

INNOVATIVE ATTENDANCE SYSTEM

A Project Report

Submitted in partial fulfillment of the Requirements for the
award of the Degree of

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

By

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203500

Under the esteemed guidance of
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Designation



DEPARTMENT OF INFORMATION TECHNOLOGY
VIDYA VIKAS EDUCATION SOCIETY'S VIKAS COLLEGE OF ARTS,
SCIENCE AND COMMERCE
(Affiliated to University of Mumbai)
MUMBAI, 400083
MAHARASHTRA
2020-2021

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CERTIFICATE

This is to certify that the project entitled, " INNOVATIVE ATTENDANCE SYSTEM ", is bonafied work of **PRADEEP RAJESH VISHWAKARMA** bearing Seat.No: **(203500)** submitted in partial fulfillment of the requirements for the award of degree of BACHELOR OF SCIENCE in INFORMATION TECHNOLOGY from the University of Mumbai.

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ABSTRACT

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.

Radio Frequency Identification (RFID) based attendance system is one of the solutions to address this problem. This system can be used to take attendance for student in school, college, and university.

It also can be used to take attendance for workers in working places. Its ability to uniquely identify each person based on their RFID tag type of ID card make the process of taking the attendance easier, faster and secure as compared to conventional method.

Students or workers only need to place their ID card on the reader and their attendance will be taken immediately. With real time clock capability of the system, attendance taken will be more accurate since the time for the attendance taken will be recorded.

The system can be connected to the computer through WIFI or Universal Serial Bus (USB) port and store the attendance taken inside database. An alternative way of viewing the recorded attendance is by using HyperTerminal software. A prototype of the system has been successfully fabricated.

Acknowledgement

I take this opportunity to express my profound gratitude and deep regards to my guide Mr. Milind Paradkar (Professor, IT/CS dept) for this exemplary guidance, monitoring and constant encouragement throughout the course of this project. The blessing, helping and guidance by him time to time shall carry me a long way in the journey of life on which I am about to embark.

I take this opportunity to express my profound gratitude and deep regards to my guide Mrs. Seema Rahul (HOD, Professor, IT/CS dept) and Mrs. Priyanka Mishra (Professor, IT/CS dept) for their cordial support. Valuable information and guidance which helped me in completing this task through various stages.

I am obliged to staff member of VIKAS College, for the valuable information provided by them in their respective fields. I am grateful for their cooperation during the period of my assignment.

Lastly, I thank alight, my parents and classmates for their constant encouragement without which this assignment would not have been possible.

Declaration

I here by declare that the project entitled, "**INNOVATIVE ATTENDANCE SYSTEM**" done at **place where the project is done**, has not been in any case duplicated to submit to any other university for the award of any degree. To the best of my knowledge other than me, no one has submitted to any other university.

The project is done in partial fulfillment of the requirements for the award of degree of **BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)** to be submitted as final semester project as part of our curriculum.

Name and Signature of the Student

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Chapter 1

Introduction

The term RFID (radio frequency identification) is a one type of electronic device includes a small antenna and a chip. This device is used to transmit the information like persons, animals, books or any stuff between reader and RFID tag using radio frequency electromagnetic fields. It is capable of carrying 2k bytes of data. There are different kinds of RFID systems in the market, which consist of an antenna, a transponder and a transceiver. Some types of tags can be located close to the RFID reader and some tags can be located far from the reader. The operating frequency ranges of these devices mainly include low, mid and high ranges. The low frequency range is from 30kHz to 500kHz, mid frequency range is from 900kHz to 1500kHz and high frequency range is 2.4kHz to 2.5kHz.

1.1 Background:-

The RFID based attendance system is developed using PHP, CSS, and JavaScript. An RFID Based Attendance System Using NodeMCU is a modern attendance system. Hence, is a very interesting project. It can be useful in different places like schools, Colleges, industry and private organizations to register the attendance of students, teachers, employees, etc. to tabulate monthly/daily working hours automatically. When the person with the correct RFID card swipes his/her RFID tag, His/Her arrival time will be stored in system Log. Usually, when the same person swipes his/her RFID tag again, the system will save it as his/her leaving time.

1.1.1 ABOUT THE TOPIC

The main concept of this attendance system using RFID is to maintain the attendance record. Every student is allotted with a particular authorized tag. This RFID tag can be used to swipe to record the attendance in front of the RFID reader.



Fig – 1.1 RFID TECHNOLOGY

1.1.1 ABOUT THE PROJECT

Now, talking about the features of the RFID based attendance system using NodeMCU. The home page displays the admin login page. Unless You login to the system, you won't be able to browse other available options. Hence the system is secured. Basically, the design of the RFID attendance system project is pretty simple. Hence the user won't find any difficulties while enrolling his/her attendance. The user needs to swipe his/her card or a keychain to maintain attendance that includes the entry time as well. The major functions provided to admin are mentioned below:

Admin Panel Login System

- Admin Login/Logout System
- Forgot Password for admin
- Edit and Update admin profile
- Reset Admin Account Password

View and Manage Users

- View users
- Add New User
- Edit and update the existing users
- Remove Users

User Management System

From the admin panel, the admin can enroll new users, update and remove users from the user management system. Further, the admin can view all the attendance records.

Enroll New Users/Update/Remove

Manage Device

Device Management System

- Add new device
- Update existing device
- Delete device
- Update New token to the device
- Change the device mode (Enrollment mode: to register new users to the system, Attendance Mode: To record attendance of registered users)

Add New RFID Scanner Device

Actually, from the devices section admin can add a new device, update the device, and remove the device. To add a new device, you need to enter a device name and its department. Furthermore, you can also update the device token from the device UID Section.

View Users log on RFID Based Attendance System

From the user log menu, you can navigate to all the user's logs data. You can view their arrival and Leaving time as well. Furthermore, It has more functions to filter your logs by user, date, arrival time, leaving time, and filter by different departments, etc. Hence, you can also export those data to excel.

Filter Users Log to export

1.2 Objectives: -

In today's era of digitization, the focus of making our institutions digital or simply we can say that, making a smart institution has been integral part of our education system. Currently in places such as colleges, schools a manual calculations to record the attendance of the students is used. This is done by taking the attendance manually by passing around an attendance sheet for student's signature to record their presence. Details are marked in a register, future analysis of which takes a lot of time and is cumbersome. The aim of our project work is to reduce human efforts in monitoring the attendance of the students by employing a user friendly and automated way of attendance entry that can be recorded using an electronic register. This will save time and also help to identify students with attendance short-falls. Further detail of any student can be obtained within a few clicks at any time. This paper configures a system which specifies an application of RFID and database record entries. RFID is one of the part of Automatic Identification Technology and it is fast & reliable for

identifying any object. Our system eliminates time consuming method of manual attendance as well as maintains record of data entries which can be used for future

administrative purpose. KeywordsRFID Reader, RFID Tag, Automated way of attendance, Cumbersome, Automatic Identification Technology

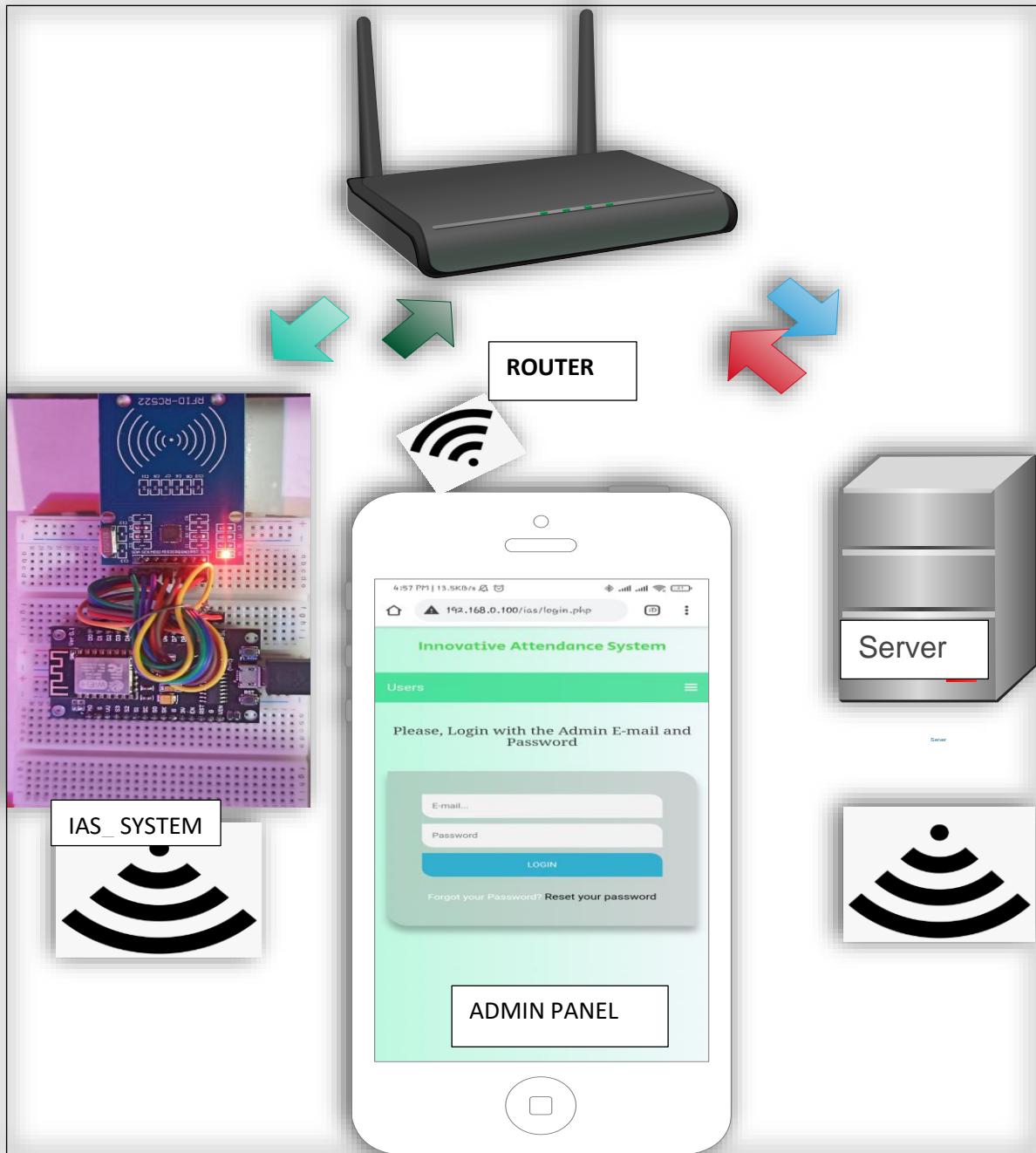


fig - 1.2 Rfid based attendance system (IAS) Proto-type

1.3 Purpose, Scope, And Applicability

1.3.1 Purpose

Attendance needs to be taken at various places including colleges, school for students and in the industries for the login logout time of employees. Radio Frequency Identification (RFID) based attendance management system can be used in any college or university or company. Main objective of RFID based Attendance System project is to take the attendance of students or employees.

Problem with existing attendance system is that wrong attendance can be entered.

1.3.2 SCOPE

Main objective of **RFID based Attendance System** project is to take the **attendance** of students or employees. Microcontroller does the task of storing the **attendance** of the respective person in the Microcontroller memory. The existing **attendance system** is manual and it is taken on paper and it consumes lot of time

1.3.3 Applicability

RFID based Attendance System

An RFID tag is used along with the reader to input the details of the employee/ student for tracking their attendance. When the RFID is swiped on the reader, the data of the tag is compared with data in the microcontroller (interfaced to the reader) to identify the user.

- It is easy to Student or Teacher...& many people etc.
- It is security and Expertise....
- It is easy to use....

1.4 Achievements

Interactive Circle is created to fulfill all the needs of students, teachers, and parents with ease. This provides RFID based Attendance System parents the facility to know about their students' progress, it also helps to interact with teachers. To proper attendance record It reduces the workload for teachers by summarizing their lecture time attendance online, maintaining the record of defaulters etc. This also helps student in to analyze their progress, online notification about student / or employee time table Basically, this website is an interactive tool for teachers, student & parents for their attendance and progress.

1.5 Organizations of Reports:

- First chapter give overview of project and smoothly introduces you to the subject.
- Second chapter is about survey of various technologies so far been used to make **INOVATIVE ATTENDANCE SYSTEM**
- Third chapter is about Requirements of the project and analysis of requirements.
- Fourth chapter is about System Design.

Chapter 2

SURVEY OF TECHNOLOGIES

2.1 FRONT END TECHNOLOGY

2.1.1 INTRODUCTION OF RF-ID TAG

It is predicted that RFID use will continue to increase. It is unlikely to ever be as cost-effective as barcoding, but it will become dominant in areas where barcoding and other optically read technologies are not effective. **RFID Tag Categories** The basic types of RFID tags can be classified as read/write and read only. The data stored on read/write tags can be edited, added to, or completely rewritten, but only if the tag is within the range of the reader. The data stored on a read only tag can be read, but cannot be edited in any way. Read/write tags are much more expensive than read only tags, so they are not used for tracking most commodity items.



Fig -2.1.1 RF-ID tag

RFID tags are further categorized as: Active tags, which contain a battery that powers the microchip and allows it to transmit a signal to the reader. Semi-active (or semi-passive) tags, which contain a battery to run the circuitry of the chip, but must draw power from the magnetic field created by the reader in order to communicate with the reader. Passive tags, which rely solely on the magnetic field created by the radio waves sent out by the reader to create a current that can be received by the antenna within the passive tag. **RF-ID Technology Overview** A RF-ID reader sends out a radio frequency wave to the 'Tag' and the 'Tag' broadcasts back its stored data to the reader. The system works basically as two separate antennas, one on the 'Tag'

and the other on the reader.

Reader:

An RFID reader is a device that is used to read RFID tag data. The reader has an antenna that emits radio waves; the tag responds by sending back data stored in it to Reader.

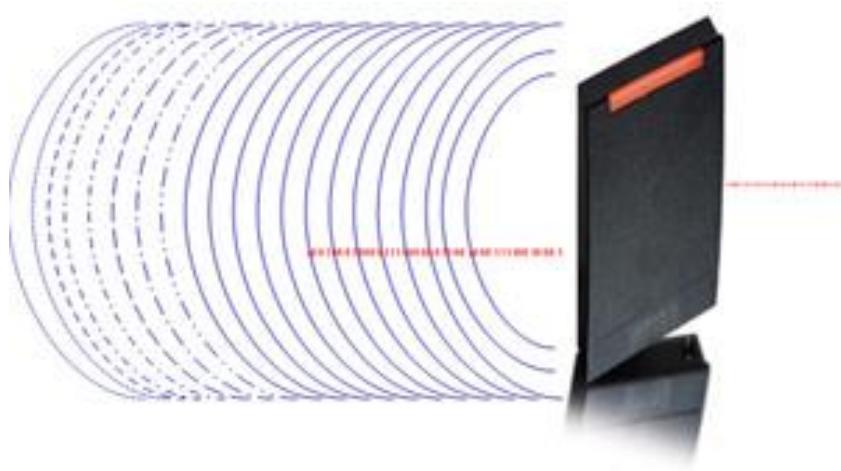


Fig -2.1.2 RF- ID Tag Reader

The data collected from the 'Tag' can either be sent directly to a host computer through standard interfaces, or it can be stored in a portable reader and later uploaded to the computer for data processing. The automatic reading and direct use of the 'Tag' data is often called 'automatic data capture' and with a RF-ID tag system, which works just as effectively in environments with excessive dirt, dust, moisture and poor visibility, you can be assured that it overcomes the limitations of other automatic identification approaches.

