Flexi Charge with JÖNKÖPING UNIVERSITY School of Engineering

Software Engineering Project Methods 2021
TMJN10 – Project Work
Computer Science & Informatics

Project documentation

Squad: **Charger Plus**

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RFID Documentation

Raspberry Pi RFID Setup

VCC on RFID to PIN 1 on Raspberry Pi.

RST on RFID to PIN 22 on Raspberry Pi.

GND on RFID to PIN 9 on Raspberry Pi.

MISO on RFID to PIN 21 on Raspberry Pi.

MOSI on RFID to PIN 19 on Raspberry Pi.

SCK on RFID to PIN 23 on Raspberry Pi.

NSS/SDA on RFID to PIN 24 on Raspberry Pi.

Setup a Raspberry Pi RFID RC522 Chip

1. First open the raspi-config tool, and we can do this by opening the terminal and running the following command "**sudo raspi-config**"
2. This tool will load up a screen showing a variety of different options. On here use the arrow keys to select "**Interfacing Options**". Once you have this option selected, press **Enter**.
3. Now in this screen select "**P4 SPI**" and press **Enter** once it is highlighted.
4. You will now be asked if you want to enable the SPI Interface, select **Yes** with your arrow keys and press **Enter** to proceed. You will need to wait now.
5. Once the SPI interface has been successfully enabled by the raspi-config tool you should see the following text appear on the screen, "**The SPI interface is enabled**".

6. Type the following Linux command into the terminal on your Raspberry Pi to restart your Raspberry Pi. "**sudo reboot"**
7. Once your Raspberry Pi has finished rebooting, we can now check to make sure that it has in fact been enabled. The easiest way to do this is to run the following command "**lsmod | grep spi**" to see if **spi_bcm2835** is listed.
8. If you see **spi_bcm2835**, then you can proceed

Getting Python ready for the RFID RC522

1. We need first to update our Raspberry Pi to ensure it's running the latest version of all the software. Run the following two commands on your Raspberry Pi to update it.

"sudo apt-get update"

"sudo apt-get upgrade"

(If that's not work try to upgrade first)

2. Now the final thing we need before we can proceed is to install **python3-dev**, **python-pip** and **git** packages. By running the following command on your Raspberry Pi.

"**sudo apt-get install python3-dev python3-pip**"

3. To begin, we must first install the Python Library spidev to our Raspberry Pi using the python "**pip**" tool that we downloaded in the previous step. Run the following command on your Raspberry Pi to install spidev to your Raspberry Pi through pip.

"**sudo pip3 install spidev**"

4. Now that we have installed the spidev library to our Raspberry Pi we can now now proceed to installing the **MFRC522** library using pip as well by following command.

"**sudo pip3 install mfrc522**"

Id number

You need to read your RFID tags to use its ID number. You start read.py and put your RFID tag so you get your id number.

Now you can change the value of the idCard and idTag variables on RFID.py to your id number.