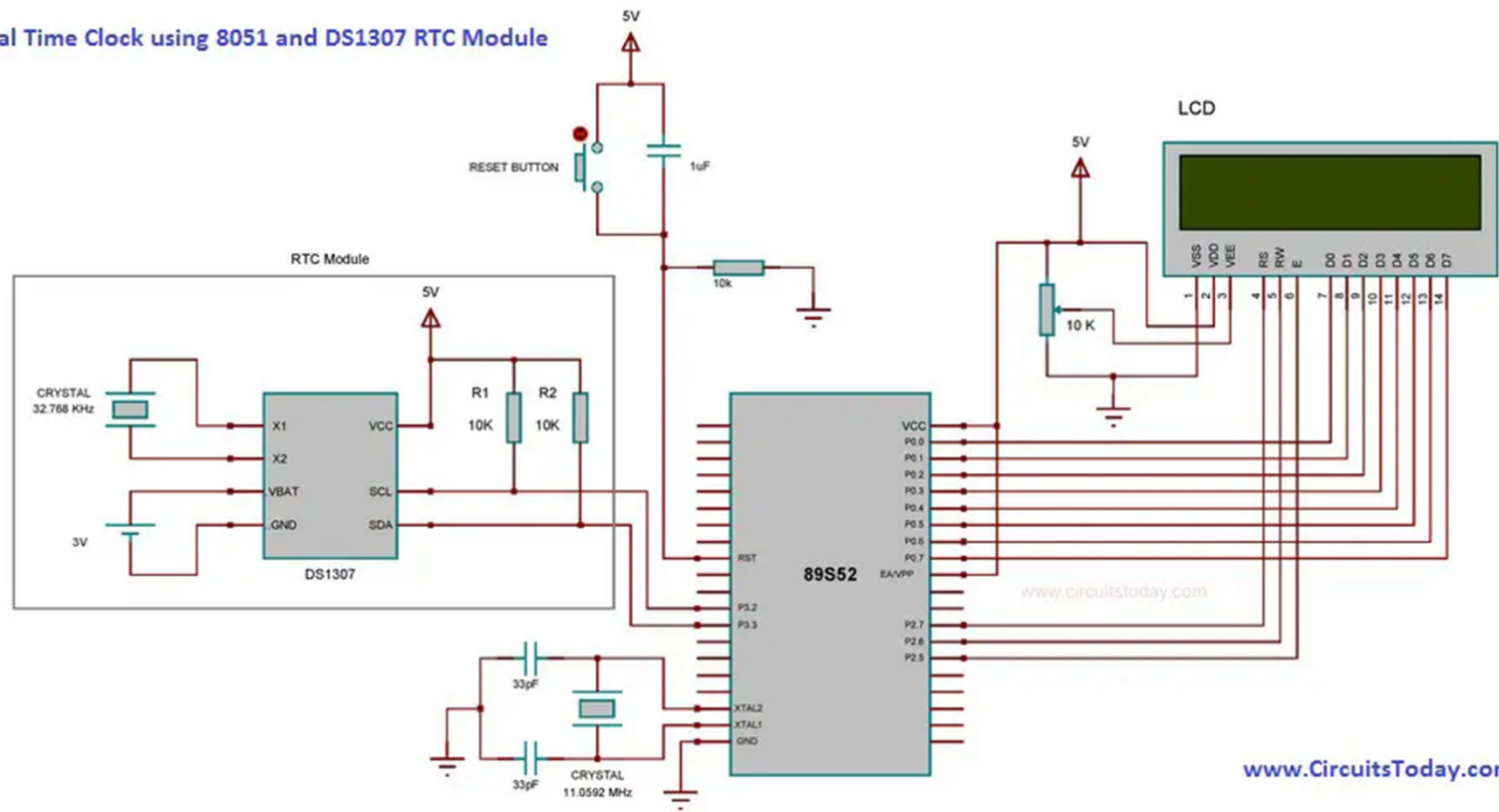# RTC

Real Time Clock using 8051 and DS1307 RTC Module

RTC

- Here we are using an RTC module with clock chip DS1307 based on I2C protocol (Two Wire Protocol).

- The module provides details such us second, minute, hour, day of week, day of month, month and year including correction for leap year.

- It can operate either in 12 Hour or in 24 Hour format. Current consumption of this module is nano ampere range.

- Even a 3V battery can power it for 10 years maintaining an accurate clock and without any external power.

RTC

- DS1307 has a memory area of 64 bytes of which the first 8 bytes are reserved as RTC register area and the remaining 56 bytes are allotted as general purpose RAM.

- The details about current, date and time is stored in its register area as Binary Coded Decimals(BCD).

- The module communicates with the microcontroller using a serial communication protocol called I2C.

- The I2C bus physically consists of 2 active wires. The wires, called **SDA** and **SCL**, are both bi-directional.

- SDA is the Serial Data line, and SCL is the Serial CLock line.

- Every device connected to the bus has its own unique device address, no matter whether it is an MCU or RTC module.