How the Low Frequency Tag system works

When the transponder, which is battery free, is to be read, the reader sends out a 134.2 KHz

power pulse to the antenna lasting approximately 50ms. The magnetic field generated is 'collected' by the antenna in the transponder that is tuned to the same frequency. This received AC energy is rectified and stored on a small capacitor within the transponder. When the power pulse has finished the transponder immediately transmits back its data, using the energy stored within its capacitor as its power source.

In total 128 bits are transmitted (including error detection information) over a period of 20ms. This data is picked up by the receiving antenna and decoded by the reader unit. Once all the data has been transmitted the storage capacitor is discharged resetting the transponder to make it ready for the next read cycle. The period between transmission pulses is known as the 'sync time' and lasts between 20ms and 50ms depending on the system setup.

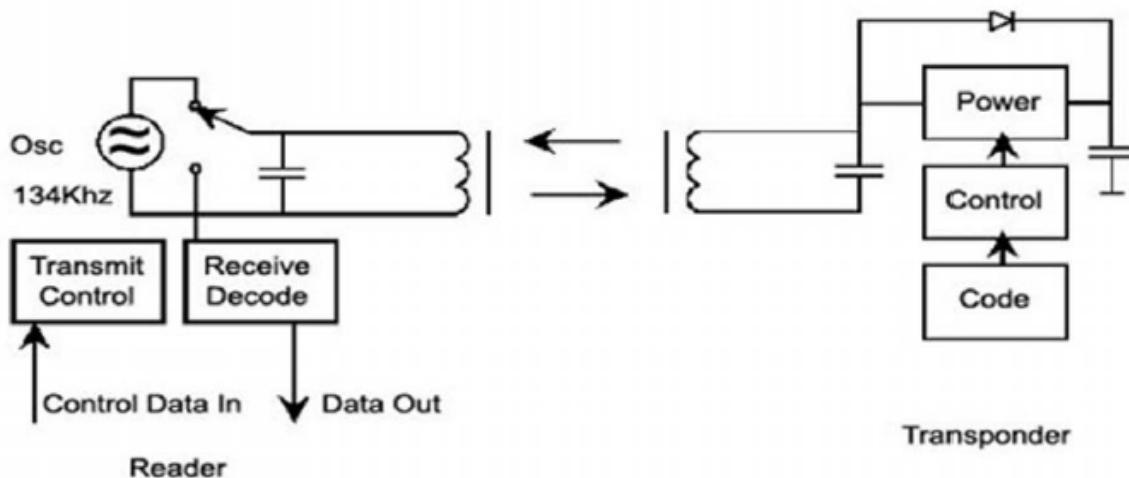


Fig 2.1.3 RFID transmission technique used between the transponder and the reader

The transmission technique used between the transponder and the reader is Frequency Shift Keying (FSK) with transmissions between 134.2kHz and 124.2kHz. This approach has comparatively good resistance to noise while also being very cost effective to implement.

2.1.2 Reasons To Choose RF-ID Technology

The use of **radio frequency identification** i.e. **Rfid** has become established in the last few decades. Rfid technology is used for **identifying products and assets**, and **capturing data**. Capitalizing rfid has increased swiftly due technology development and iot (internet of things). This generates extensive opportunities for new rfid applications. Rfid delivers better knowledge for business development.

What are the main advantages achieved with rfid?

1. Processes become more efficient through automatization

With help of rfid, data is captured accurately and automatically from processes without extra manual work. Digital data capture reduces slow manual paper work. Automatically captured information is also more accurate and error-free. Automatized processes require less resources and become quicker.

Variety of reports from process phases are gained easily, as well as forwarding data to other information systems. Rfid helps to make processes visible throughout the organization. In a long run, processes become more intelligent, which enhances operations and brings cost savings. Tyre factory **tiger** used rfid to develop their whole production process traceable.

2. Logistics and supply chain will speed up

Visibility and product traceability in different phases of logistics and warehouse management, can be enhanced with rfid technology. With rfid-systems, even hundreds of items can be identified easily and quickly in e.g. Receiving, packaging and dispatching of products. Automatic identification decreases errors compared to manual handling, hence it is easy to compare the content of the delivery to the original order. Monitoring and tracking of deliveries are improved. Warehouse management with rfid helps increasing efficiency by enhancing product circulation, minimizing stocks and investments.

Improved efficiency saves costs. **Lindström group** speeded up their supply chain remarkably through rfid

3. Assets and products are easily tracked and inventory automated

Items and company assets are nowadays widely connected to network (iot), which can be accomplished with rfid technology. Easy tracking of company assets and equipment brings cost savings, makes carrying maintenance services easier and decreases product losses. The location and condition of assets can be traced with an application. Traceability can also create new business, such as product rental.

Automatic identification of products makes inventory quicker and enables automatic re-ordering of products. **Fin avia** utilizes rfid solution when tracking luggage trolleys at the helsinki vantaa airport

4. Material availability is ensured

Rfid technology is used for ensuring material availability in production according to lean methodology. The aim is to ensure just the right amount of material at the right time. Rfid helps optimizing the material usage in production and avoiding overproduction of materials, which minimizes cash invested in stock. The data of material status can be captured through rfid and forwarded to company's information systems. This enables monitoring and planning the production process throughout the organization. Material tracking can be managed with tailored rfid solutions or with

5. Access permissions and user identification are managed easily

In addition to item and asset identification, rfid can also be used for identifying users, e.g. Managing access permissions. Company employees can have an access e.g. To use or pay for property, assets and equipment with nfc technology (nfc uses radio frequency identification), which tracks time or situation of use. Examples of this are access to equipment storages and parking spaces. **Worth** utilizes intelligent wücon compact storage solution with rfid to identify users and stock balances

6. Real-time monitoring and visibility speed up operations

Tracking objects and processes with rfid enables transmitting captured information in real-time. If any problems occur, monitoring situations real-time enables reacting them immediately. Rfid helps to speed up processes and offers a way to deliver client-specific information about deliveries quickly. Quick reaction to situations usually saves also costs. **Molok** capitalizes rfid to manage customer service and real-time maintenance services

7. Work becomes more intelligent

Automated processes and reduced manual work phases enable relocating resources to more productive work. Employees' time is not used in manual registrations, checking and monitoring, hence this work is done more accurately and without manual errors with rfid. More capacity will be available with the same number of employees and this is usually seen as a better customer service. **Certegy** utilizes nfc (rfid) technology in managing maintenance services for safety solutions

8. Capturing critical data from scattered events opens new development potential

Rfid technology can be used for identifying and capturing business critical data in processes and transmitting data to other information systems. With better knowledge, workflows can be improved,

decision making is supported and new opportunities are opened for developing operations and competitiveness.

Rfid can be applied to many business sectors. Benefits achieved through rfid technology enhance business and competitiveness, not to mention cost savings in the long term.

USING RC522 RFID Module

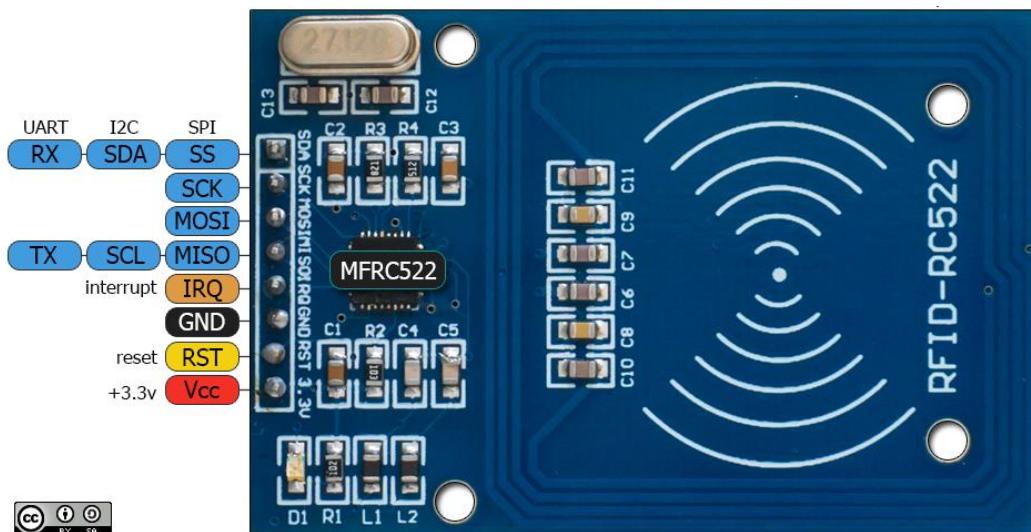


Fig :- 2.1.4 RC522 RFID Module

The RC522 is a 13.56MHz RFID module that is based on the MFRC522 controller from NXP semiconductors. The module can support I2C, SPI and UART and normally is shipped with

Fig: - 2.1.5 RC522 Pin Configuration

Pin Number	Pin Name	Description
1	Vcc	Used to Power the module, typically 3.3V is used
2	RST	Reset pin – used to reset or power down the module
3	Ground	Connected to Ground of system
4	IRQ	Interrupt pin – used to wake up the module when a device comes into range
5	MISO/SCL/Tx	MISO pin when used for SPI communication, acts as SCL for I2c and Tx for UART.
6	MOSI	Master out slave in pin for SPI communication
7	SCK	Serial Clock pin – used to provide clock source
8	SS/SDA/Rx	Acts as Serial input (SS) for SPI communication, SDA for IIC and Rx during UART

RFID card and key fob. It is commonly used in attendance systems and other person/object identification applications.

RC522 Features

- 13.56MHz RFID module
- Operating voltage: 2.5V to 3.3V
- Communication: SPI, I2C protocol, UART
- Maximum Data Rate: 10Mbps
- Read Range: 5cm
- Current Consumption: 13-26mA
- Power down mode consumption: 10uA (min)

Where to use RC522 RFID Module

The RC522 is a RF Module that consists of a RFID reader, RFID card and a key chain. The module operates 13.56MHz which is industrial (ISM) band and hence can be used without any license problem. The module operates at 3.3V typically and hence commonly used in 3.3V designs. It is normally used in application where certain person/object has to be identified with a unique ID.

The keychain has 1kB memory in it which can be used to stored unique data. The RC522 reader module can both read and write data into these memory elements. The reader can read data only form passive tags that operate on 13.56MHz.

How to use RC522 RFID Module

The RC522 has an operating voltage between 2.5V to 3.3V and hence is normally powered by 3.3V and should be used with 3.3V communication lines. But, the communication pins of this module are 5V tolerant and hence it can be used with 5V microcontrollers also like Arduino without any additional hardware. The module supports SPI, IIC and UART communication but out of this SPI is often used since it is the fasted with a maximum data rate of 10Mbps.

Since in application, most of the time reader module will be waiting for the tag to come into proximity. The Reader can be put into power down mode to save power in battery operated applications. This can be achieved by using the IRQ pin on the module. The minimum current consumed by the module during power down mode will be 10uA only. The module can be easily used with Arduino because of its readily available RC522 RFID Arduino library from Miguel Balboa. You can visit his GitHub page for more details on how to use it with Arduino.

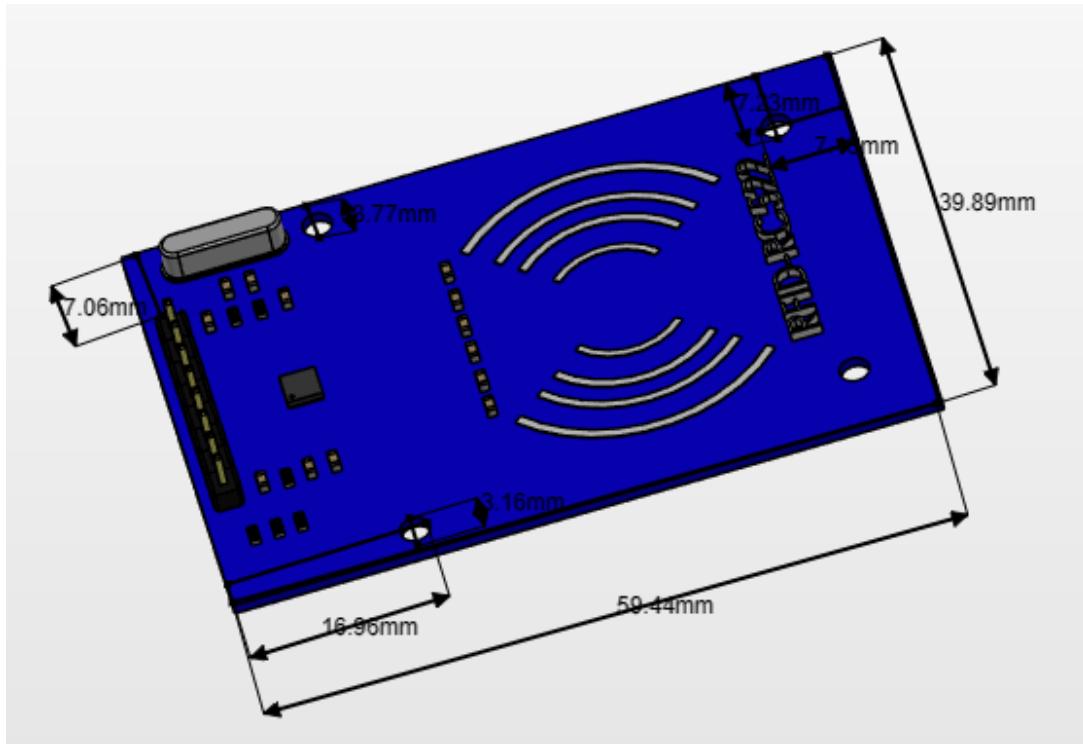


Fig : - 2.1.6 2D model of RC522 RFID module

2.1.3 NodeMCUESP8266

NodeMCU is an open-source firmware and development kit that helps you to prototype or build IoT products. It includes firmware that runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which is based on the ESP-12 module. The firmware uses the Lua scripting language. It is based on the eLua project and built on the Espressif Non-OS SDK for ESP8266.

MCU Definition

MCU stands for MicroController Unit - which really means it is a computer on a single chip. A microcontroller contains one or more CPUs (processor cores) along with memory and programmable input/output peripherals. They are used to automate automobile engine control, implantable medical devices, remote controls, office machines, appliances, power tools, toys etc.



Fig : - 2.1.7 NodeMCU

However, as a chip, the ESP8266 is also hard to access and use. You must solder wires, with the appropriate analog voltage, to its pins for the simplest tasks such as powering it on or sending a keystroke to the “computer” on the chip. You also have to program it in low-level machine instructions that can be interpreted by the chip hardware. This level of integration is not a problem using the ESP8266 as an embedded controller chip in mass-produced electronics. It is a huge burden for hobbyists, hackers, or students who want to experiment with it in their own IoT projects.

