# Introduction

Tap-Tap-Pay is a comprehensive solution for managing and processing transactions, inventory, and customer data for small to medium-sized businesses. The system is designed to be easy to set up, configure, and use, ensuring a seamless experience for both employees and customers. This documentation aims to provide a complete guide on how to set up, configure, and use the POS system effectively.

# Requirements

To set up and use the Tap-Tap-Pay system, the following hardware components are required:

1. ESP32 microcontroller
2. 1.4" TFT display (ILI9341)
3. RFID-RC522 (MFRC522) reader
4. MifareClassic 1k card
5. LED
6. Buzzer
7. Power supply, cables, and connectors

# Purpose and Benefits

Tap-Tap-Pay offers numerous benefits for businesses, including:

1. Efficient transaction processing
2. Improved customer experience

# Hardware Setup

To set up the hardware components for the POS system, follow these steps:

## ESP32 Microcontroller

Connect the ESP32 microcontroller to your computer using a micro-USB cable.

## 1.4" TFT Display (ILI9341)

Connect the display to the ESP32 microcontroller using the SPI interface.

* SCK: GPIO18
* MOSI: GPIO23
* MISO: GPIO19
* CS: GPIO15
* DC: GPIO2
* RST: GPIO4
* Power the display using the 3.3V and GND pins of the ESP32.

## RFID-RC522 (MFRC522) Reader

Connect the RFID reader to the ESP32 microcontroller using the SPI interface.

* SDA: GPIO21
* SCK: GPIO18
* MOSI: GPIO23
* MISO: GPIO19
* RST: GPIO22
* GND: GND
* Power the RFID reader using the 3.3V pin of the ESP32.

## MifareClassic 1k Card

Register the MifareClassic 1k card with the RFID reader by scanning the card when prompted.

## Additional Hardware

Connect any additional hardware (e.g., barcode scanner, cash drawer, receipt printer) as required.

# Software Installation

Follow these steps to install the software for the POS system:

Download the latest version of the POS software from the provided link.

Install the required libraries and dependencies:

ESP32 board support

ST7735 library

MFRC522 library

Open the POS software in your preferred Integrated Development Environment (IDE).

Configure the software settings according to your business requirements, such as product inventory, tax rates, and currency.

Compile and upload the POS software to the ESP32 microcontroller.