



## MQ3 Vending Machine

status **active**

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### MQ3 Vending Machine



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## About

This repo contains circuit, firmware and backend for MQ3 Vending Machine Project.



## Getting Started

These instructions will get you a copy of the project up and running on your local machine for development and testing purposes. See [deployment](#) for notes on how to deploy the project on a live system.

### Prerequisites

What things you need to install the software and how to install them.

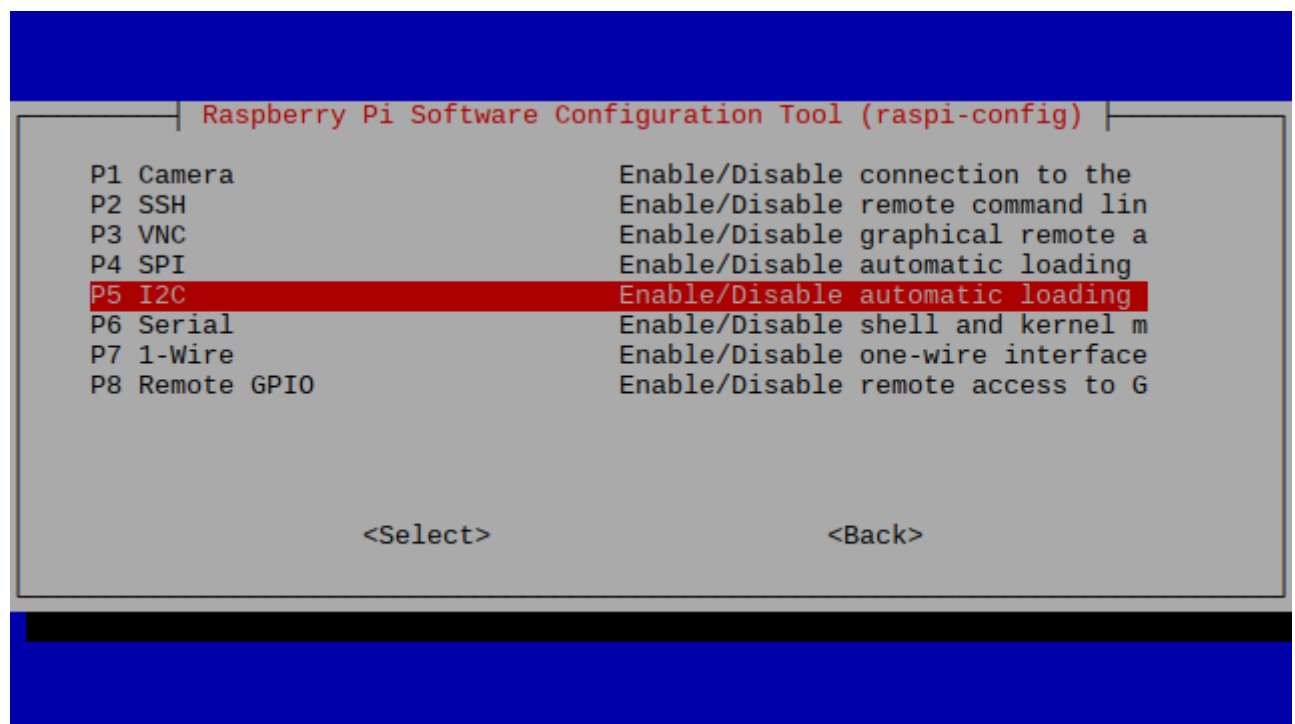
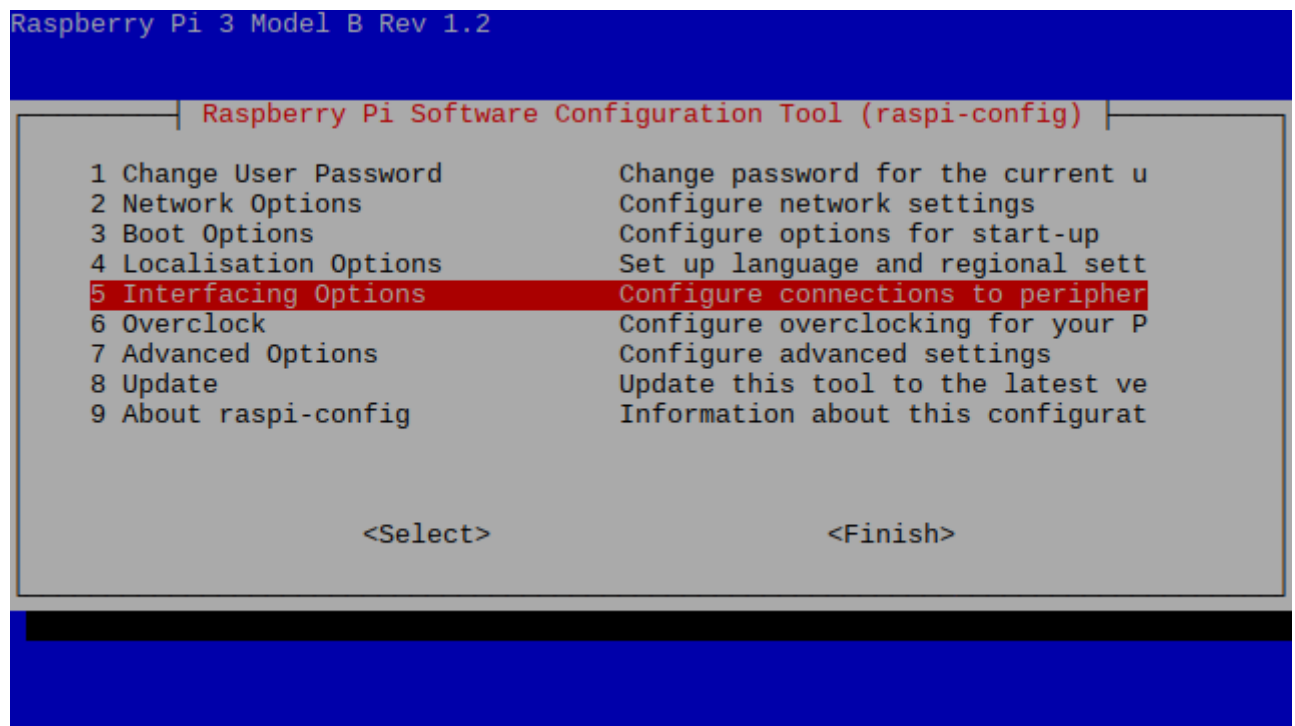
- Raspberry Pi Model 3B, 3B+, 4B or CM4