But, what about Arduino? The Arduino project created an open-source hardware design and software SDK for their versatile IoT controller. Similar to NodeMCU, the Arduino hardware is a microcontroller board with a USB connector, LED lights, and standard data pins. It also defines standard interfaces to interact with sensors or other boards. But unlike NodeMCU, the Arduino board can have different types of CPU chips (typically an ARM or Intel x86 chip) with memory chips, and a variety of programming

environments. There is an Arduino reference design for the ESP8266 chip as well. However, the flexibility of Arduino also means significant variations across different vendors. For example, most Arduino boards do not have WiFi capabilities, and some even have a serial data port instead of a USB port.

Pins

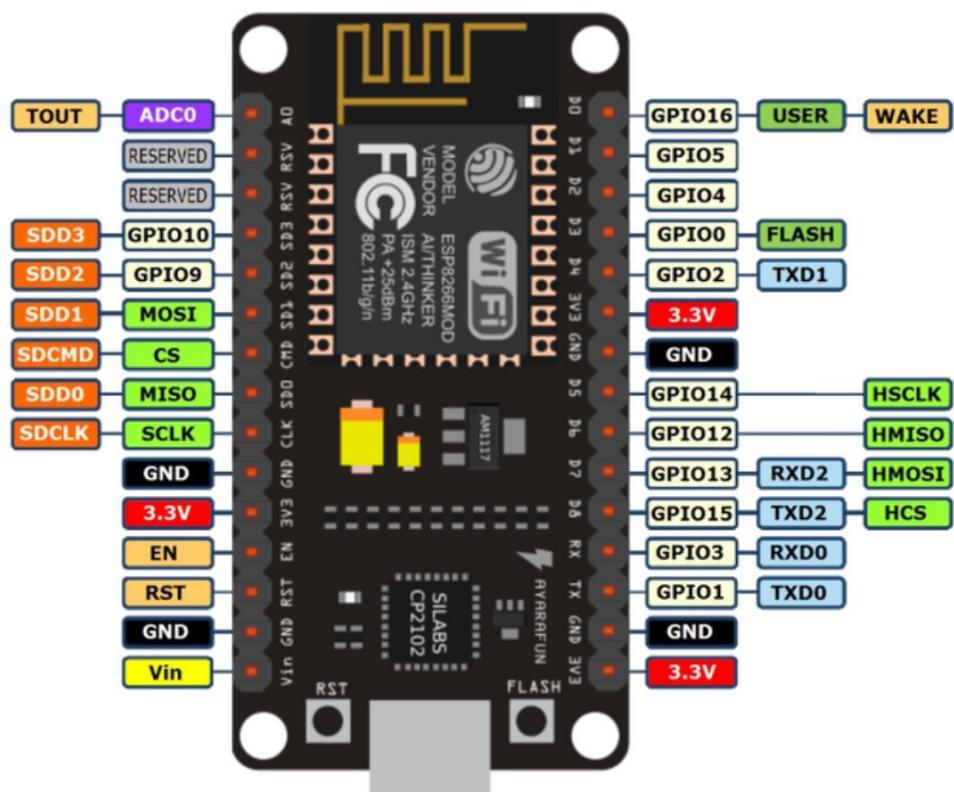


Fig : - 2.1.8 NodeMCU ESP8266 Pins

2.1.4 FEATURES OF LANGUAGES

2.1.4.1 Embedded C : All the hardware interface coding has been done in embedded C Language.

Embedded C is an extension of C language and it is used to develop micro-controller-based applications. The extensions in the Embedded C language from normal C Programming Language is the I/O Hardware Addressing, fixed-point arithmetic operations, accessing address spaces, etc. Embedded C Program has five layers of Basic Structures. They are:

- **Comment:** These are simple readable text, written in code to make it more understandable to the user. Usually comments are written in // or /* */.
- **Pre-processor directives:** The Pre-Processor directives tell the compiler which files to look in to find the symbols that are not present in the program.
- **Global Declaration:** The part of the code where global variables are defined.
- **Local Declaration:** The part of the code where local variables are defined.
- **Main function:** Every C program has a main function which drives the whole code. It basically has two parts the declaration part and the execution part. Where, the declaration part is where all the variables are declared, and the execution part defines the whole structure of execution in the program.
 - Easy to understand
 - High Reliabilit
 - Portability
 - Scalability

2.1.4.2 PHP

All the Logics and web interface is written in PHP Language.

PHP started out as a small open source project that evolved as more and more people found out how useful it was. Rasmus Lerdorf unleashed the first version of PHP way back in 1994.

- PHP is a recursive acronym for "PHP: Hypertext Preprocessor".

- PHP is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites.
- It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.
- PHP is pleasingly zippy in its execution, especially when compiled as an Apache module on the Unix side. The MySQL server, once started, executes even very complex queries with huge result sets in record-setting time.
- PHP supports a large number of major protocols such as POP3, IMAP, and LDAP. PHP4 added support for Java and distributed object architectures (COM and CORBA), making n-tier development a possibility for the first time.
- PHP is forgiving: PHP language tries to be as forgiving as possible.
- PHP Syntax is C-Like. Common Uses of PHP PHP performs system functions, i.e. from files on a system it can create, open, read, write, and close them. The other uses of PHP are:
 - PHP can handle forms, i.e. gather data from files, save data to a file, thru email you can send data, return data to the user.
 - You add, delete, modify elements within your database thru PHP.
 - Access cookies variables and set cookies.
 - Using PHP, you can restrict users to access some pages of your website.
 - It can encrypt data.

Five important characteristics make PHP's practical nature possible

- Simplicity
- Efficiency
- Security
- Flexibility
- Familiarity

2.1.4.3 CSS:-

Stands for "Cascading Style Sheet." **Cascading style sheets** are used to format the layout of Web pages. They can be used to define text styles, table sizes, and other aspects of Web pages that previously could only be defined in a page's HTML.

CSS helps Web developers create a uniform look across several pages of a Web site. Instead of defining the style of each table and each block of text within a page's HTML, commonly used styles need to be defined only once in a CSS document. Once the style is defined in cascading style sheet, it can be used by any page that references the CSS file. Plus, CSS makes it easy to change styles across several pages at once. For example, a Web developer may want to increase the default text size from 10pt to 12pt for fifty pages of a Web site. If the pages all reference the same style sheet, the text size only needs to be changed on the style sheet and all the pages will show the larger text.

While CSS is great for creating text styles, it is helpful for formatting other aspects of Web page layout as well. For example, CSS can be used to define the cell padding of table cells, the style, thickness, and colour of a table's border, and the padding around images or other objects. CSS gives Web developers more exact control over how Web pages will look than HTML does. This is why most Web pages today incorporate cascading style sheets.

✓ What is CSS ?

CSS is the language for describing the presentation of Web pages, including colors, layout, and fonts. It allows one to adapt the presentation to different types of devices, such as large screens, small screens, or printers. CSS is independent of HTML and can be used with any XML-based markup language. The separation of HTML from CSS makes it easier to maintain sites, share style sheets across pages, and tailor pages to different environments. This is referred to as the separation of structure (or: content) from presentation

2.2 BACK END TECHNOLOGY

2.2.1 MYSQL: - For database, MYSQL Database is used.

MySQL Database

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons –

- MySQL is released under an open-source license. So you have nothing to pay to use it.
- MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.
- MySQL uses a standard form of the well-known SQL data language.
- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- MySQL works very quickly and works well even with large data sets.
- MySQL is very friendly to PHP, the most appreciated language for web development.
- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).
- MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.

2.2.2 What is JavaScript

JavaScript (js) is a light-weight object-oriented programming language which is used by several websites for scripting the webpages. It is an interpreted, full-fledged programming language that enables dynamic interactivity on websites when applied to an HTML document. It was introduced in the year 1995 for adding programs to the webpages in the Netscape Navigator browser. Since then, it

has been adopted by all other graphical web browsers. With JavaScript, users can build modern web applications to interact directly without reloading the page every time. The traditional website uses js to provide several forms of interactivity and simplicity.

Although, JavaScript has no connectivity with Java programming language. The name was suggested and provided in the times when Java was gaining popularity in the market. In addition to web browsers, databases such as CouchDB and MongoDB uses JavaScript as their scripting and query language.

Features of JavaScript

There are following features of JavaScript:

1. All popular web browsers support JavaScript as they provide built-in execution environments.
2. JavaScript follows the syntax and structure of the C programming language. Thus, it is a structured programming language.
3. JavaScript is a weakly typed language, where certain types are implicitly cast (depending on the operation).
4. JavaScript is an object-oriented programming language that uses prototypes rather than using classes for inheritance.
5. It is a light-weighted and interpreted language.
6. It is a case-sensitive language.
7. JavaScript is supportable in several operating systems including, Windows, macOS, etc.
8. It provides good control to the users over the web browsers.

Application of JavaScript

JavaScript is used to create interactive websites. It is mainly used for:

- Client-side validation,
- Dynamic drop-down menus,
- Displaying date and time,
- Displaying pop-up windows and dialog boxes (like an alert dialog box, confirm dialog box and prompt dialog box),
- Displaying clocks etc.

2.2.3 How To Configure Apache 2

It is important to read the documentation distributed together with the Apache server. These documents are usually kept in directory "<APACHE_HOME>\manual" or "<APACHE_HOME>\htdocs\manual" (where <APACHE_HOME> denotes your Apache's installed directory). Read the tutorials and How-To's.

To install Apache 2, read "How to install Apache 2". I shall assume that Apache HTTP server is installed in d:\myProject\apache2, running in port 8000. The document root directory is "<APACHE_HOME>\htdocs".

1. Basic Configuration

Apache is configured by placing configuration directives, such as Listen and ServerName, into a configuration file, which will be read by the Apache executable during the startup.

The default configuration file is called "httpd.conf" (or "apache2.conf") in the directory "<APACHE_HOME>\conf". Browser through this configuration file.

At a minimum, you need to check the following directives.

CHAPTER 3

Requirement and Analysis

3.1 Problem Definition

3.1.1 Existing System

- In the existing system the forms are done only manually work.
- Lack of security of data.
- More man power.
- Time consuming.
- Needs manual calculation.
- This was creating problem peoples have to take efforts and waste their time for making a simple document
- The existing system based on manual work

3.1.2 Proposed system:

- Security of data.
- Ensure data accuracies.
- Proper control of the higher officials.
- Minimize manual data entry.
- Minimum time needed for the various processing.
- Greater efficiency.

- Better service.
- User friendliness and interactive.
- Minimum time required.

3.2 Requirements and Analysis

3.2.1 Functional characteristic:

FUNCTIONAL REQUIREMENTS:

The functional requirement will describe the features and functionality of the system. Functional requirement records the operation that must be done. functional requirement are based for non-functional requirement.

The basic service that the College for management system includes:

Admin Panel Login System

- Admin Login/Logout System
- Forgot Password for admin
- Edit and Update admin profile
- Reset Admin Account Password

View and Manage Users

- View users
- Add New User
- Edit and update the existing users
- Remove Users

- Workloads.

- System shall provide for password protected administrator access to add, delete and modify the basic service offered by the system.

User Management System

From the admin panel, the admin can enroll new users, update and remove users from the user management system. Further, the admin can view all the attendance records.

Enroll New Users/Update/Remove

Manage Device

Device Management System

- Add new device
- Update existing device
- Delete device
- Update New token to the device
- Change the device mode (Enrollment mode: to register new users to the system, Attendance Mode: To record attendance of registered users)

Add New RFID Scanner Device

3.2.2 Non-functional characteristics:

Performance:

Computer performance is the amount of work accomplished by a computer system. Short response time for a given piece of work, High throughput, Low utilization of computing resource(s), High availability of the computing system or application, highly compact, High bandwidth, Short data transmission time are all the aspects of performance.

Scalability:

Scalability is the capability of a system, network, or process to handle a growing amount of work, or its potential to be enlarged to accommodate that growth. For example, a system is considered scalable if it is capable of increasing its total output under an increased load when resources (typically hardware) are added.

Actually, from the devices section admin can add a new device, update the device, and remove the device. To add a new device, you need to enter a device name and its department. Furthermore, you can also update the device token from the device UID Section.

Reliability:

Reliability is theoretically defined as the probability of success as the frequency of failures; or in terms of availability, as a probability derived from reliability, testability and maintainability. Testability, maintainability and maintenance are often defined as a part of "reliability engineering" in Reliability Programs. Reliability plays a key role in the cost-effectiveness of systems.

Security:

Security is freedom from, or resilience against, potential harm (or other unwanted coercive change) from external forces. Beneficiaries (technically referents) of security may be persons and social groups, objects and institutions, ecosystems, and any other entity or phenomenon vulnerable to unwanted change by its environment.

Accessibility:

View Users log on RFID Based Attendance System

From the user log menu, you can navigate to all the user's logs data. You can view their arrival and Leaving time as well. Furthermore, It has more functions to filter your logs by user, date, arrival time, leaving time, and filter by different departments, etc. Hence, you can also export those data to excel.

Filter Users Log to export

3.3 Planning and Scheduling

The purpose of Project Planning is to identify the scope of the project, estimate the work involved, and create a project schedule. Project planning begins with requirements that define the software to be developed. The project plan is then developed to describe the tasks that will lead to completion. The project schedule is the tool that communicates what work needs to be performed, which resources of the project members will perform the work and the time frames in which that work needs to be performed. The project schedule should reflect all of the work associated with delivering the project on time

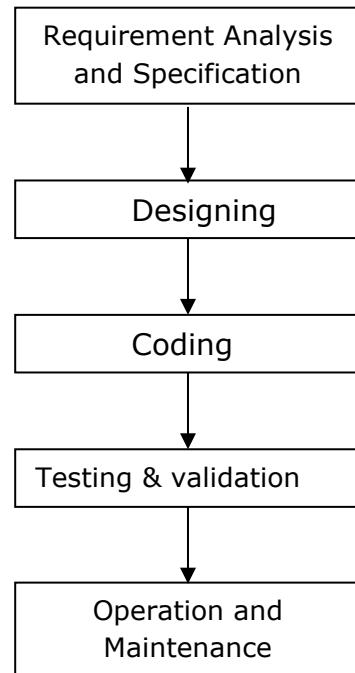


Fig: 3.3.1 SDLC

Planning:

SDLC planning yields a general overview of the company and its objectives. An initial assessment of the information of the flow and intents requirement must be made during these discovery portions of SDLC.

Analysis:

Problems defined during the planning phase are examined in great details during analysis phase. Analysis phase of the SDLS is an effect, a though AUDIT of the user's requirements.

- Requirement analysis and specification for clear understanding of the problem.
- Software design for planning the solution of the problem.
- Coding (implementation) for writing program as per the suggested solution.
- Testing for verifying and validating the objective of the product.
- Operation and maintenance for use and to ensure its availability to users.

