**Arduino Schedule Alarm**

This project is an Arduino-based schedule alarm system that reads scheduled events from a CSV file stored on an SD card. It triggers an alarm (e.g., LED on) when the current time matches an event time, and it automatically turns off after a specified duration. The system uses a real-time clock (RTC) to keep track of time and schedule events.

**Features**

* Real-time clock integration (RTC\_DS3231).
* SD card reading for event schedules.
* Alarm triggering using an LED.
* Event-based triggering that compares the current time against the event schedule in a CSV file.
* Configurable alarm duration.

**Components Required**

* Arduino board (e.g., Arduino Uno, Mega).
* RTC DS3231 module.
* SD card module.
* LED for alarm indication.
* SD card (formatted as FAT32).
* Jumper wires.

**Library Installation**

**Required Libraries**

1. **RTClib**: For interfacing with the RTC DS3231 module.
   * Install via the Arduino Library Manager:  
     Sketch -> Include Library -> Manage Libraries -> Search for RTClib and install it.
2. **SD**: For accessing the SD card.
   * This library is included in the Arduino IDE by default.
3. **Scheduler**: A custom library included in this project for managing scheduled tasks. The library is located in the libraries folder in this project.

**Installation Steps**

1. Clone or download the repository.
2. Copy the entire project folder to your Arduino sketch directory.
3. The Scheduler library is placed in the libraries folder inside the project. Ensure that the library is placed in the appropriate libraries folder in your Arduino sketchbook.
4. The RTC and SD card modules should be connected according to the pin definitions in the sketch.

**Sketch (Arduino Code)**

The main Arduino sketch is located in the sketch.ino file. It performs the following tasks:

1. Initializes the RTC and SD card modules.
2. Reads the schedule from the CSV file on the SD card.
3. Compares the current time with scheduled events.
4. Triggers an alarm when the time matches an event in the CSV file.
5. The alarm stays active for a predefined duration (RingingTime).

**Usage**

1. Open the sketch.ino file in the Arduino IDE.
2. Upload the sketch to your Arduino board.
3. The system will read the current time from the RTC and compare it against the schedule defined in the dacian.csv file.
4. If the current time matches a schedule entry, the alarm (LED) will trigger for the specified duration.