## Installation and Configuration

A step by step series that covers how to get the Firmware running.

## Raspberry Pi Firmware Pre-Reqs

1. Download and install the latest Raspberry Pi OS Desktop image to your SD card
2. Open the terminal and execute the following command `sudo raspi-config`
3. Then follow the following pictures to enable I2C bus on you raspberry pi



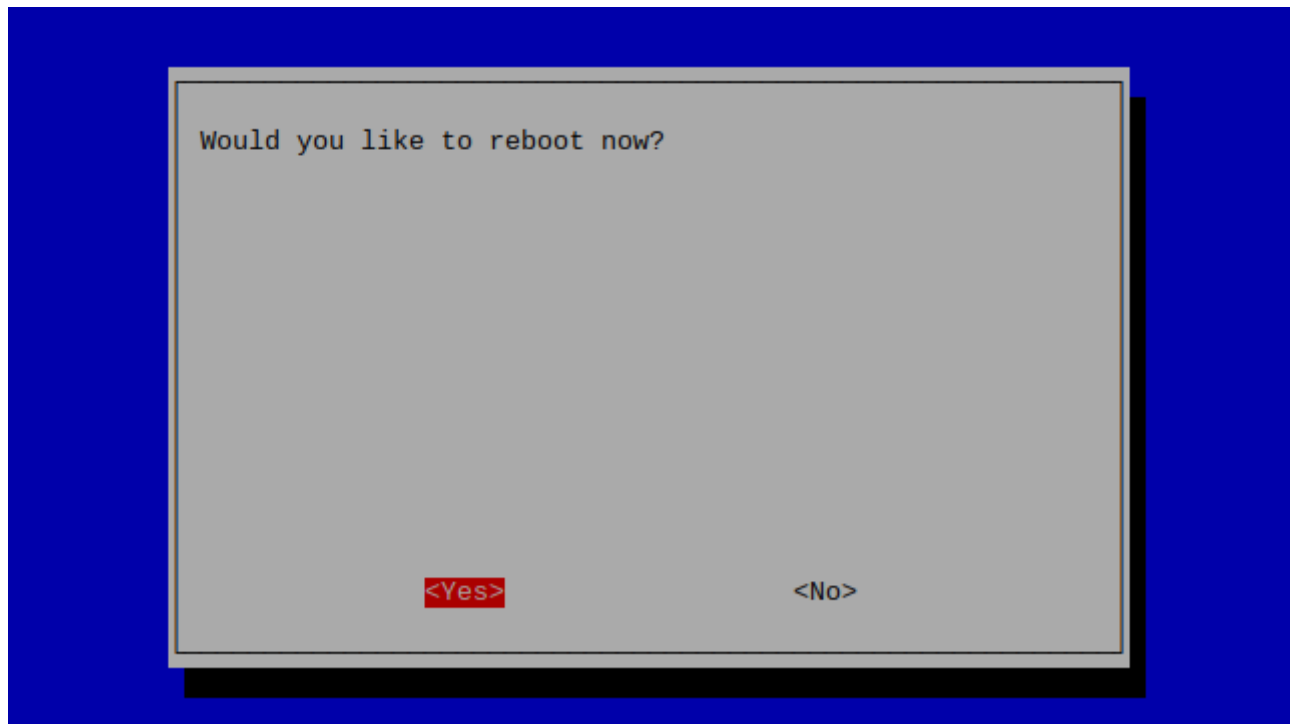
Would you like the ARM I2C interface to be enabled?