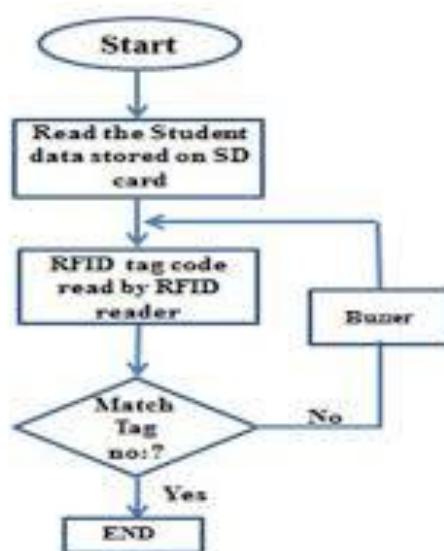


Fig:-3.3.2 Cycle of Rf-id Reader

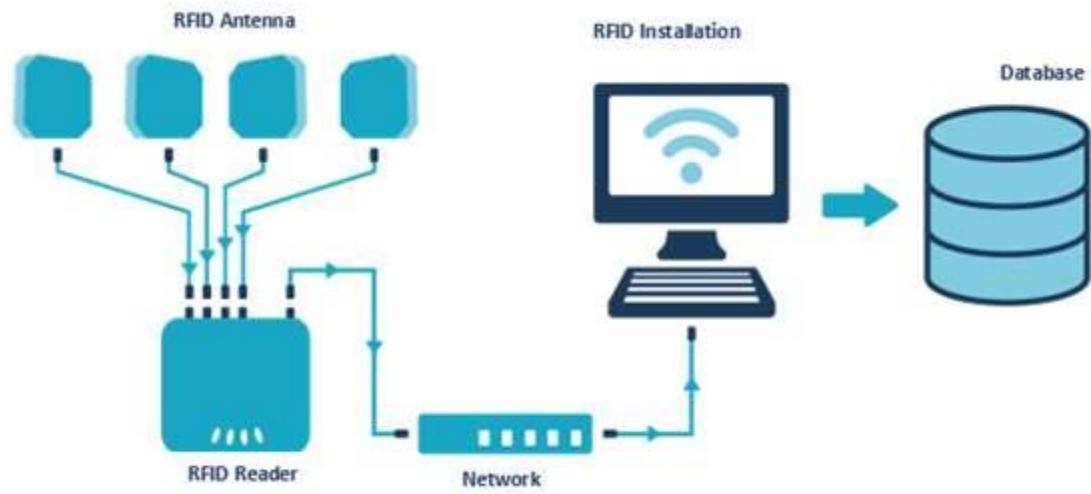


Fig: -3.3.3 RFID TO DATABASE

Detailed system Design:

In this phase, the designer completes the design of the systems processes. This includes all the necessary technical specification for the screens and reports.

Implementations:

Implementation/Coding starts once the developer gets the Design document. The Software design is translated into source code. All the components of the software are implemented in this phase.

Maintenance:

As soon as the system are operable, end users begin to request changes in it. Those changes generate systems maintenance activities, which can be grouped into three types:

- Adoptive maintenance due to changes in business environment
- Corrective maintenance in response to system errors.
- Perfective maintenance to enhance the system.

Methodology Adopted:

The methodology adopted while developing the system is the **Iterative model**.

Iterative Model

Iterative process starts with a simple implementation of a subset of the software requirements and iteratively enhances the evolving versions until the full system is implemented. At each iteration, design modifications are made and new functional capabilities are added. The basic idea behind this method is to develop a system through repeated cycles (iterative) and in smaller portions at a time (incremental).

The following illustration is a representation of the Iterative and Incremental model –

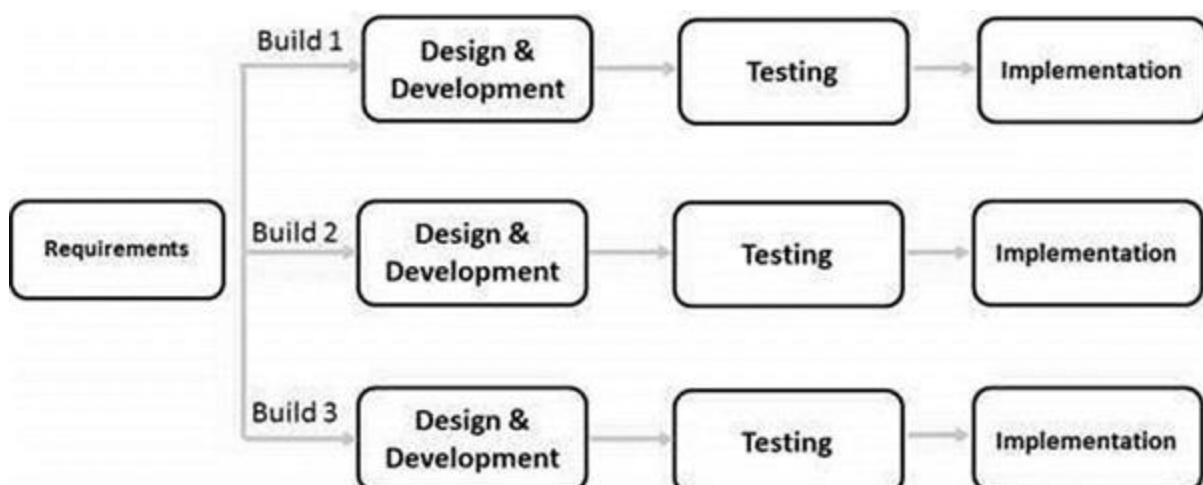


Fig. 3.2 Iterative model

Iterative and Incremental development is a combination of both iterative design or iterative method and incremental build model for development. "During software development, more than one iteration of the software development cycle may be in progress at the same time." This process may be described as an "evolutionary acquisition" or "incremental build" approach."

In this incremental model, the whole requirement is divided into various builds. During each iteration, the development module goes through the requirements, design, implementation and testing phases. Each subsequent release of the module adds function to the previous release. The process continues till the complete system is ready as per the requirement.

The key to a successful use of an iterative software development lifecycle is rigorous validation of requirements, and verification & testing of each version of the software against those requirements within each cycle of the model. As the software evolves through successive cycles, tests must be repeated and extended to verify each version of the software.

The advantages of the Iterative and Incremental SDLC Model are as follows –

- Some working functionality can be developed quickly and early in the life cycle.
- Results are obtained early and periodically.
- Parallel development can be planned.
- Progress can be measured.
- Less costly to change the scope/requirements.
- Testing and debugging during smaller iteration is easy.
- Risks are identified and resolved during iteration; and each iteration is an easily managed milestone.
- Easier to manage risk - High risk part is done first.
- With every increment, operational product is delivered.

- Issues, challenges and risks identified from each increment can be utilized/applied to the next increment.
- Risk analysis is better.
- It supports changing requirements.
- Initial Operating time is less.
- Better suited for large and mission-critical projects.
- During the life cycle, software is produced early which facilitates customer evaluation and feedback.

3.4 Software and Hardware Requirements

There are two types of requirements:

- 1) Hardware Requirements
- 2) Software Requirements

Hardware Components

- **NodeMcu ESP8266**
- **RFID-RC522 Module**
- **0.96” OLED Display (Future use)**
- **Jumper Wires**
- **Micro USB Cable**
- **Mini Breadboard (optional)**

Software Components

- **Arduino IDE**
- **XAMPP server**
- **RFID-RC522 Library**
- **NodeMcu ESP8266 Library and Board Manager**

3.5 Preliminary Product Description

3.5.1 Project Planning Objectives –

The project planning was done to ensure that the project is delivered on schedule, budget and meeting the quality requirements. The project planning also helps ensure the resource loading is even and all the tasks are covered.

3.5.2 FEASIBILITY STUDY:

The objective of feasibility study is to examine the technical, operational and economical viability.

Technical feasibility:

Technical feasibility centers on the existing computer system (hardware, software etc) and to what extent it can support the proposed addition. In our proposed solution formulated, did not require any additional technology. Hence the system is technically feasible. The entire solution enlisted does not require any additional software for this solution.

Economic feasibility

More commonly known as cost benefit analysis, the procedure is to determine the benefits and savings that are expected from proposed system compare them with cost. The proposed system utilizes the currently available technologies. The cost during the development of the product is low. The interface and the scripts used are as simple as it could be. Therefore, the net cost in its development is less.

Operational Feasibility

Organizational, political and human aspects are considered in order to ensure that the proposed system will be workable when implemented.

Decomposition Techniques:

Software today is a huge size and estimating the cost to produce it can be a big problem. For this reason, we decompose the problem into smaller problems and then solve them more readily. Basic software metrics are usually measured in either lines of code (LOC) or function points (FP) Both of these metrics have their own estimation techniques

Which are different, but they have many similar characteristics. We have used Lines of code (LOC) Technique to get the software project estimation.

Software Risk:

A detail risk analysis was done. I brainstormed all the possible risks for the project and a detail mitigation plan was done. The risk details are as follows:

Sr. No.	Risk	Mitigation Plan
1.	Required Skill Set for the project	The team has basic skills. Training will be planned to enhance the expertise of the team.
2.	The Availability of development software.	The application development will be made available by the college.
3.	Increase in given Cost.	The cost will be under control by completing the software in time
4.	Business impact of project.	This Risk will be under control by making the software user friendly and deliver it on time

3.6 Conceptual Model

A **conceptual model** is a representation of a system, made of the composition of concepts which are used to help people know, understand, or simulate a subject the model represents. It is also a set of concepts.

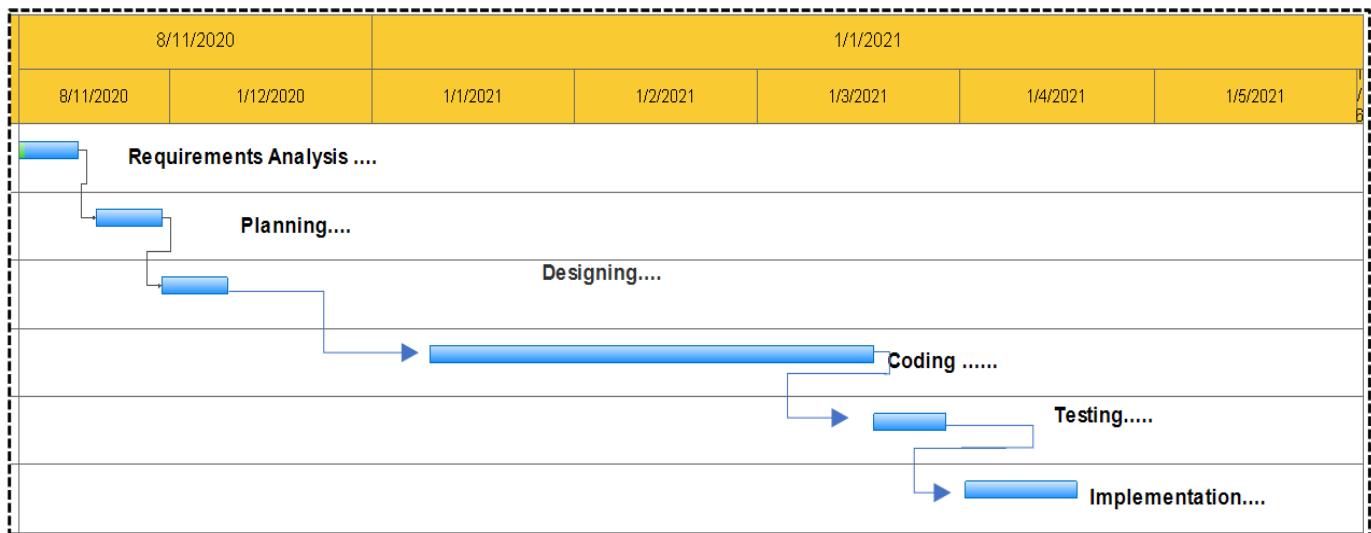
The term conceptual model may be used to refer to models which are formed after a conceptualization or generalization process.

CHAPTER 4

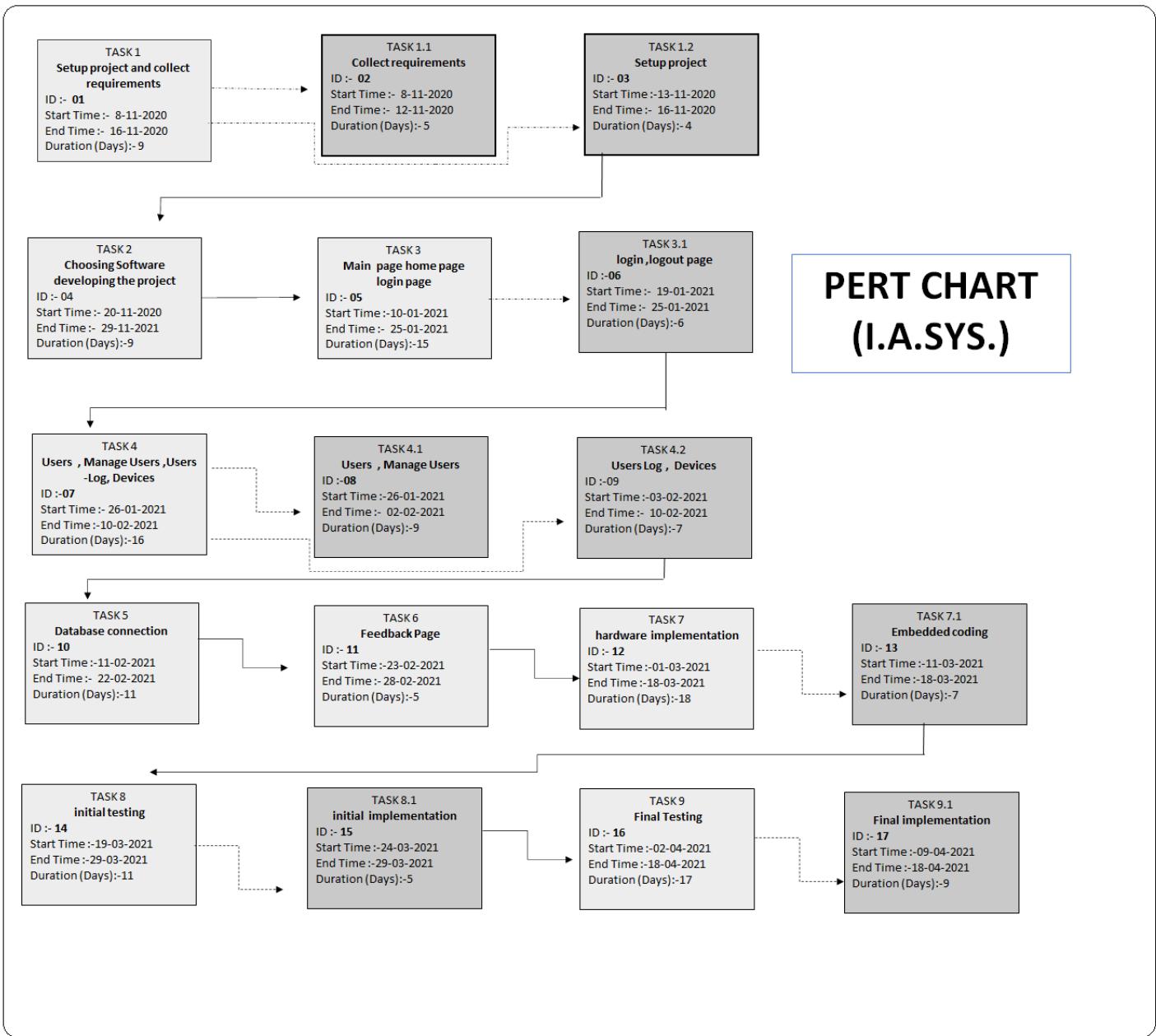
SYSTEM DESIGN

4.1 GANTT CHART

ID	Task Name	Start	Finish	Duration
1	Requirements Analysis	8/11/2020	16/11/2020	9.0 d.
2	Planning	20/11/2020	29/11/2020	10.0 d.
3	Designing	30/11/2020	9/12/2020	10.0 d.
4	Coding	10/1/2021	18/3/2021	68.0 d.
5	Testing	19/3/2021	29/3/2021	11.0 d.
6	Implementation	2/4/2021	18/4/2021	17.0 d.



