The main objective of this project is to design a Library Management System using Arduino UNO along with RFID module and Bluetooth module. To make the system secure, the system will be initially turned off and it only be turned on once a person approaches the RFID reader with a genuine RFID tag. If the card is fake, a red led indication along with buzzer alarm will be happened and if the card is genuine, a green led indication along with a short buzzer beep will be happen. This makes the system on. Once the system turned on, the blue LED indication will be there and the person has two options available to choose. One is to rent book from the library and the other one is to check the renting history. To rent a book, the person has to provide his name and mobile number. After entering these data, the person can leave the library with the book after scanning the tag of the book to the RFIF reader. All the information entered by the person along with the name of the book and the renting time will be saved in Arduino’s flash memory and is accessible anytime wanted. To access the saved data from the memory, all you have to do is to check the renting history. After every successful complete interaction, the system will automatically shut down to make it even secure.

We build the project on Arduino - an open-source electronics platform based on easy-to-use hardware and software. Arduino board senses the environment by receiving inputs from many sensors, and affects its surroundings by controlling various actuators. The Arduino board is programmed by writing code in the Arduino programming language and by using the Arduino Integrated Development Environment. Unlike most other programmable circuit boards, the Arduino does not need a separate piece of hardware (called a programmer) in order to load new code onto the board - you can simply use a USB cable.

The main components used in this project are:

* **Arduino Uno Microcontroller board** based on the Microchip ATmega328P microcontroller is used in this project. This board also consists of other components such as crystal oscillator, serial communication, voltage regulator, etc. to support the microcontroller. Arduino Uno has 14 digital input/output pins (out of which 6 can be used as PWM outputs), 6 analog input pins, a USB connection, a Power barrel jack, an ICSP header and a reset button.
* **RFID** consists of two main components, a transponder/tag attached to an object to be identified, and a Transceiver also known as Reader. A Reader consists of a Radio Frequency module and an antenna which generates high frequency electromagnetic field. RFID is a method of data collection that involves automatically identifying objects through low-power radio waves.
* **HC-05 Bluetooth Module** is a Bluetooth serial port protocol designed for transparent wireless serial connection setup. Its communication is via serial communication which makes an easy way to interface with controller or pc.