<Yes>

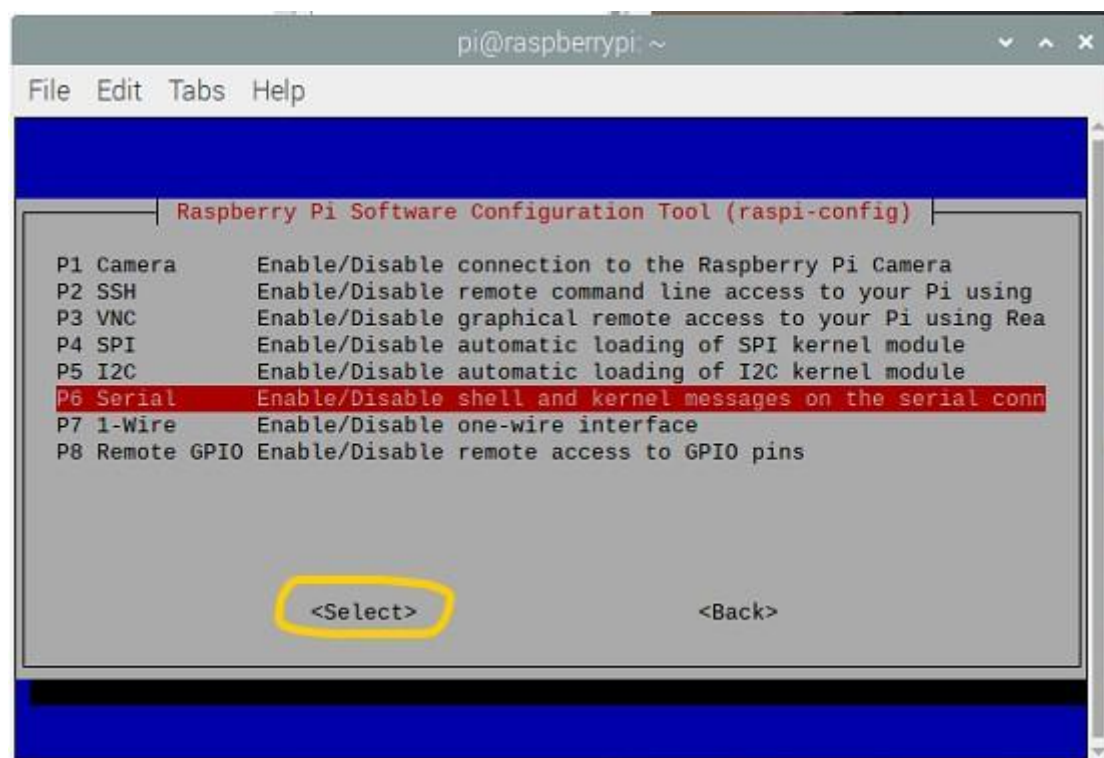
<No>

The ARM I2C interface is enabled

<Ok>



- 
- Then do the same for Serial(UART)



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## Configuring Raspberry Pi and Running the UI

1. Copy Firmware folder to the desktop of your Raspberry Pi, open the terminal of your Raspberry Pi and execute the following commands
- `sudo apt-get update`
  - `sudo apt-get upgrade`
  - `sudo apt install python3-pip`
  - `sudo pip3 install gas-detection`
  - `cd ~/Desktop/Firmware`

- `sudo chmod a+rx starter.sh`

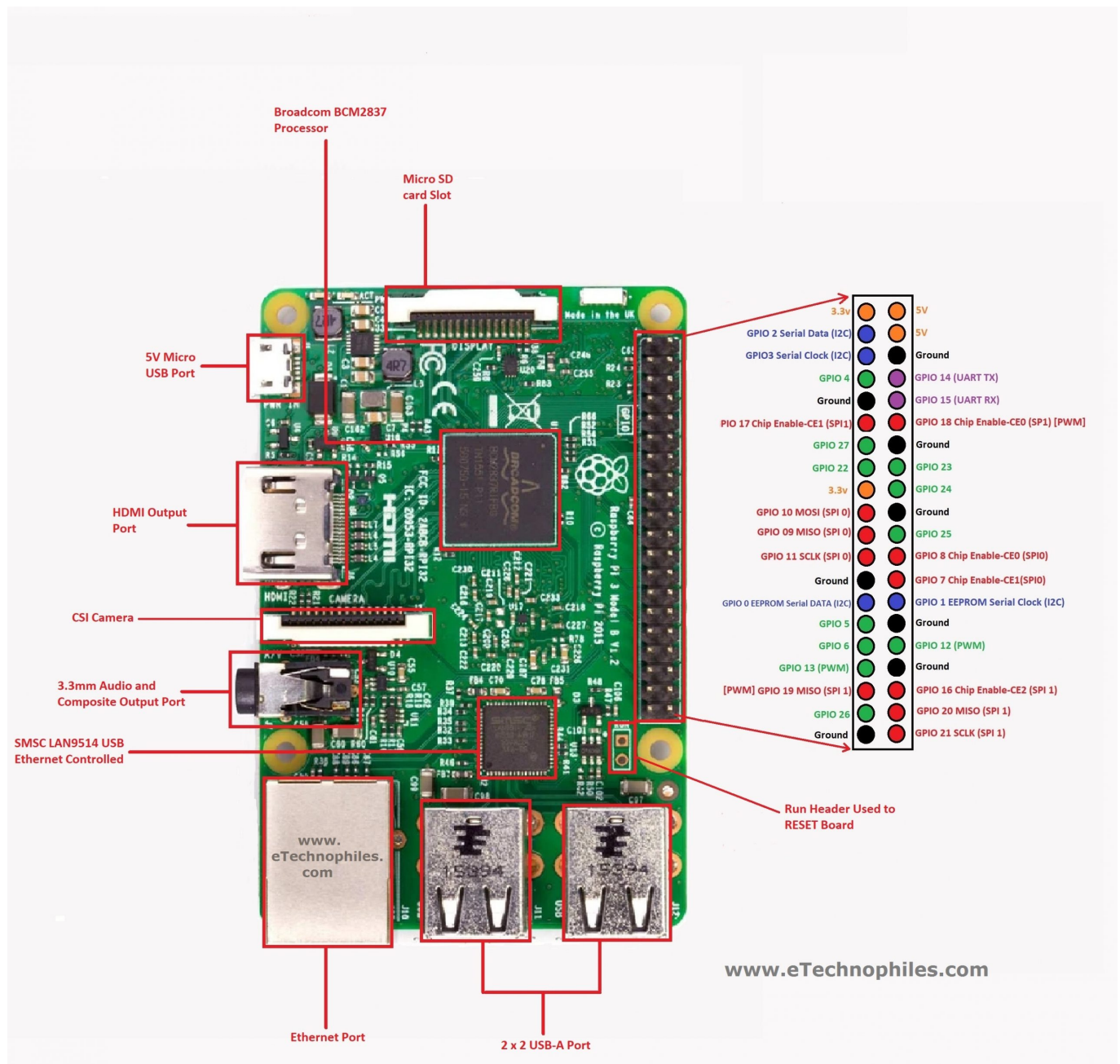
1. To run the program just double click on starter.sh file
2. or execute `python3 /home/pi/Desktop/Firmware/Firmware.py`