4.2 PERTCHART



4.3 Basic Module

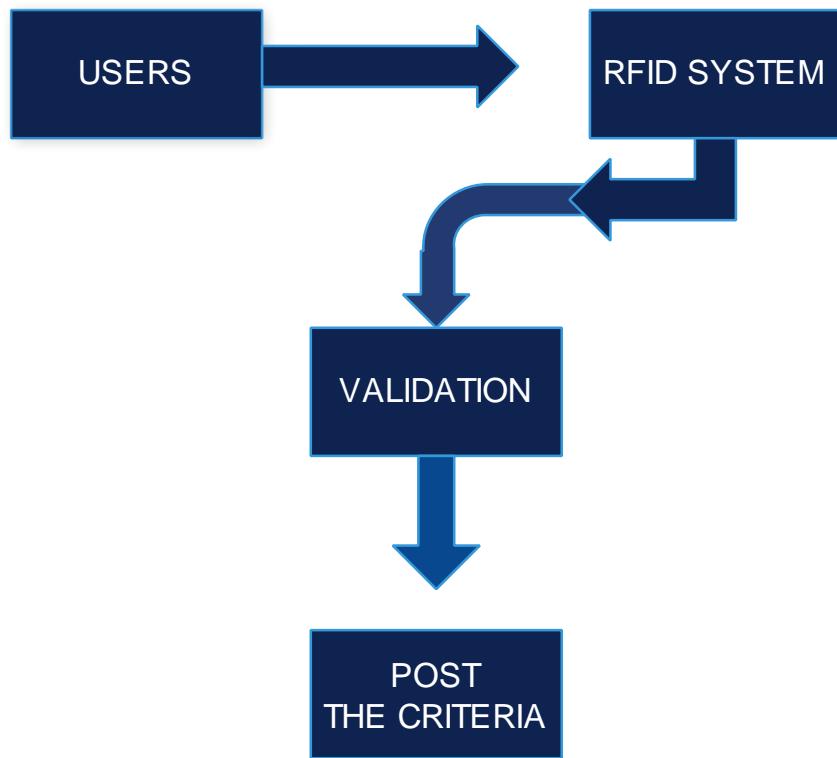


Fig 4.1 DFD FOR RECRUITER RFID SYSTEM

4.4 Data Design

- Users will interact with Rfid System(hardware)
- Application provides which page they user want.
- i'm using mysql for establishing database MySQL is the most popular Open Source SQL database management system, is developed, distributed, and supported by Oracle Corporation. MySQL is a database management system. A database is a structured collection of data.

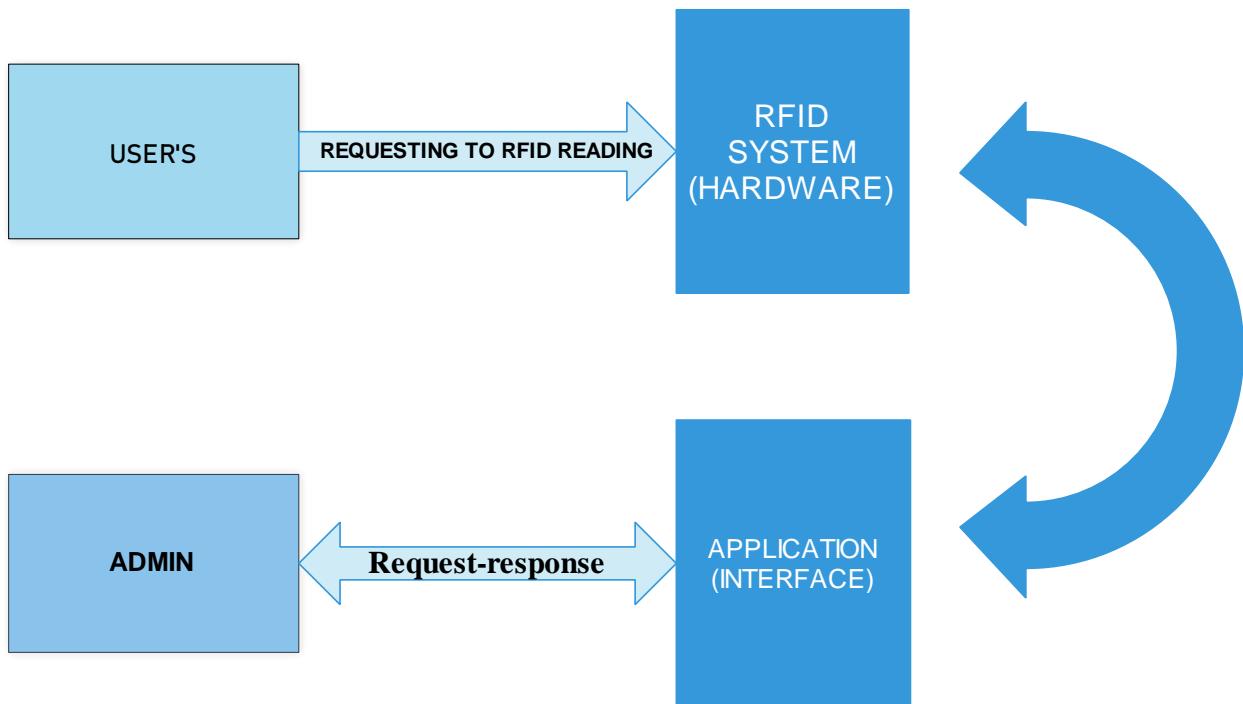
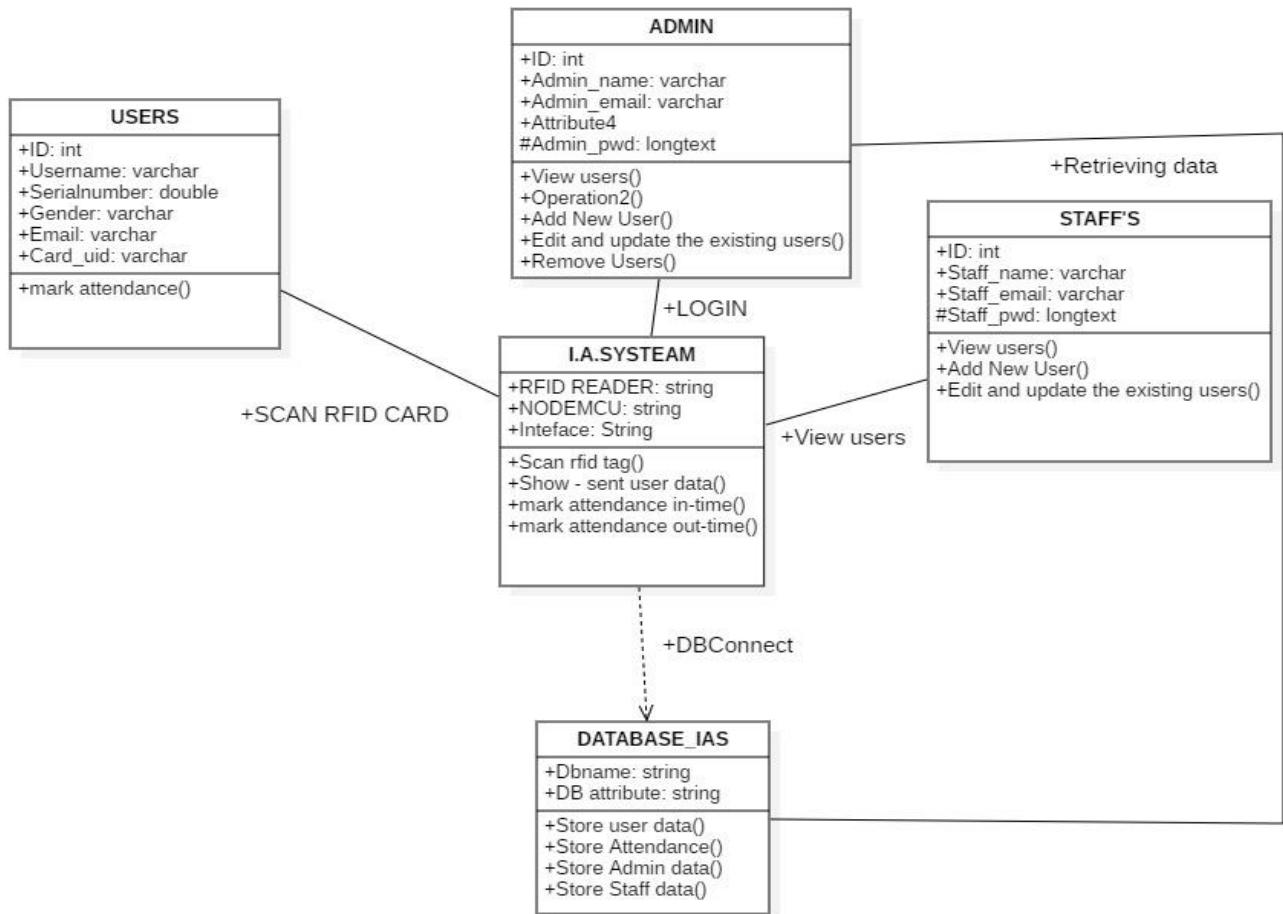


Fig.4.2 interaction

4.5.1 Schema Design

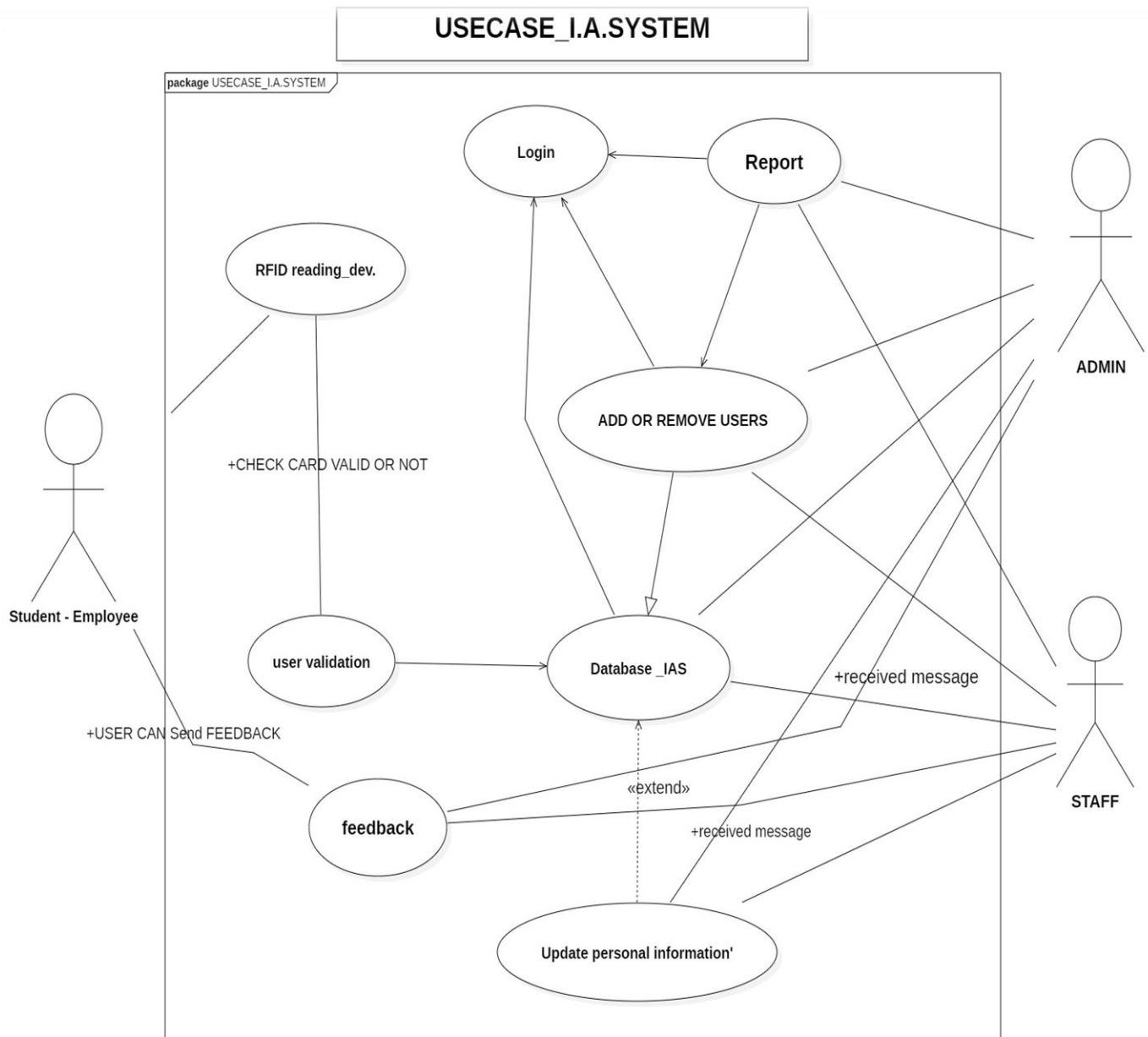
Class Diagram:-



CLASS _DIAGRAM_I.A.S.

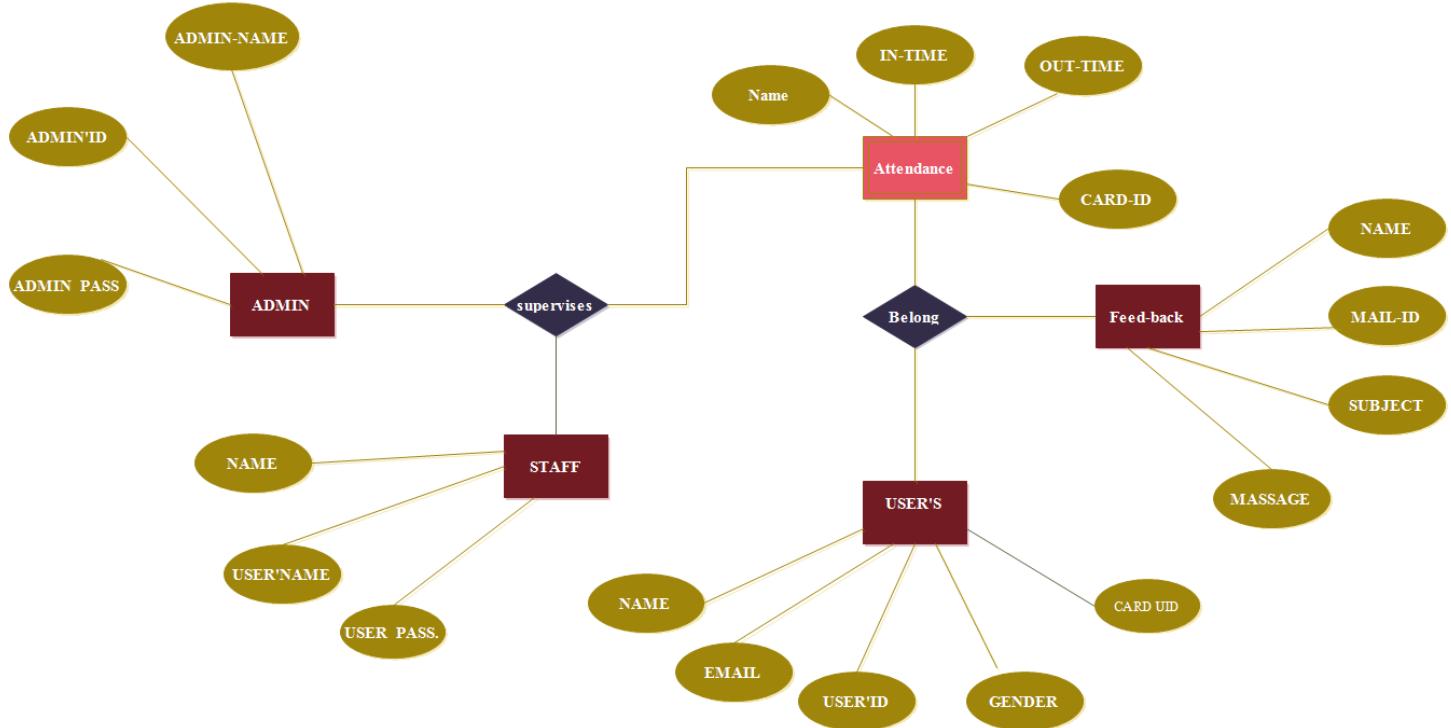
Fig 4.3 Class Diagram

Use case diagram: -



Entity Relationship Diagram : -

E-R.D.- Entity Relationship Diagram_I.A.SYS.



Sequence Diagram

A Sequence Diagram has the following features:

- A Sequence diagram describe interactions among classes in the terms of an “exchange of message over time.”

Some of fact related to Sequence Diagrams are:

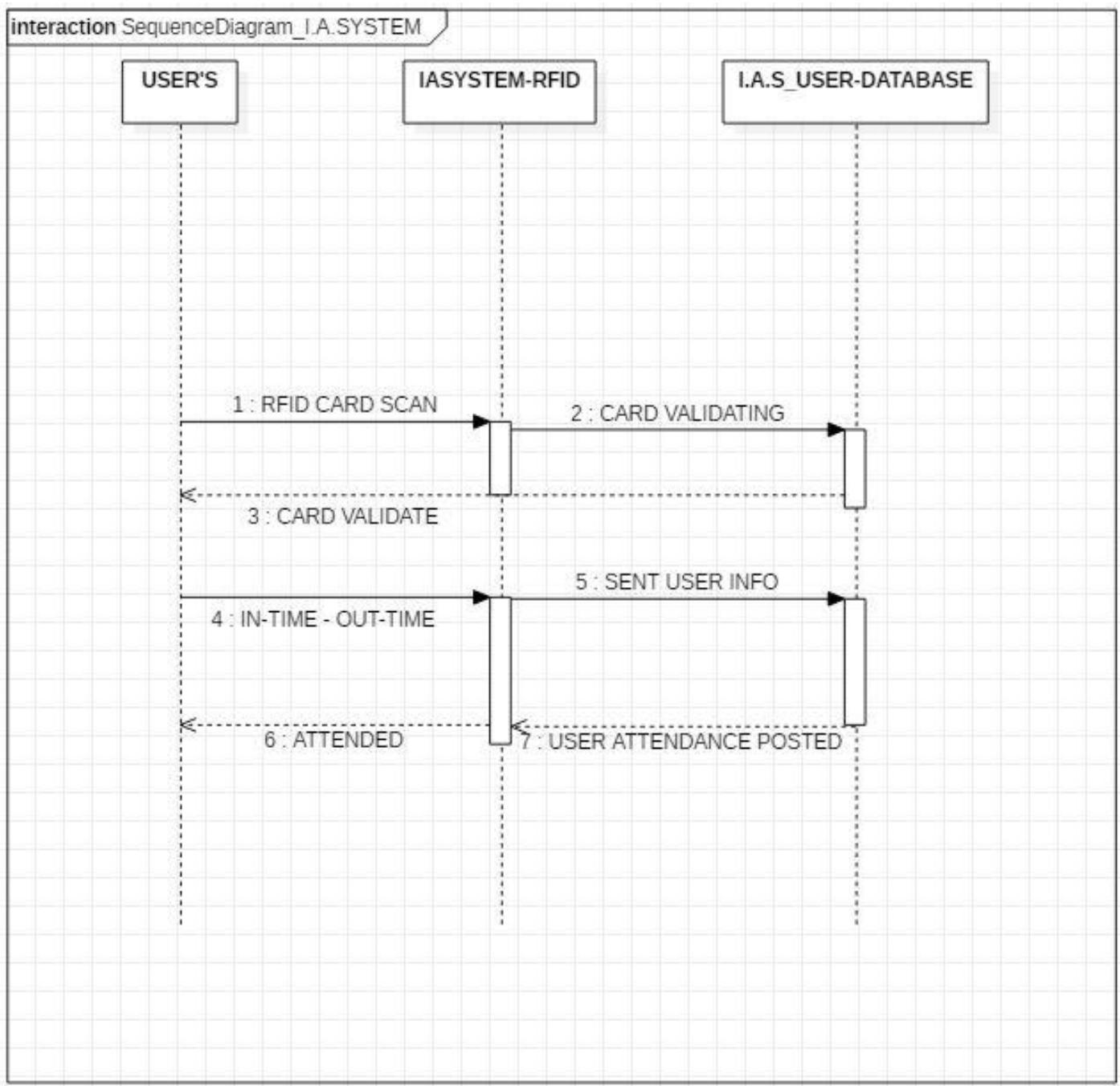
- Sequence diagram are used to depict the time sequence of messages exchanged between objects.
- Messages can correspond to operation on class or a event trigger.

Notations of a Sequence diagram include:

- ✓ **Lifeline:** It is a vertical dashed line that represents the “lifetime” of an Object.
- ✓ **Arrows:** They indicate flow of message between objects.

Activation: It is thin rectangular showing period of time, during which an object is performing an action.

Sequence Diagram:-



Activity Diagram

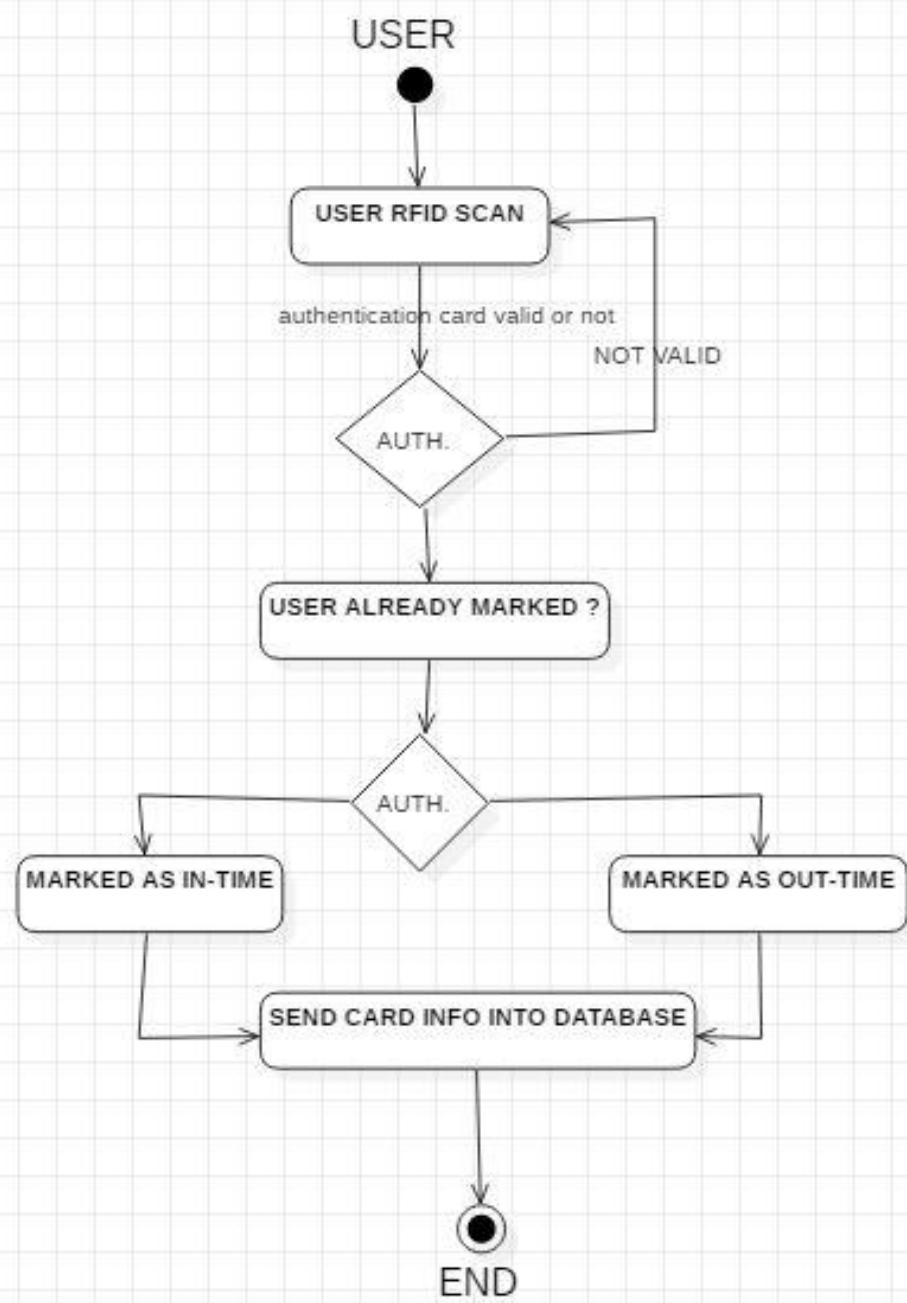
Activity diagrams are graphical representations of work flows of step wise activities and actions with support for choice, iteration and concurrency. In the United modelling Language, activity diagram can be used to describe the business and operational Step-by-Step workflows of components in a system. An activity diagram shows the overall flow of control.

Activity diagrams are constructed from a limited repertoire of shapes, connected with arrows.

The most important shape types:

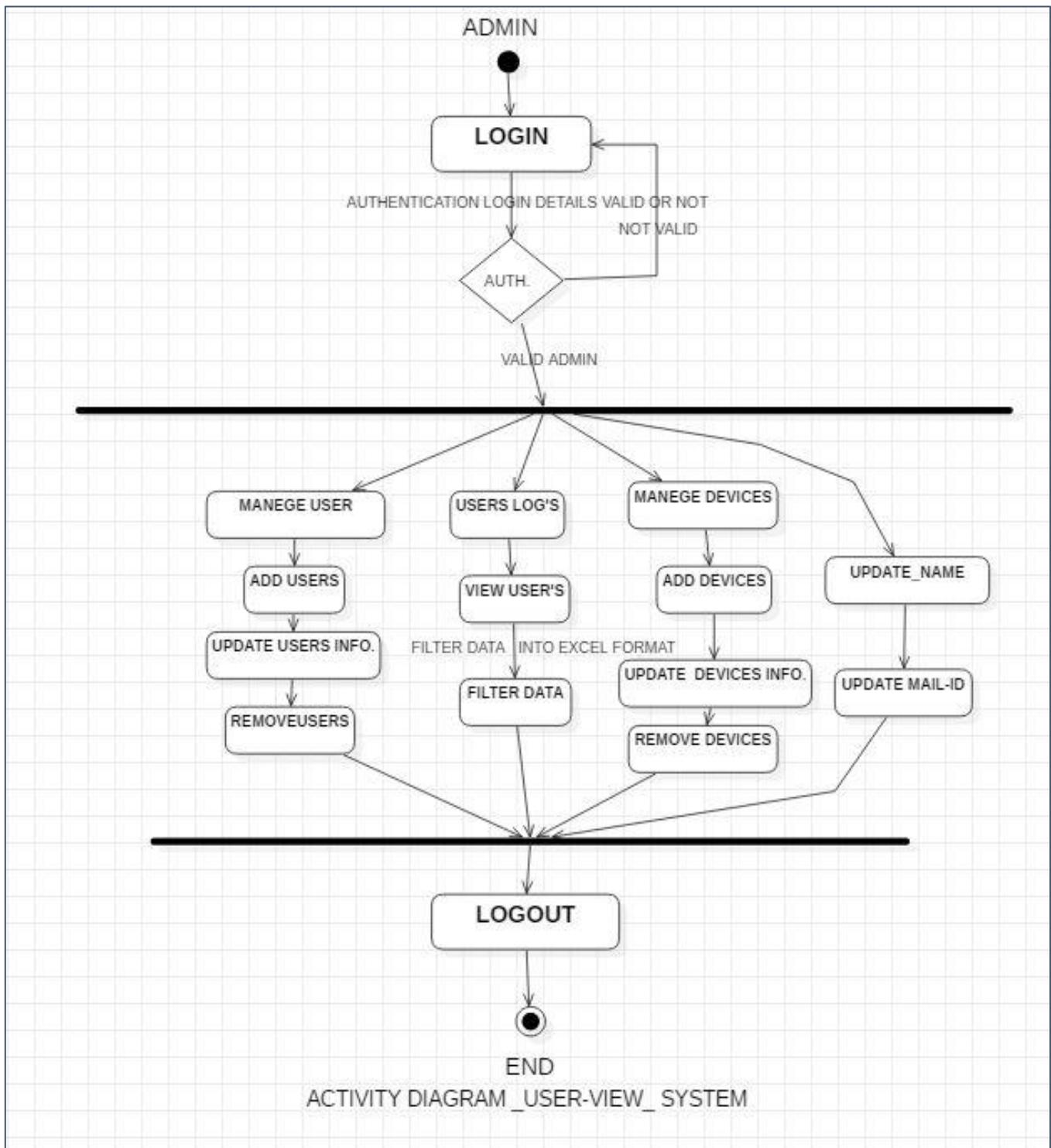
- Rounded rectangles represent activities.
- Diamonds represent decisions.
- Bars represent the start (split)or (join) of concurrent activities.
- A black circle represents the start (initial state) of work flow.
- An encircle black circle represents the end (final state).
- Arrows run from the start towards the end and represent the order in which activities happen
- Arrows run from the start towards the end and represent the order in which activities happen

