HO CHI MINH CITY UNIVERSITY OF TECHNOOLOGY

FACULTY OF ELECTRICAL AND ELECTRONICS ENGINEERING

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EMBEDDED SYSTEM – GROUP 02
SCHEMATIC EXPLAINATION
RFID CARD READER
Lecturer: PhD – Bui Quoc Bao

	Name	ID	Class
1	Trần Quang Nguyên Ánh	2151047	TT01
2	Văn Thiên Lâm	2151110	TT01

Thành phố Hồ Chí Minh, tháng …, năm …

I.   Overview
1) **Introduce**

This system allows users to read the normal by MFRC 522 and then send the card's id to the computer via UARST.

2) **Main components**

Through its used purporses, the system has 4 main components:
+ MCU: Atmega 328-P
+ RFID RC 522
+ LCD Display
+ Power

II.   Schematic explaination
1) **MCU: Atmega 328-p**

With this MCU we use the adruino nano V3 with has 1 MCU Atmega328 and 1 IC CH340G for load program.

2) **RFID RC 522 (SPI protocol)**

Pins D11, D12, D13 of MCU Atmega328-P connect to D7, D6, D5 of RC 522 respectively.

And the data off ID card will from the antenna to RX and TX1 and TX2 of RC522 and then transfer to MCU Atmega 328-p via SPI protocol.

3) **LCD Display**

LCD will connect to Pins D2 – D8 which Pins D2, D3, D8 are RS, R/W, E respectively. And D4 – D7 is the data bus connecting to DB4 – DB7 of LCD.

4) **Buzzer**

The buzzer will be connected to pin D10 of MCU Atmega328-p for the user know when the processes of reading and writing has been done.

5) **Power**

We use 2 circuits using two 2 IC: LM7805 and AS1117 respectively for drop 9V(adapter) to 5V and 5V to 3.3V, which is the power source for all the components of the system.