

# I2C



One of the challenges in embedded systems is setting a communication line between multiple sensors and the microcontroller specially when the number of devices increases. **Device addressing, data integrity checking, and synchronization** can be mentioned as some of these challenges.

In this experiment, we connect a DS1307 RTC IC to an Arduino Uno and display the current time and date on a 16x2 LCD. A predefined date and time (Date: 6/3/2021 Time: 9:36AM) should be set on the IC each time the Arduino boots and after that current date and time should be pulled from the IC using I2C protocol and be displayed in a proper manner to the user. Information such as the address of the IC on I2C bus, how to set the initial date and time, and how to pull data from the IC can be found on the device's datasheet.

Proteus components:

SIMULINO UNO, LM016L, DS1307, CRYSTAL