ACTIVITY DIAGRAM USER VIEW:-

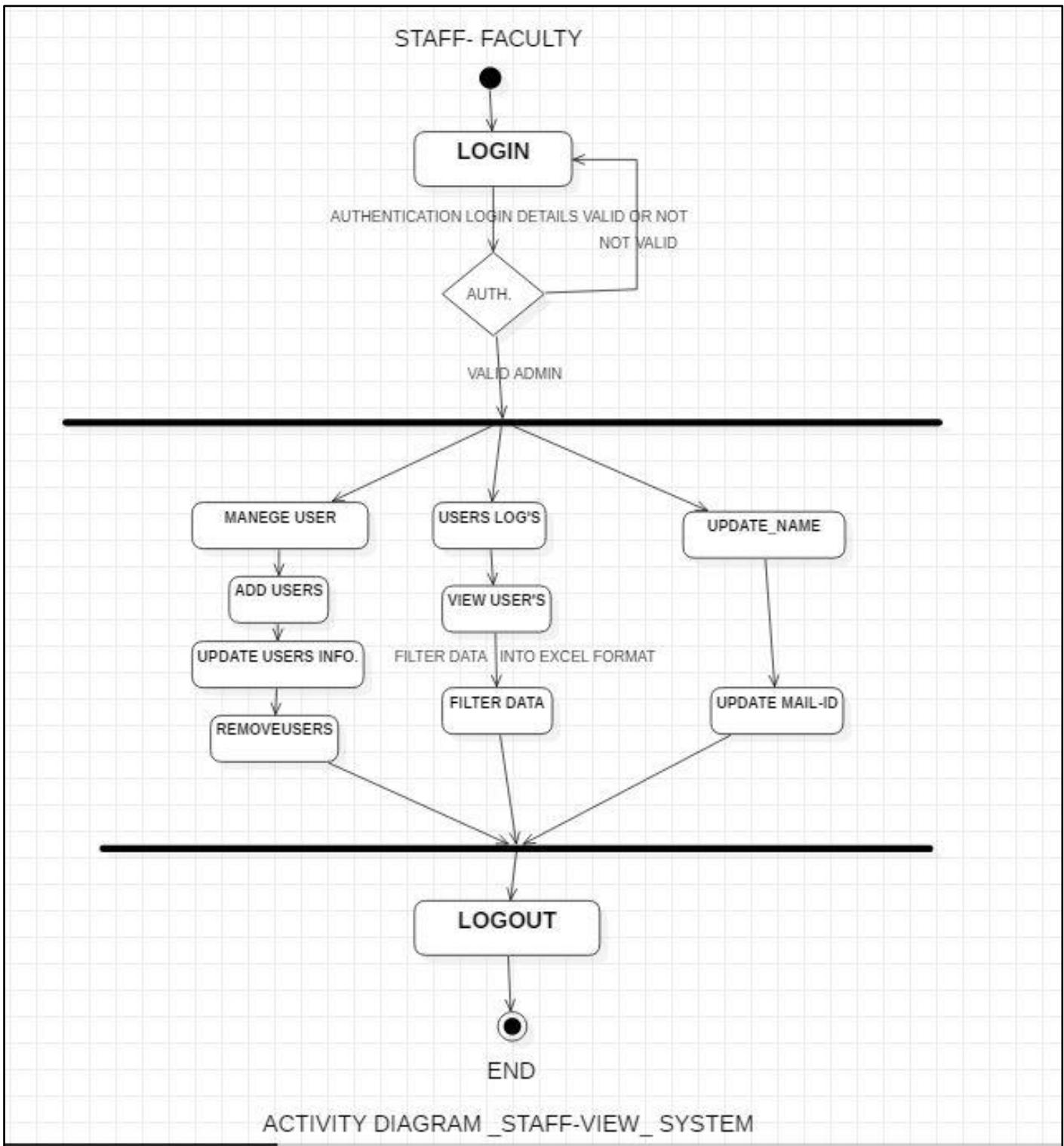


ACTIVITY DIAGRAM _USER-VIEW_ SYSTEM

ACTIVITY DIAGRAM ADMIN VIEW :-



ACTIVITY DIAGRAM STAFF- FACULTY VIEW :-



Data Flow Diagram (DFD)

Data flows are data structures in motion, while data stores are data structures. Data flows are paths or ‘pipe lines’, along which data structures travel, whereas the data stores are places where data structures are kept until needed.

Data flows are data structures in motion, while data stores are data structures at rest. Hence it is possible that the data flow and the data store would be made up of the same data structure.

Data flow diagrams is a very handy tool for the system analyst because it gives the analyst the overall picture of the system, it is a diagrammatic approach.

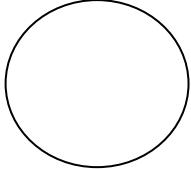
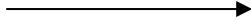
A DFD is a pictorial representation of the path which data takes from its initial interaction with the existing system until it completes any interaction. The diagram will describe the logical data flows dealing the movements of any physical items. The DFD also gives the insight into the data that is used in the system i.e., who actually uses it is temporarily stored.

A DFD does not show a sequence of steps. A DFD only shows what the different process in a system is and what data flows between them.

RULES FOR DFD -

- Fix the scope of the system by means of context diagrams.
- Organize the DFD so that the main sequence of the actions reads left to right and top to bottom.
- Identify all inputs and outputs.
- Identify and label each process internal to the system with rounded circles.
- A process is required for all the data transformation and transfers. Therefore, never connect a data store to a data source or the destinations or another data store with just a data flow arrow.
- Do not indicate hardware and ignore control information.
- Make sure the names of the processes accurately convey everything the process is done.
- There must not be unnamed process.
- Indicate external sources and destinations of the data, with squares.
- Number each occurrence of repeated external entities.
- Identify all data flows for each process step, except simple Record retrievals.
- Label data flow on each arrow.
- Use details flow on each arrow.

- Use the details flow arrow to indicate data movements.
- There can't be unnamed data flow.
- A data flow can't connect two external entities.

Sr. No	Symbol	Name	Description
1.		External Entity	An external entity is source or destination a data flow which is outside the area of study. For egg, Patient, Student etc.
2.		Process	A process shows a transformation or manipulation of data flows within the system.
3.		Dataflow	A data flow shows the flow of information from its source to its destination. A data flow is represented by a line, with arrowheads showing the direction of flow.

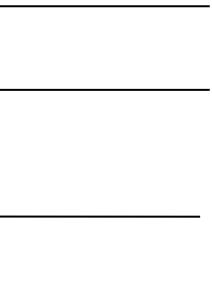
4.	OR 	Data File or Data store	<p>A data stores a holding place for information within the system. Data stores may be long-term files such as sales ledgers, or may be short-term accumulations: for example, batches of documents that are waiting to be processed.</p>
----	---	--------------------------------	---

Table:4.3.1 data flow

LEVELS OF DFD:

The complexity of the business system means that it is a responsible to represent the operations of any system of single data flow diagram. At the top level, an Overview of the different systems in an organization is shown by the way of context analysis diagram. When exploded into DFD

They are represented by:

- LEVEL 0: SYSTEM INPUT/OUTPUT
- LEVEL 1: SUBSYSTEM LEVEL DATAFLOW FUNCTIONAL
- LEVEL 2: FILE LEVEL DETAIL DATA FLOW.

The input and output data shown should be consistent from one level to the next.

LEVEL 0: SYSTEM INPUT/OUTPUT LEVEL

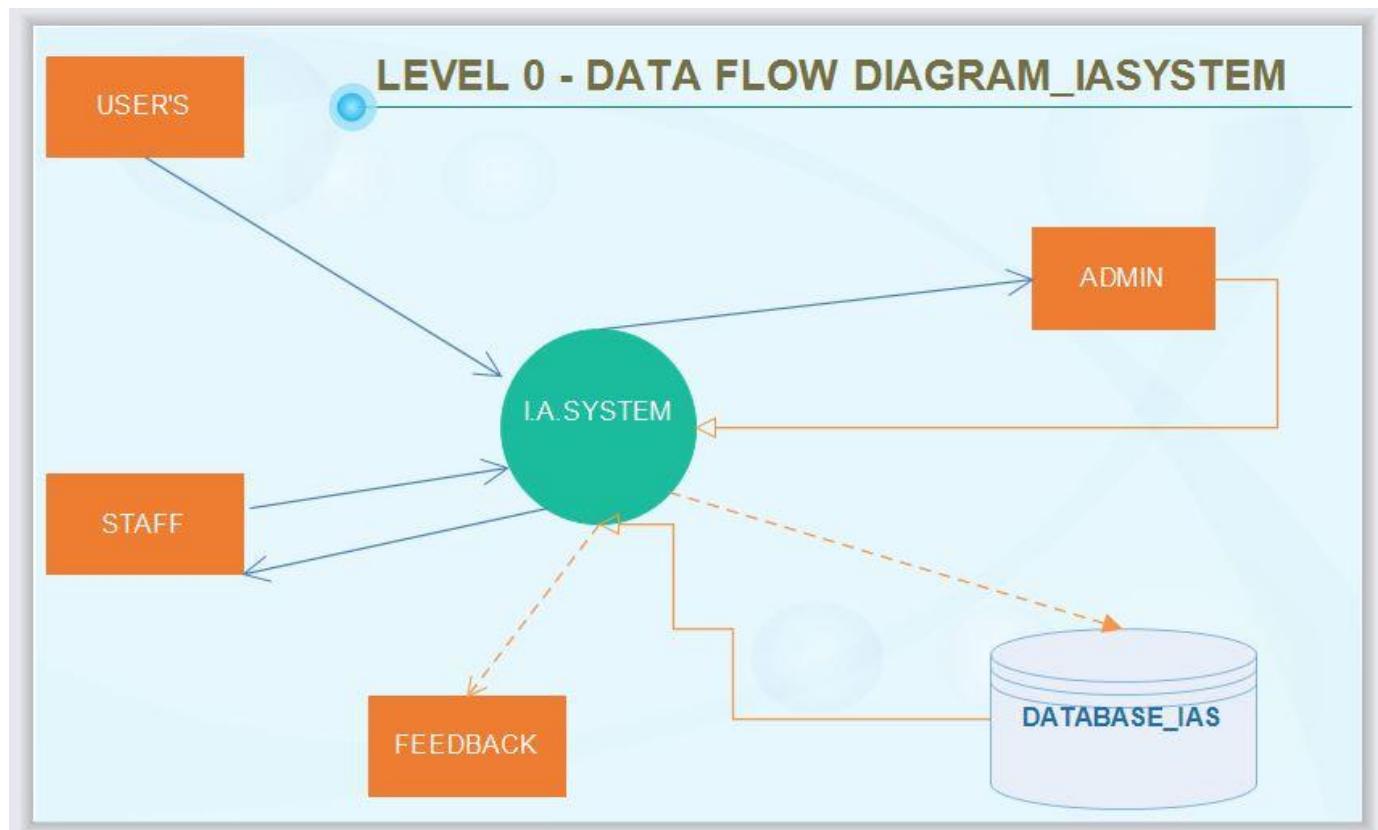
A level-0 DFD describes the system-wide boundaries, dealing inputs to and outputs from the system and major processes. This diagram is similar to the combined user-level context diagram.

LEVEL 1: SUBSYSTEM LEVEL DATA FLOW

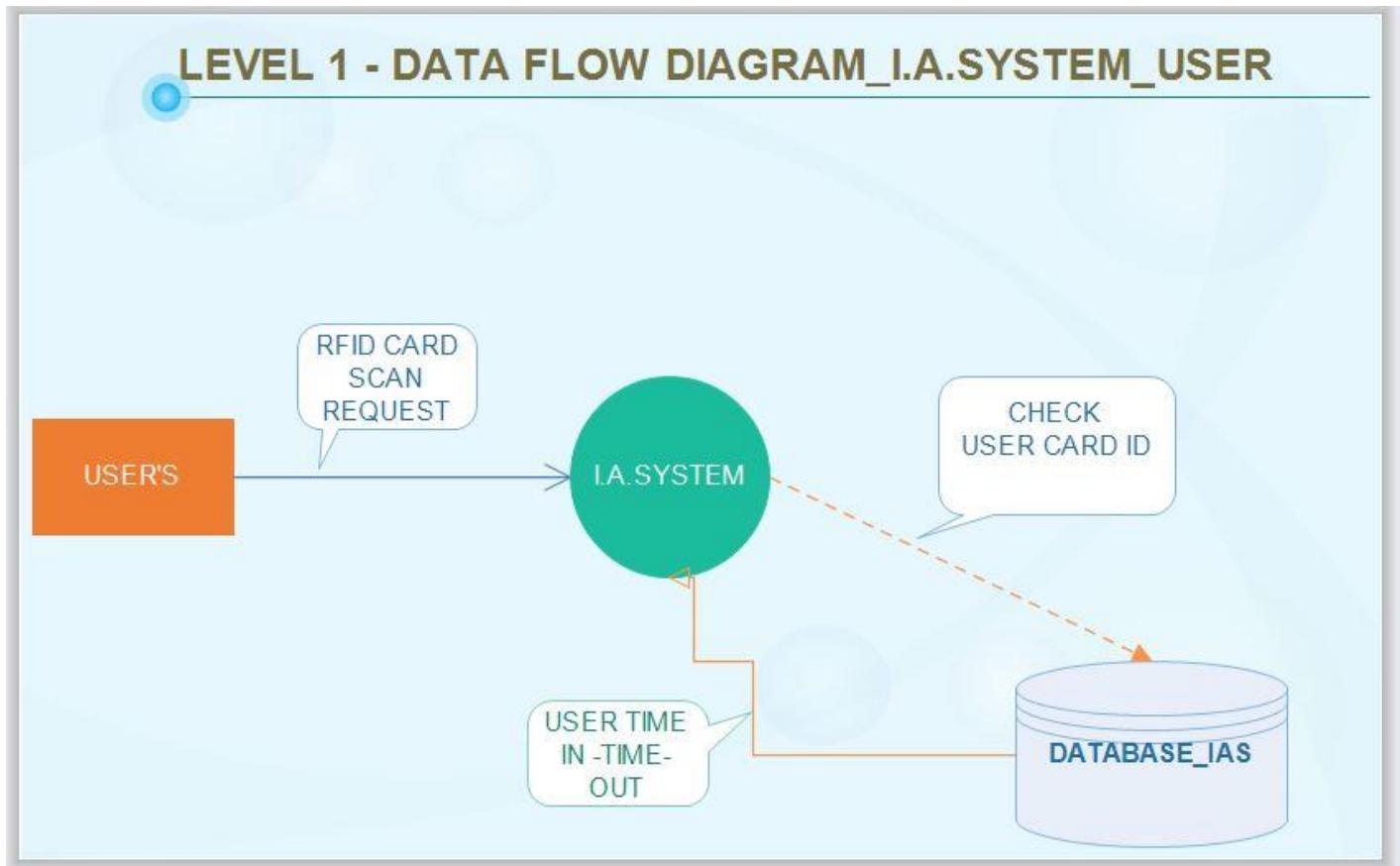
A level-1 DFD describes the next level of details within the system, detailing the data flows between subsystems, which make up the whole.

