# SCHOOL CALLING SYSTEM

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## 01 ABSTRACT

Technology in schools should make peoples' life easier by enhancing the quality of their time spent in school. With the benefit of IoT, our project improves the quality of time and comfort for people through a flexible and cheap system that helps them to pick up students from school with less effort.

## 02 INTRODUCTION

Many problems might occur to an accountable person when picking up students from school, such as long frustrating waiting, and overcrowding in our high-temperature region. Also, using the traditional way of calling students using a microphone might be annoying due to the loudspeakers and the disruption of names and sounds.

## 03 METHODOLOGY

The first component is a bracelet with each student that vibrates once it receives a call from the driver to pick them up. To give a variety of options to the customer, the call can be made using one of the two methods. The first method is the RFID calling system, a card is scanned to the reader, and the signal will be sent through the internet to the student's bracelet. The second method is a call button on the phone application, the signal will be sent through the internet to the student's bracelet.



RFID Calling System

Calling Application

Cloud
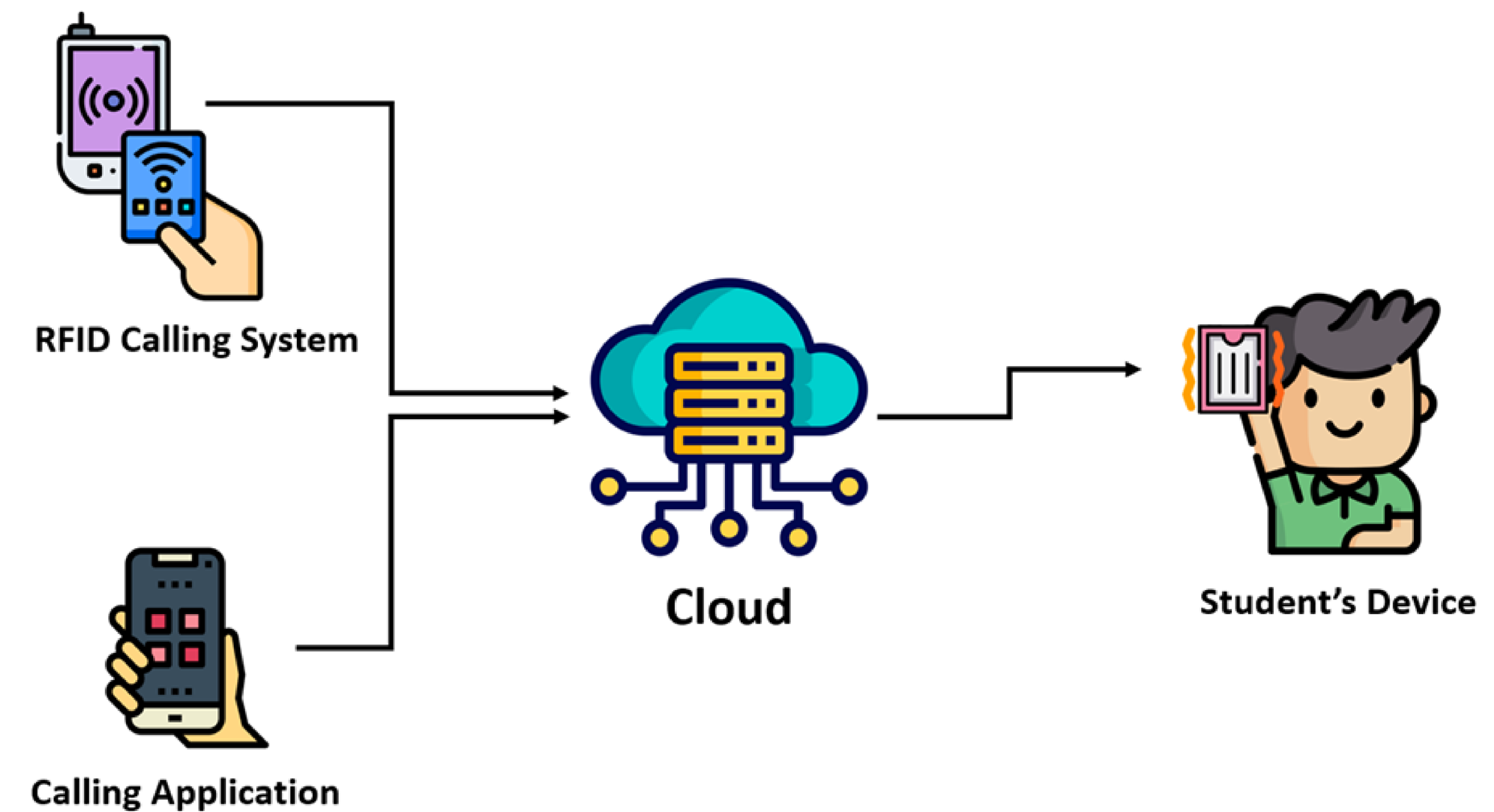
Student's Device

