**1. Project Title** **:** Automatic attendance system using RFID

**2. Broad Subject** **:** Computer Science

**3. Project Duration** : 11 Months

**4. Budget** **: Rs. 25,000**

**5. Project Summary:**

Attendance in colleges is generally paper based which may sometimes cause errors. Taking attendance manually consumes more time. So, the proposed attendance system uses RFID technology to take attendance. In this system, each student is issued an RFID tag which is used to identify them whenever the reader is switched on, it will take the attendance. This kind of method increases accuracy and time efficient attendance system. Through this method teacher's work of updating attendance in the database is reduced and providing less time in taking attendance during the class hours.

Each student will be provided with a unique RFID tag with a unique number registered to it. This tag will be attached to their identity card. Every class will be attached with a RFID reader (long range reader). The reader will be turned on automatically for first 10 minutes and the last 10 minutes of the period, so the students entering after 10 minutes will be marked absent and the students who are not present in the last 10 minutes will also be marked absent. Through this way we can ensure the presence of students throughout the period. To ensure the maximum accuracy in the data, there will be a camera fixed to the reader which takes a snap of the class and identifies each faces of the students and cross checks with the RFID attendance. This method is important as students may leave their RFID tags in class which may lead to a positive attention beside their physical absence. By this collection of different data, we can take accurate attendance without any deviations.

**6. Keywords:**

RFID tag, RFID reader, Time efficiency, Automation

**7. Objectives**

- Quick attendance with accuracy.
- Time efficient, providing more teaching time to the teachers.
- Reduce the manual errors and time of the teachers while updating the attendance in the database.
- Continuous tracking of the student's state of presence in the class.

## 8. Introduction

RFID attendance system is the replacement of the traditional paper pen based attendance method. With the latest technologies we can instantly track and record the activity of each student in the class.

## 9. Definition of the Problems

- Paper attendance could lead to manual error.
- It consumes more time during the class hours.
- More time and energy is spent by the teacher while uploading the attendance in to the database.
- In many colleges attendance plays an important role in student's record, so the data should be accurate without any proxy.

## 10. Review of status of Research and Development in the subject

### 10.1 National Status

The RFID attendance project is done in a different method. In this method the students must place their RFID tags on to the reader so that their attendance will be recorded. This method has lots of proxies as it consumes lots of time as each student must keep their tags on the reader and a student could easily place their attendance and bunk the classes. **Reference:https://www.electronicshub.org/rfid-based-attendance-system/**

### 10.2 International Status

**-NIL-**

## 11. Novelty Importance of the proposed project in the context of current status

Importance of this project is to deliver a most efficient and accurate method of taking attendance in colleges and schools. By this method many teachers and students could be benefitted as their work load and presence in class is monitored correctly without any errors.

## 12. Patent details *(domestic and international),* if applicable

**-NIL-**

## 13. Work plan and Detailed technical information

### 13.1 Methodology

This whole process requires RFID tags, RFID readers, controlling unit, database management system.

1. Installing the RFID reader in in a desired place so that its range is maximum in all direction. RFID tag is provided to each student with a unique number.
2. The RFID reader must be programmed in such a way that it is able to communicate effectively with the controlling unit.
3. The database must be created to save the data in an efficient way. It must give accurate data when retrieved i.e. it must be able to display attendance of a single student or the whole class according to the requirement of the user.
4. The reader, controlling unit, database must be integrated to complete the process.
5. The system must be tested several times and debugged according to the problem.

**14. Time schedule of activities giving milestones**

- Installing RFID components – 3 months
- Connecting RFID reader with the controlling unit – 2 months
- Designing the database – 2 months
- Integration – 2 months
- Final testing of the whole process – 2 months

**15. Deliverables**

- Quick attendance.
- Reduction in manual errors.
- Time and work consumption for teachers.
- Increase in teaching time than regular teaching hours.
- Could track and record student's activity instantly.
- The errors are considerably very low.

**16. Target beneficiaries of the proposed work**

Both student and teachers are benefitted by this system. Teachers could be benefitted by this method as their time of taking attendance and feeding it to the database is greatly consumed and also the manual errors are minimised. Students are benefitted as their attendance is monitored regularly and accurately as this attendance plays an important role in their academic results.

**17. Suggested plan of action for utilization of research outcome expected from the project**

**17.1 As journal publication**

**-NIL-**

**17.2 Patent filing**

**Possible**

**17.3 Project preparation for submission to external funding**

**-NIL-**

**18. References**


- **https://www.electronicshub.org/rfid-based-attendance-system/**
- **https://www.elprocus.com/rfid-based-attendance-management-system/**
- **http://www.abr.com/what-is-rfid-how-does-rfid-work/**


**19. List of facilities and Equipments available with Department for the project**

- Controlling unit (computer)

**20. Budget Estimates**

| S.No. | Product name | Foreign Or Indigenous | Quantity | Price |
|---|---|---|---|---|
| 1 | UHF Reader (Range up to 6 M) (HSN Code : 8471) | Indigenous | 1 | 18000 |
| 2 | Passive UHF RFID ID Cards | Indigenous | 10 | 350 |
| 3 | iBall robo k20 webcam | Indigenous | 1 | 2000 |

**21. Budget Justification**

| S.No | Product name | Justification |
|---|---|---|
| 1 | UHF Reader (Range up to 6 M) (HSN Code : 8471) | It is used to read the tags which has unique number for each student. |
| 2 | Passive UHF RFID ID Cards | It is used to store unique number of the student. |
| 3 | iBall robo k20 webcam | It is used to count the number of students in the class using facial recognition. |