Porject No : P001

Project Name : naturalFarmingAtHome

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| --- | --- | --- | --- |
| St No | Date | Rev No | Update |
| 1 | 14-04-2025 | P001\_001 | DRAFT |
| 2 | 15-04-2025 | P001\_002 | Updated PIN Configuration table |
| 3 | 19-04-2025 | P001\_003 | Updated old details |
| 4 |  |  |  |
| 5 |  |  |  |

Contents

[1. Project Summary: 3](#_Toc195565126)

[2. Components required: 3](#_Toc195565127)

[3. Circuit diagram: 4](#_Toc195565128)

# Project Summary:

We can grow the natural vegetables at home for this we are creating this project. By growing natural vegetables at home individuals will be rich in health and lifestyle.

# Components required:

1. Arduino Uno
2. Relay (12v,4 amp OUT/ 230V In)
3. LCD Display 3\*16
4. RCT Module

# Circuit diagram:

BLUE TOOTH

RTC

ARDUINO

3\*16 LCD SCREEN

KEYPAD

RELAY (4 no)

220V/12V

MOTOR

7 V Battery

AC SUPPLY

# PIN ALLOCATION:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sr No | From | To | Pin No | Pin No | conf | conf |
| 1 | ARDUINO | RTC | NA | 32k |  | Not used |
| 2 | ARDUINO | RTC | NA | SQW |  | Not used |
| 3 | ARDUINO | RTC | A5 | SCL | Digital (I2C Pin) | I2C Pin (0x68) |
| 4 | ARDUINO | RTC | A4 | SDA | Digital (I2C Pin) | I2C Pin (0x68) |
| 5 | ARDUINO | RTC | VCC | VCC | Vcc\_1 | +5 V |
| 6 | ARDUINO | RTC | GND | GND | GND\_1 | GND |
| 7 | ARDUINO | LCD (74HC595) | VCC | VCC | Vcc\_2 | +5 V |
| 8 | ARDUINO | LCD (74HC595) | GND | GND | GND\_2 | GND |
| 9 | ARDUINO | LCD (74HC595) | D7 | SCK | Digital | Latch |
| 10 | ARDUINO | LCD (74HC595) | D5 | CLK | Digital | Clock |
| 11 | ARDUINO | LCD (74HC595) | D6 | D | Digital | Data Enable |
| 12 | ARDUINO | Relay\_1 | D2 | IN | Digital Out Internal Pull Up | In Pin |
| 13 | ARDUINO | Relay\_1 | VCC | VCC | VCC | VCC |
| 14 | ARDUINO | Relay\_1 | GND | GND | GND | GND |
| 15 | ARDUINO | Relay\_2 | D3 | IN | Digital Out Internal Pull Up | In Pin |
| 16 | ARDUINO | Relay\_2 | VCC | VCC | VCC | VCC |
| 17 | ARDUINO | Relay\_2 | GND | GND | GND | GND |
| 18 | ARDUINO | Relay\_3 | D4 | IN | Digital Out Internal Pull Up | In Pin |
| 19 | ARDUINO | Relay\_3 | VCC | VCC | VCC | VCC |
| 20 | ARDUINO | Relay\_3 | GND | GND | GND | GND |
| 21 | ARDUINO | Relay\_4 | D8 | IN | Digital Out Internal Pull Up | In Pin |
| 22 | ARDUINO | Relay\_4 | VCC | VCC | VCC | VCC |
| 23 | ARDUINO | Relay\_4 | GND | GND | GND | GND |
| 24 | ARDUINO | KEYPAD PCF8574) | A5 | SCL | Digital (I2C Pin) | Latch (0x20) |
| 25 | ARDUINO | KEYPAD(PCF8574) | A4 | SDA | Digital (I2C Pin) | Clock(0x20) |
| 26 | ARDUINO | KEYPAD(PCF8574) | VCC | VCC | Vcc\_1 | -- |
| 27 | ARDUINO | KEYPAD(PCF8574) | GND | GND | GND\_1 | -- |
| 31 | ARDUINO | HC\_05 | VCC | VCC | Power | -- |
| 32 | ARDUINO | HC\_05 | GND | GND | Common ground | -- |
| 33 | ARDUINO | HC\_05 (with LVL Shifter) | D12 | TX | Connect to Arduino RX (with voltage divider) | **D11 (TX)** connects to **HC-05 RX**. |
| 34 | ARDUINO | HC\_05 (with LVL Shifter) | D11 | RX | Connect to Arduino TX (3.3V logic safe) | **D12 (RX)** connects to **HC-05 TX** |
| 35 | ARDUINO | OLED | VCC | VCC | +5v | **VCC** |
| 36 | ARDUINO | OLED | GND | GND | GND | **GND** |
| 37 | ARDUINO | OLED | A5 | SCL | I2C Pin | **SCL (0X3C)** |
| 38 | ARDUINO | OLED | A4 | SDA | I2C Pin | **SDA (0X3C)** |

I2C device found at 0x20 // Keypad

I2C device found at 0x3C // OLED

I2C device found at 0x68 // RTC

Then in your code, you assign those addresses accordingly:

* 0x20 → Keypad\_I2C
* 0x68 → RTC\_DS3231
* 0x3C → OLED (commonly used by SSD1306)

Libraries used for OLD Display :

Information :

TIFDP0002 OLED

|  |  |
| --- | --- |
| **Model Number** | TIFDP0002 |
| **Screen Size** | 1.3 Inches |
| **Maximum Display Resolution** | 128 x 64 |
| **Display Type** | OLED |
| **Scanner Resolution** | 128 x 64 |
| **Native Resolution** | 128 x 64 |

 **Adafruit SSD1306**

 **Adafruit GFX Library**