## 04 SYSTEM DESIGN

The first thing was designed is the electrical circuit for the student's bracelet and the RFID reader system. After that, the printed circuit board was designed for both devices using EasyEDA, and with the size of a thumb for the student's bracelet. Finally, the software programming was written using Arduino programming language, and with the help of Arduino IoT Cloud.
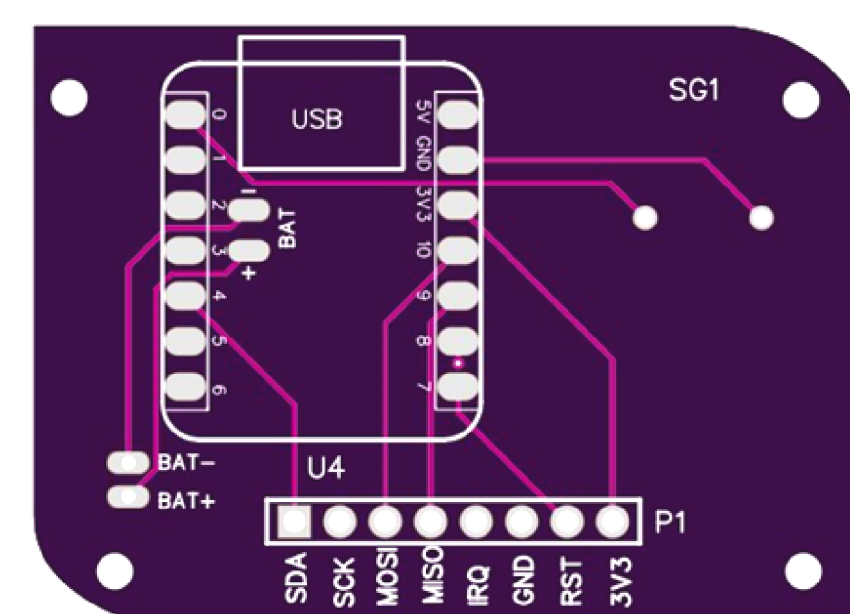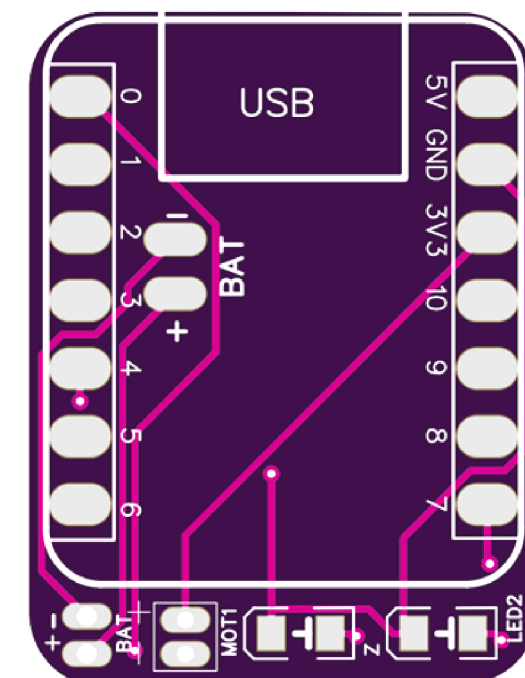


## 05 FUTURE WORK

Here are some ideas that would enhance the project for future work. The first thing is the design of the enclosers concerning the tiny size and weight of the devices. The second thing is the security of the RFID reader device to protect against cyber attacks such as man in the middle, cloning, and brute force attack. Another thing is the accountability by having a record of all the calls made by the RFID reader system or by the application.

## 06 CONCLUSION

The project started by finding the most accruing issue the students, teachers and parents face, which is picking up students from school. The solution was made by making a student's bracelet that vibrates once the driver makes the call. Two methods for making the call were made, either by the RFID reader device beside the school gate, or by the phone application. The work began by designing the circuit diagram followed by the PCB design, which was designed professionally with the size of the fingertips for the bracelet device. After that, the system programming is done using the Arduino cloud platform.