

SkyTech_PCF8574 Library Documentation

Overview

The SkyTech_PCF8574 Library is a custom Arduino library developed by Patrick from SkyTech Electronics to simplify interactions with the PCF8574 I2C GPIO Expander. This library provides an interface for setting pin directions and reading/writing values to individual pins, making it ideal for remote control of GPIO configurations.

Function Overview

Function Overview

1. Constructor

- SkyTech_PCF8574(uint8_t address)

Initializes the PCF8574 object with a specified I2C address.

2. begin()

- void begin()

Initializes I2C communication. This function should be called in the Arduino setup()

to prepare the PCF8574 for operation.

3. configurePins()

- void configurePins()

Configures the first 3 most significant bits (MSBs) as input pins, with the remaining pins set as output by default.

SkyTech_PCF8574 Library Documentation

4. configPinsDirection(uint8_t numInputs)

- void configPinsDirection(uint8_t numInputs)

Manually sets a specific number of MSB pins as inputs, where numInputs ranges from 1 to 8.

This function provides flexibility in configuring the pin directions according to user requirements.

5. readInputPin(uint8_t pin)

- uint8_t readInputPin(uint8_t pin)

Reads the state (HIGH or LOW) of a specified input pin.

6. writeOutputPin(uint8_t pin, uint8_t value)

- void writeOutputPin(uint8_t pin, uint8_t value)

Writes a state (HIGH or LOW) to a specified output pin.

Instructions for Use

Instructions for Use

1. Include the Library

Add #include "SkyTech_PCF8574.h" to your Arduino sketch.

2. Initialize the Object

Instantiate the library with a PCF8574 address, e.g., SkyTech_PCF8574 myPCF(0x20).

3. Pin Configuration

- By default, use configurePins() for a 3-MSB input setup.

SkyTech_PCF8574 Library Documentation

- Use `configPinsDirection(numInputs)` to specify the number of MSB inputs dynamically.

4. Reading/Writing Pin Values

- Use `readInputPin(pin)` to read from input pins.
- Use `writeOutputPin(pin, value)` to control output pins.

Example Code

Example Code

```
#include "SkyTech_PCF8574.h" SkyTech_PCF8574

myPCF(0x20);

void setup() {
    myPCF.begin();           // Initialize I2C communication
    myPCF.configurePins();   // Sets 3 MSB as inputs, others as outputs
}

void loop() {
    uint8_t inputVal = myPCF.readInputPin(5); // Read from pin 5
    myPCF.writeOutputPin(2, HIGH);           // Write to pin 2
}
```