# RFID based book issue and mailing the recipient

Batch no. : A3

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# Abstract:

## RFID (Radio-Frequency Identification):

RFID uses electromagnetic fields to automatically identify and track tags attached to objects. The tags contain electronically-stored information. Passive tags collect energy from a nearby RFID reader's interrogating radio waves. Active tags have a local power source (such as a battery) and may operate hundreds of meters from the RFID reader. Unlike a barcode, the tag need not be within the line of sight of the reader, so it may be embedded I he tracked object.

## Node MCU:

Node Mcu is an open source IOT platform. It includes firmware which runs on the ESP8266 WI-FI SOC from Espressif Systems, and hardware which is based on the ESP-12 module. The term "Node Mcu" by default refers to the firmware rather than the development kits.

## Arduino IDE:

The Arduino integrated development environment (IDE) is a cross- platform application that is written in the programming language Java. T is used to write and upload programs to the Arduino board. The Arduino IDE supports the languages C and C++ using the special rules of code structuring .

Passive tags: These look like small tags/ID cards which contains the electronic information( like a chip). One can see the chip if a torch is on the back side of the tag.

The passive tag contains the electronically stored information comes near to the RFID sensor, the radio waves from the sensor detects that passive tag and sends the information to the MCU through Arduino IDE and MCU uses the WI-FI and we shall give the sender and the receiver's email-id in base 64 format. And then we can send whatever information we want to send.

Block diagram: