Bannari Amman Institute of Technology

RFID based bus tracking using GPS in Transpotation

by ICES Members

Most educational institutions & administrators are concerned about student irregular attendance. Truancies can affect student overall academic performance. The conventional method of taking attendance by calling names or signing on paper is very time consuming and insecure, hence inefficient.

WHY BUS TRACK?

Tracking and monitoring of vehicles are increasing in urban areas as many commercial and private vehicles are available large in numbers. Many organisations and individuals find a need for tracking nowadays for safety. Individuals track and monitor their vehicles as a concern for safety. Public transport vehicles are tracked nowadays to provide citizens with transportation details.

SOLUTION

Radio Frequency Identification (RFID) based attendance system is one of the solutions to address this problem.

Working

01 NodeMcu will be connected with network source(indication using buzzer).

02 RFID senes the RFID tags and the pushes the corresponding data to source(indication using led).

03 The collected RFID numbers will be saved in the created Google sheets.

04 The RFID numbers will provide more data like name, roll number with corresponding date and time.

05 With the gained data the attendance can be marked as per programmed for the respective employee or student.

BUSTRACKING USING GPS

- GPS tracker will be fixed in the institutional buses to track the bus's whereabouts.
- It will send the location of the bus by sending data to the app we have created.
- We have our own bus tracking app, that'll provide informations like location, distance travelled by the bus.
- Thus tracking of bus is facilated and helps with crusial information.

Description of Tools used

RFID CARD

Radio Frequency Identification (RFID) refers to a wireless system comprised of two components: tags and readers. The reader is a device that has one or more antennas that emit radio waves and receive signals back from the RFID tag

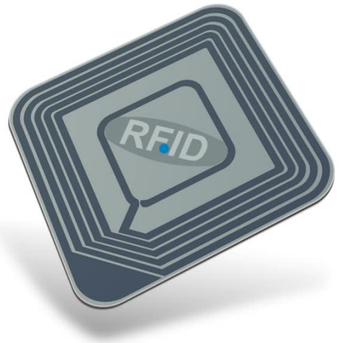
NODEMCU

NodeMCU is an open source firmware. It is a low-cost open source IoT platform with attached Wi-Fi module.

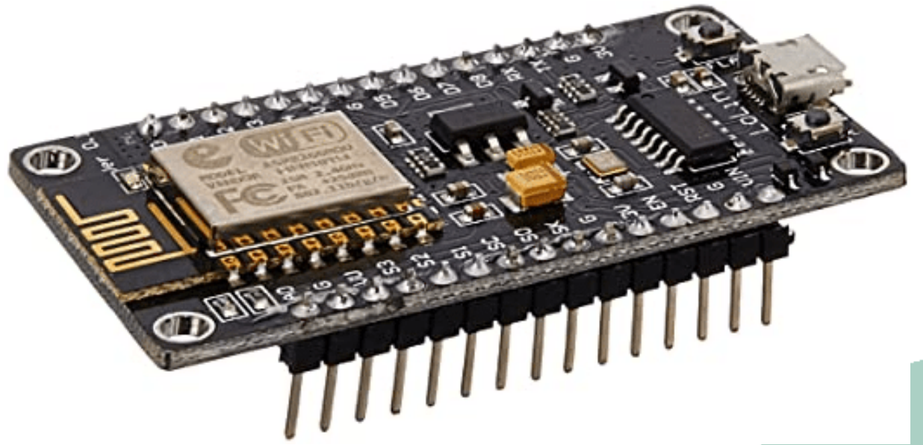
Google Sheets

The Google Sheets online spreadsheet application enables users to create, edit and format spreadsheets online to organize and analyze information.

MAIN COMPONENTS



Radio Frequency Identification



Nodemcu

OUR OWN BUS TRACKING APP
BIT BUS APP

*We have our own bus tracking that shows he live of any bus connected with our system.

*It provides numerous information about the bus.

*It keeps history of location as well so that we can take a look into the wherabouts of the bus in the past too.

VERY CONVINIENT RIGHT...?:)

Features

01 Hands free Operation.

02 Multiple and fast detection of employees.

03 Integrated attendance system with readers at multiple locations.

04 No third person software or server is involved.

05 Cost efficient.

FEATURES

* 3 Seconds Update with Real-time Location Tracking.

*See your vehicle's real time movement on your smart phones using highly sensitive GPS chip and cloud servers.

*Device idle state indication.

*Out of Region Alert.

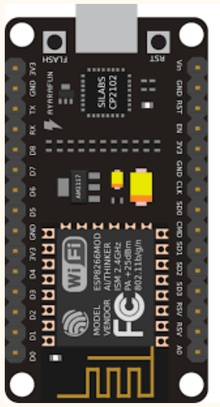
*Multiple vehicle tracking using single application.

RFID Reader

TAG TAP

LED and Buzzer indication

MODEM

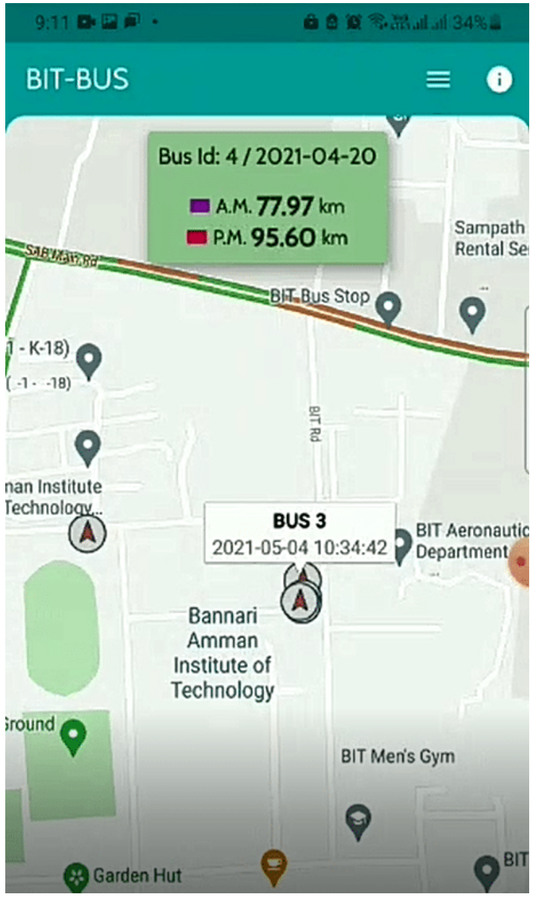


NodeMCU

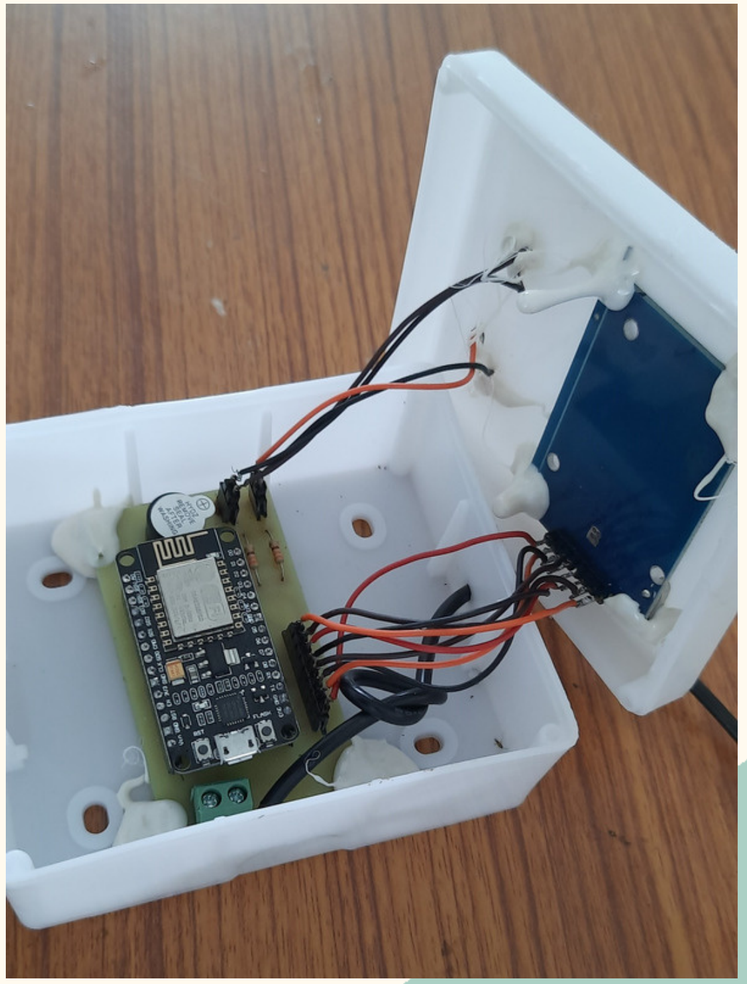
Google Sheets

Sheets

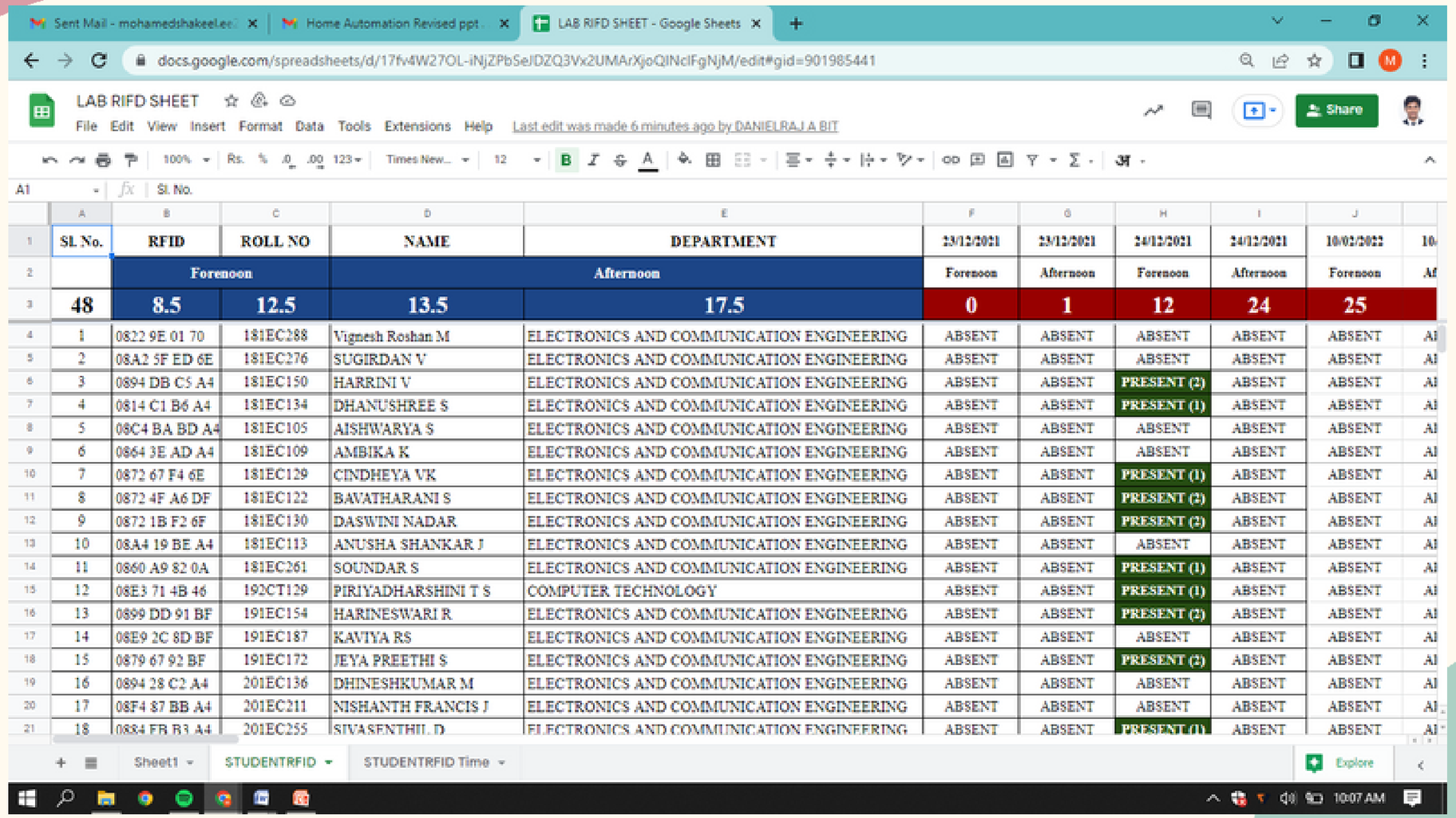
BIT BUS APP


BIT-BUS
Bus Id: 4 / 2021-04-20
A.M. 77.97 km
P.M. 95.60 km
BIT Bus Stop
BIT Rd
BUS 3
2021-05-04 10:34:42
Bannari Amman Institute of Technology
BIT Men's Gym
Garden Hut

Working Model



ATTENDANCE SHEET



Sent Mail - mohamedshakeel.ec | Home Automation Revised ppt | LAB RIFD SHEET - Google Sheets

docs.google.com/spreadsheets/d/17fv4W27OL-iNjZPbSeJDZQ3Vx2UMArXjoQINclFgNjM/edit#gid=901985441

LAB RIFD SHEET

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Share

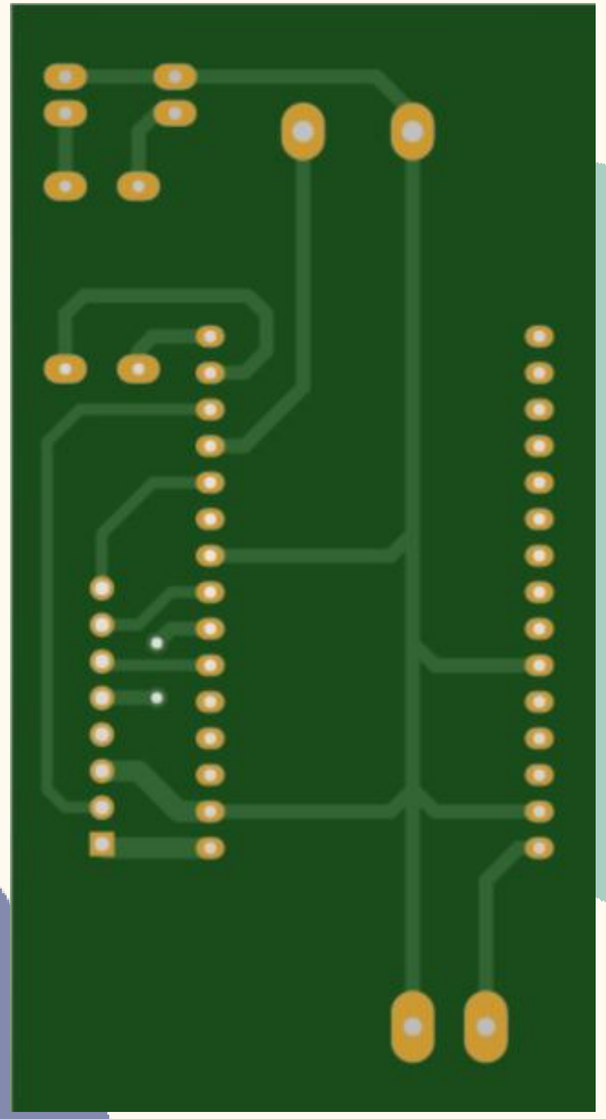
A1 Sl. No.

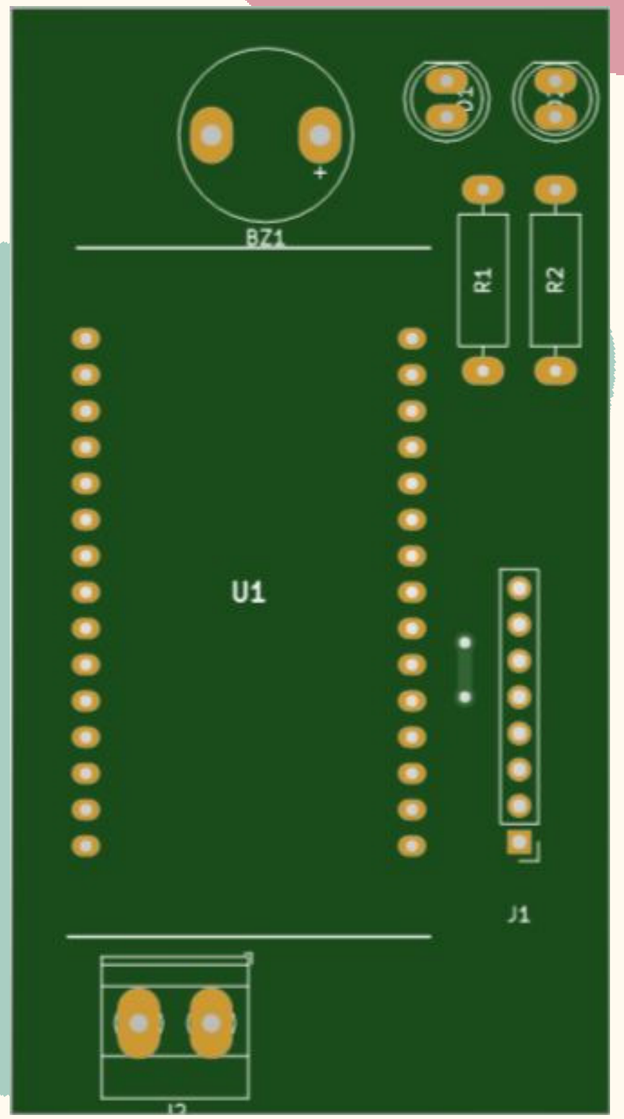
Sl. No.	RFID	ROLL NO	NAME	DEPARTMENT	23/12/2021	23/12/2021	24/12/2021	24/12/2021	10/02/2022	10/
	Forenoon		Afternoon		Forenoon	Afternoon	Forenoon	Afternoon	Forenoon	Af
48	8.5	12.5	13.5	17.5	0	1	12	24	25	
1	0822 9E 01 70	181EC288	Vignesh Roshan M	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	Al
2	08A2 5F ED 6E	181EC276	SUGIRDAN V	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	Al
3	0894 DB C5 A4	181EC150	HARRINI V	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	PRESENT (2)	ABSENT	ABSENT	Al
4	0814 C1 B6 A4	181EC134	DHANUSHREE S	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	PRESENT (1)	ABSENT	ABSENT	Al
5	08C4 BA BD A4	181EC105	AISHWARYA S	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	Al
6	0864 3E AD A4	181EC109	AMBIKA K	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	Al
7	0872 67 F4 6E	181EC129	CINDHEYA VK	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	PRESENT (1)	ABSENT	ABSENT	Al
8	0872 4F A6 DF	181EC122	BAVATHARANI S	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	PRESENT (2)	ABSENT	ABSENT	Al
9	0872 1B F2 6F	181EC130	DASWINI NADAR	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	PRESENT (2)	ABSENT	ABSENT	Al
10	08A4 19 BE A4	181EC113	ANUSHA SHANKAR J	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	Al
11	0860 A9 82 0A	181EC261	SOUNDAR S	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	PRESENT (1)	ABSENT	ABSENT	Al
12	08E3 71 4B 46	192CT129	PIRIYADHARSHINI T S	COMPUTER TECHNOLOGY	ABSENT	ABSENT	PRESENT (1)	ABSENT	ABSENT	Al
13	0899 DD 91 BF	191EC154	HARINESWARI R	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	PRESENT (2)	ABSENT	ABSENT	Al
14	08E9 2C 8D BF	191EC187	KAVIYA RS	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	Al
15	0879 67 92 BF	191EC172	JEYA PREETHI S	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	PRESENT (2)	ABSENT	ABSENT	Al
16	0894 28 C2 A4	201EC136	DHINESHKUMAR M	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	Al
17	08F4 87 BB A4	201EC211	NISHANTH FRANCIS J	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	Al
18	0884 FB B3 A4	201EC255	SIVASENTHIL D	ELECTRONICS AND COMMUNICATION ENGINEERING	ABSENT	ABSENT	PRESENT (1)	ABSENT	ABSENT	Al

Sheet1 STUDENTRFID STUDENTRFID Time Explore

10:07 AM

PCB Board design





Using KiCaD

Thank you!

Do you have any questions for us?