

Fingerprint entry

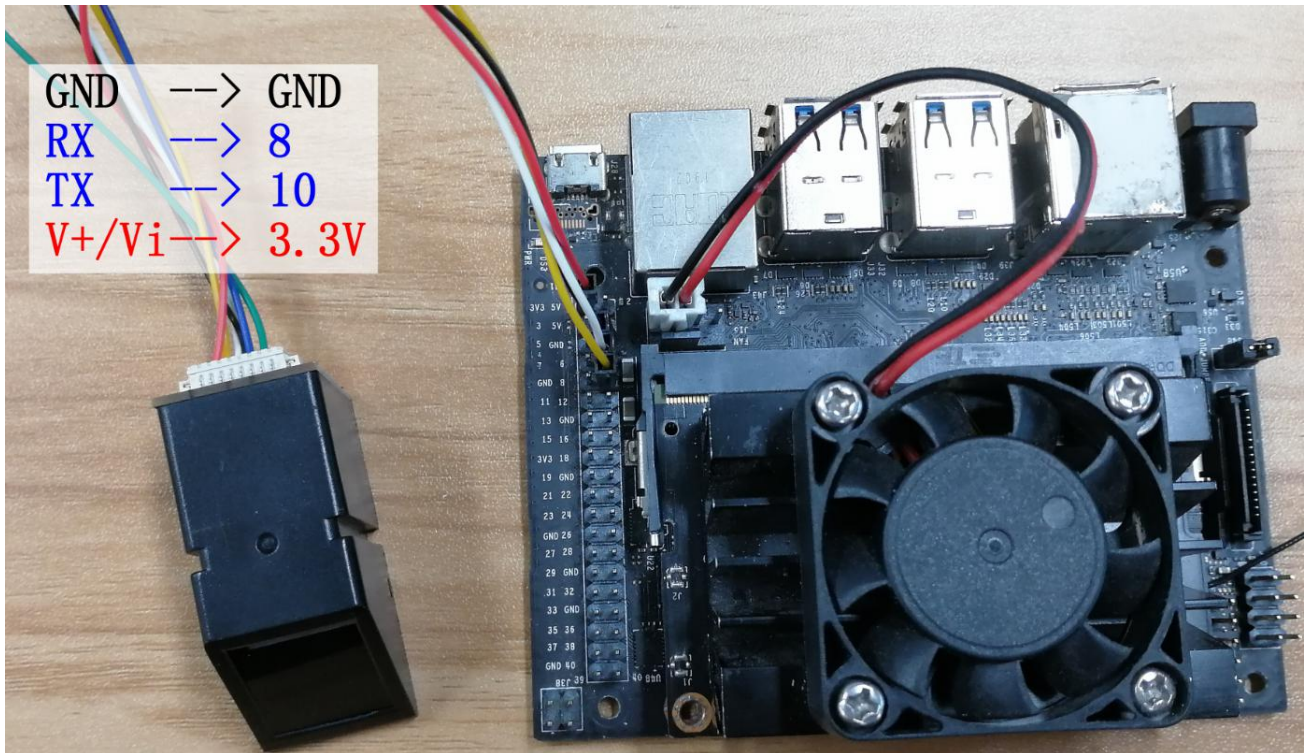
1. Learning target

In this course, we will learn how to use Raspberry Pi and fingerprint recognition module to achieve fingerprint entry function.

2. Preparation

The fingerprint recognition module uses UART communication, and the program uses a virtual serial port. Connect the TX and RX of the module to the 10 and 8 pins of the Jetson NANO board. V+/Vi and GND are connected to 3.3V and GND of Jetson NANO board respectively.

Jetson Nano J41 Header					
Sysfs GPIO	Name	Pin	Pin	Name	Sysfs GPIO
	3.3 VDC Power	1	2	5.0 VDC Power	
	I2C_2_SDA I2C Bus 1	3	4	5.0 VDC Power	
	I2C_2_SCL I2C Bus 1	5	6	GND	
gpio216	AUDIO_MCLK	7	8	UART_2_TX /dev/ttyTHS1	
	GND	9	10	UART_2_RX /dev/ttyTHS1	
gpio50	UART_2_RTS	11	12	I2S_4_SCLK	gpio79
gpio14	SPI_2_SCK	13	14	GND	
gpio194	LCD_TE	15	16	SPI_2_CS1	gpio232
	3.3 VDC Power	17	18	SPI_2_CS0	gpio15
gpio16	SPI_1_MOSI	19	20	GND	
gpio17	SPI_1_MISO	21	22	SPI_2_MISO	gpio13
gpio18	SPI_1_SCK	23	24	SPI_1_CS0	gpio19
	GND	25	26	SPI_1_CS1	gpio20



Every time you start Jetson NANOz, you need to enter the following command to enable permissions

`sudo chmod 777 /dev/ttyTHS1`

3. About code

Please view **finger_save-nano.py** file.

4. Running code

Input following command to run this code.

`python3 finger_save-nano.py`

6. Phenomenon

After the program is run successfully. System will start to initialize the fingerprint recognition module.

If the initialize is successfully, it will display "Initialized successfully". Otherwise, please check the baud rate or wiring of the module.

When the Shell window prints "Press your finger", please put your finger on the fingerprint recognition module. When the Shell window prints "Press your finger again", release your finger and put your finger on the fingerprint recognition module again.

The system will automatically compare the previous and next fingerprints. If they are the same, the Shell window will print "Saved successfully" and automatically set the fingerprint ID to 2.

After we run the fingerprint recognition program, when we put our finger on the fingerprint recognition module, the Shell window will print the ID of the fingerprint.