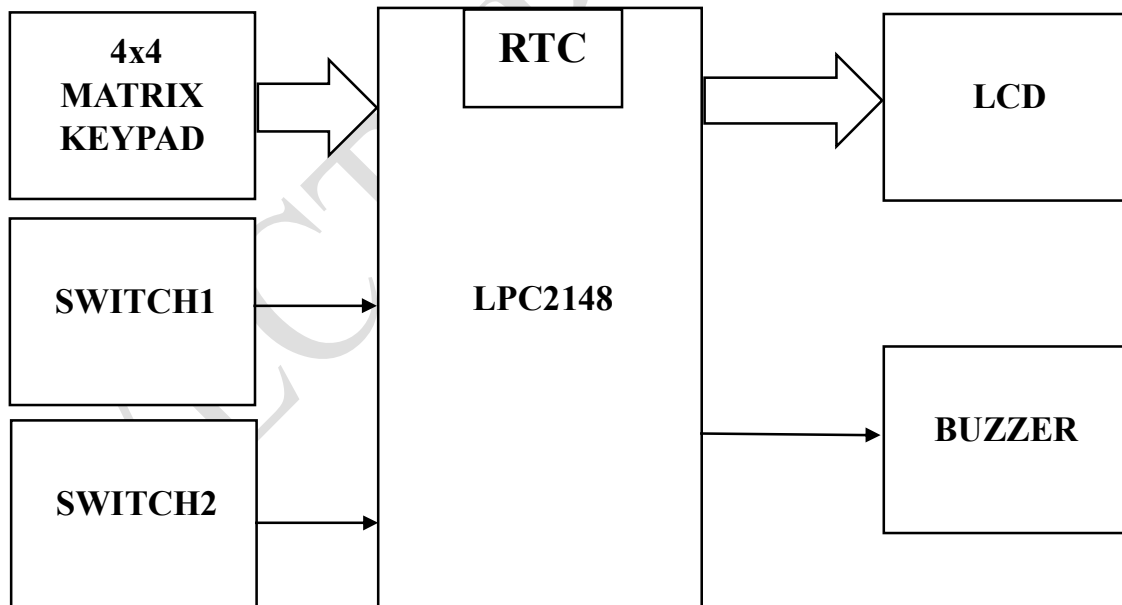
### AIM:

To design a medicine reminder system using an **LCD**, **4x4 matrix keypad**, **on-chip RTC**, **switches** and **buzzer** that helps users take medicines on time. The system allows the user to set multiple medicine schedules, alerts them when it's time to take the medicine.

### OBJECTIVE:

1. Display RTC information (date, time) on an LCD.
2. Allow users to modify RTC settings via a 4x4 keypad.
3. Provide functionality to set medicine time schedule.
4. Give the alert based on medicine time matches with current time.

### BLOCK DIAGRAM:



## **REQUIREMENTS:**

### **HARDWARE REQUIREMENTS:**

- LPC2148
- 16X2 LCD
- 4X4 MATRIX KEYPAD
- BUZZER
- SWITCHES
- USB-UART CONVERTER / DB-9 CABLE

### **SOFTWARE REQUIREMENTS:**

- EMBEDDED-C PROGRAMMING
- FLASH MAGIC

## **Working Principle:**

### **1. Setting the Medicine Schedule**

- The user enters the medicine time(s) using the keypad whenever switch1 is pressed.
- The schedule is stored in the microcontroller's memory.
- The LCD displays the saved medicine times along with RTC info.

### **2. Real-Time Monitoring**

- The microcontroller continuously checks the RTC time.
- If the current time matches a stored medicine time, an alert is triggered.

### **3. Alert Mechanism**

- The LCD displays a reminder message (e.g., "Take Medicine Now").
- A buzzer is ON&OFF with respect to specific time interval to alert the user.

### **4. Acknowledgment by User**

- The user presses the switch2 to confirm medicine intake.

## Software Flow:

1. Initialize system: RTC, LCD, Keypad, and Buzzer.
2. Display current date and time on LCD.
3. Allow user to enter medicine schedules using the keypad whenever switch1 is pressed.
4. Continuously check the RTC time.
5. If current time matches a stored medicine time:
  - Display reminder on LCD.
  - Trigger buzzer.
6. Wait for user acknowledgment via switch2 press.
7. After the acknowledgment, again application program will start running from step2.