## ✕ Testing

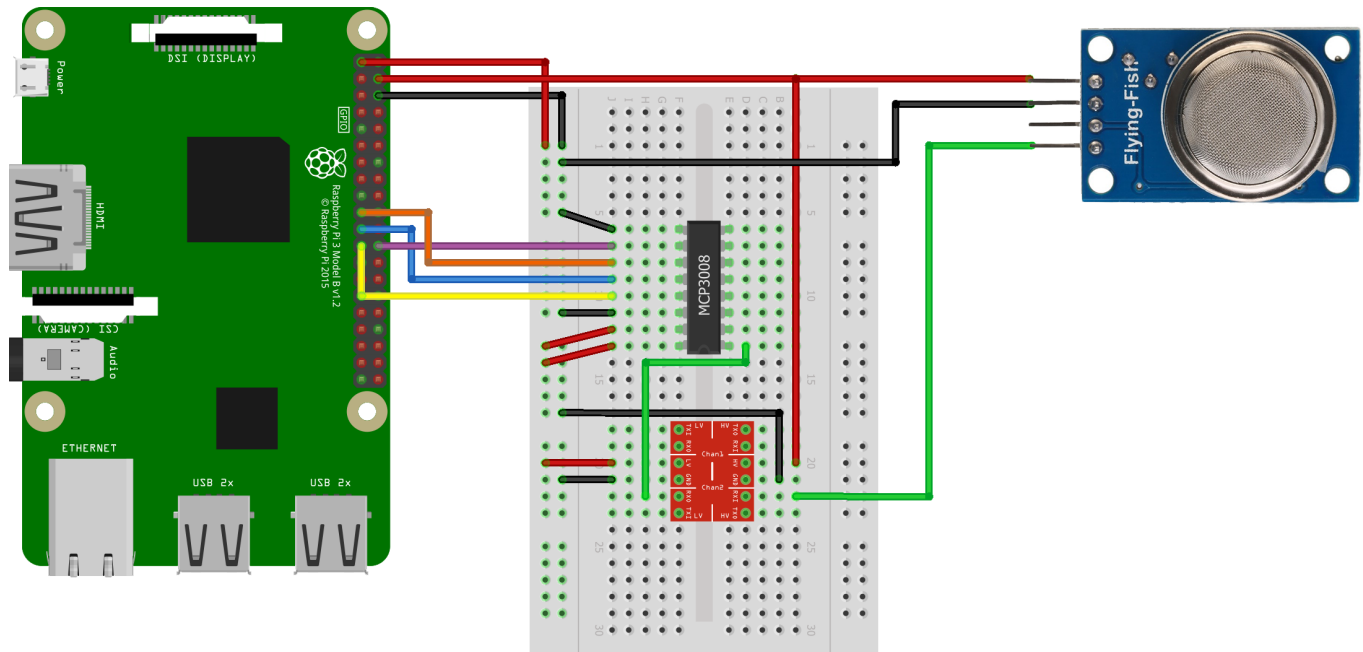
1. The Firmware can be tested on Raspberry Pi 3B, 3B+ or 4B with the following modifications
2. Connect the sensor as shown in the Circuit Diagram section below.

## 🔌 Circuit Diagram

- RPi 3,4 GPIOs Pinout



## Circuit



fritzing

## Components Used

1. Any Raspberry Pi ([https://www.amazon.com/CanaKit-Raspberry-Micro-Supply-Listed/dp/B01C6FFNY4/ref=sr\\_1\\_1?dchild=1&keywords=raspberry+pi+3&qid=1632029848&sr=8-1](https://www.amazon.com/CanaKit-Raspberry-Micro-Supply-Listed/dp/B01C6FFNY4/ref=sr_1_1?dchild=1&keywords=raspberry+pi+3&qid=1632029848&sr=8-1))
2. MQ3 Sensor([https://www.amazon.com/ACROBOTIC-Alcohol-Breakout-Raspberry-Breathalyzer/dp/B07CSNGS87/ref=sr\\_1\\_5?dchild=1&keywords=mq3&qid=1632029867&sr=8-5](https://www.amazon.com/ACROBOTIC-Alcohol-Breakout-Raspberry-Breathalyzer/dp/B07CSNGS87/ref=sr_1_5?dchild=1&keywords=mq3&qid=1632029867&sr=8-5))
3. MCP3008
4. Logic Level Converter([https://www.amazon.com/SparkFun-Logic-Level-Converter-Bi-Directional/dp/B01N30ZCW9/ref=sr\\_1\\_6?crid=2NOGIA43AG9OS&dchild=1&keywords=logi+level+converter&qid=1632029917&srefix=logi+level%2Caps%2C463&sr=8-6](https://www.amazon.com/SparkFun-Logic-Level-Converter-Bi-Directional/dp/B01N30ZCW9/ref=sr_1_6?crid=2NOGIA43AG9OS&dchild=1&keywords=logi+level+converter&qid=1632029917&srefix=logi+level%2Caps%2C463&sr=8-6))

## ✂ Built Using

- [Python3](#) - Raspberry Pi FW
- [Flutter](#) - Cross-Platform Smartphone App Development Framework

## ✍ Authors

- [@Nauman3S](#) - Development and Deployment