FIRST LEVEL DATAFLOW DIAGRAM

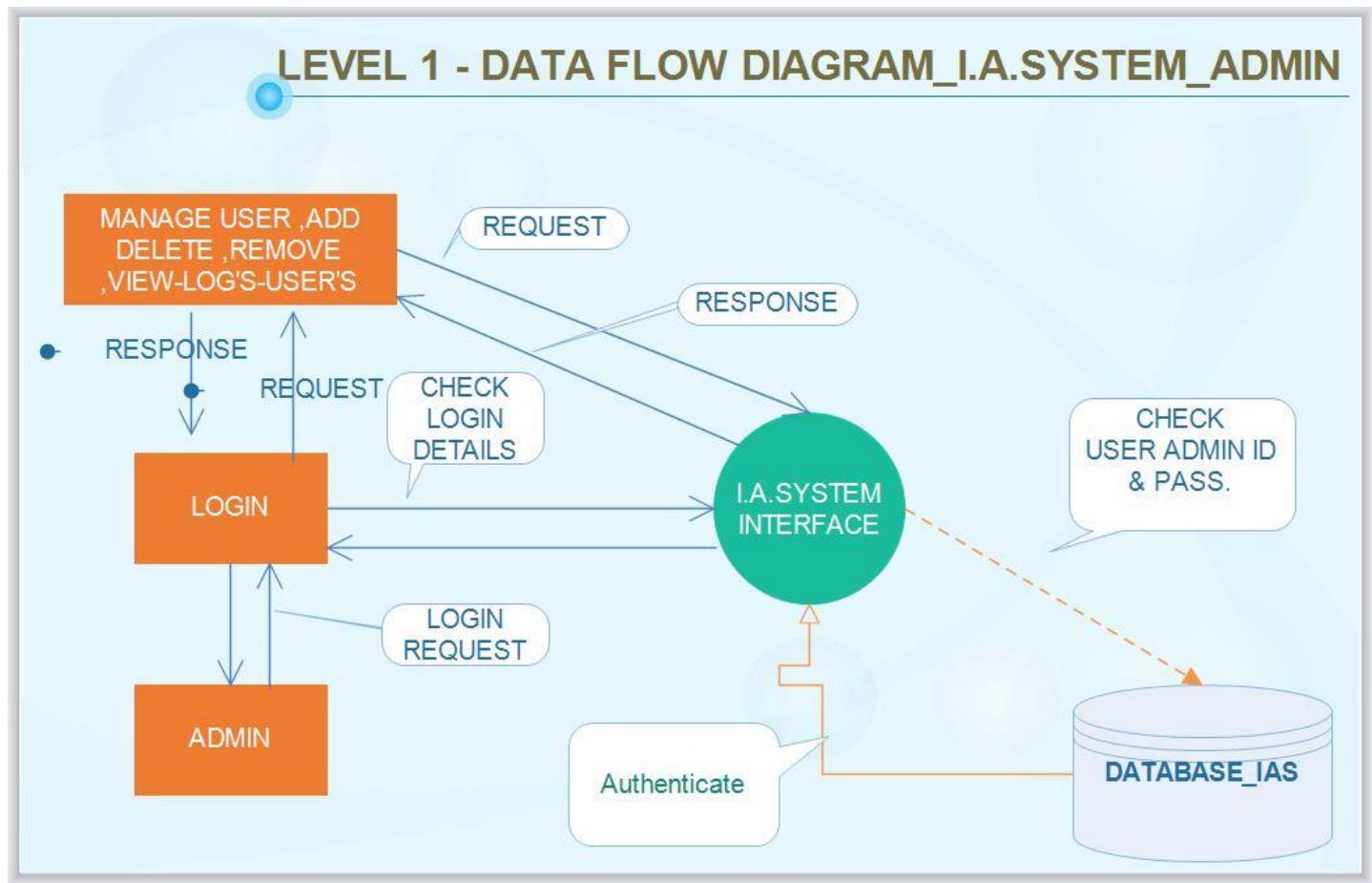
DATAFLOW DIAGRAM (LEVEL 0) :-



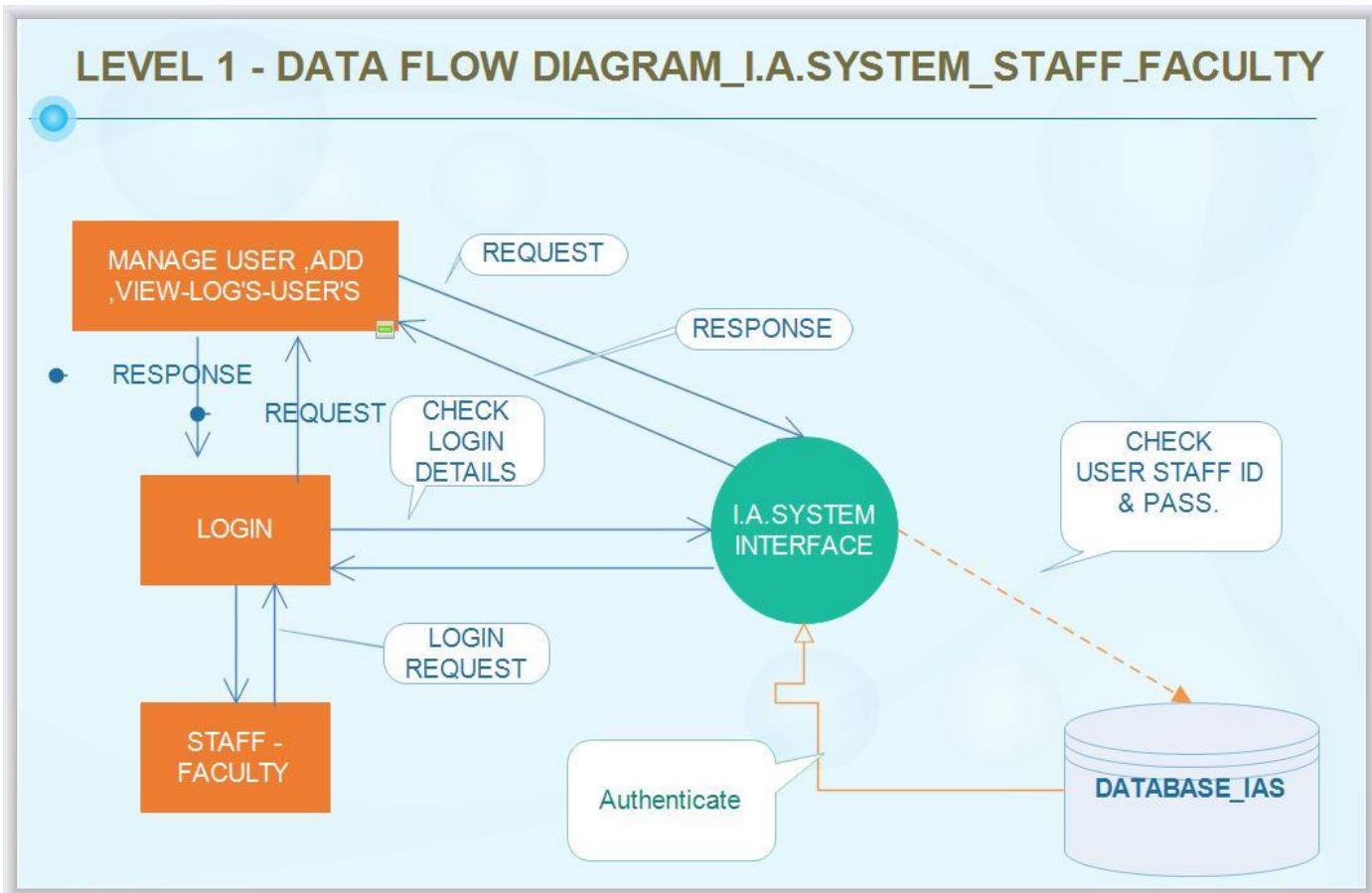
DATAFLOW DIAGRAM (LEVEL 1) USER _VIEW:-



DATAFLOW DIAGRAM (LEVEL 1) ADMIN_VIEW:-

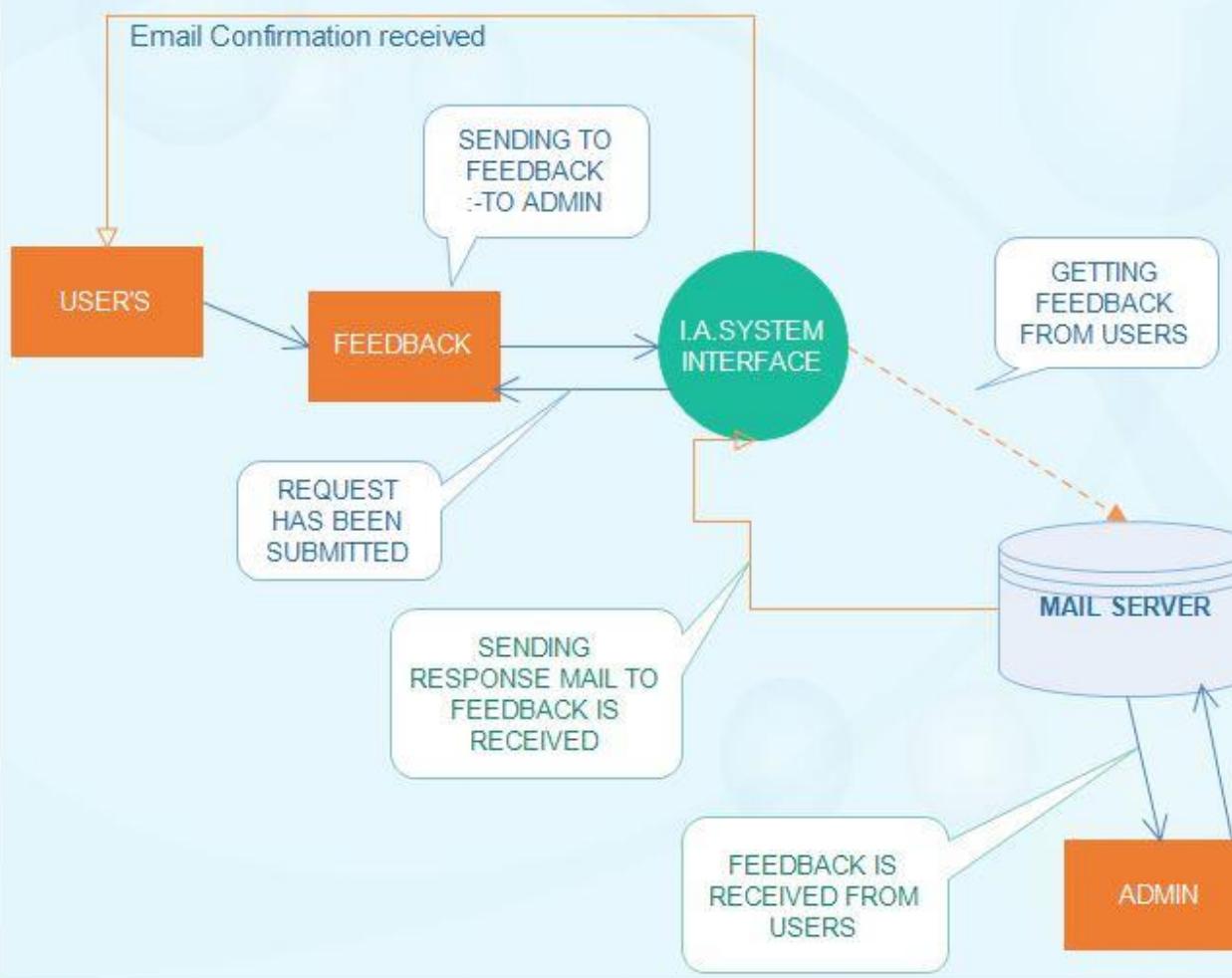


DATAFLOW DIAGRAM (LEVEL 1) STAFF_VIEW:-

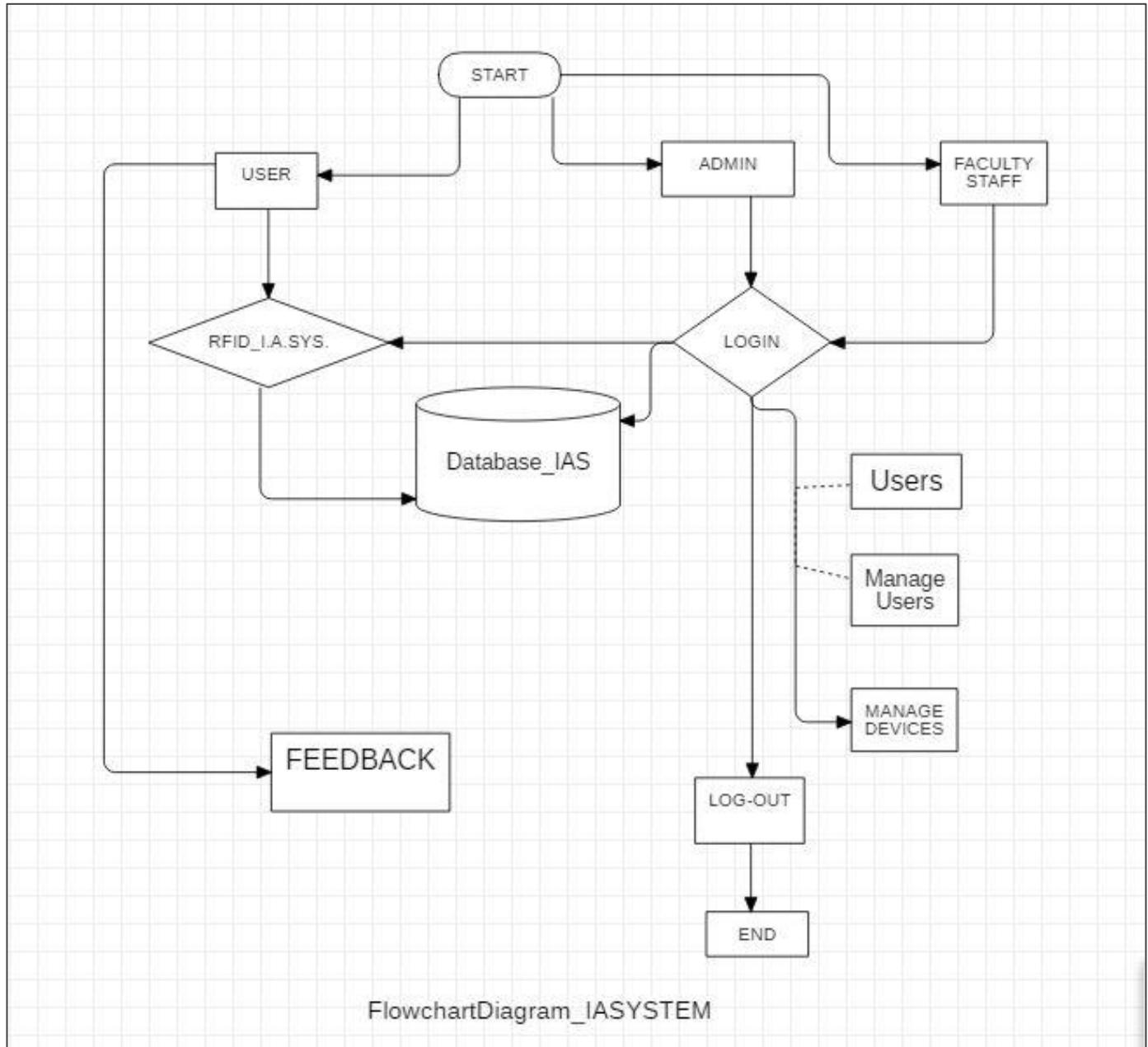


DATAFLOW DIAGRAM (LEVEL 1) FEEDBACK :-

LEVEL1 -DATA FLOW DIAGRAM_I.A.SYSTEM_USER'S_FEEDBACK

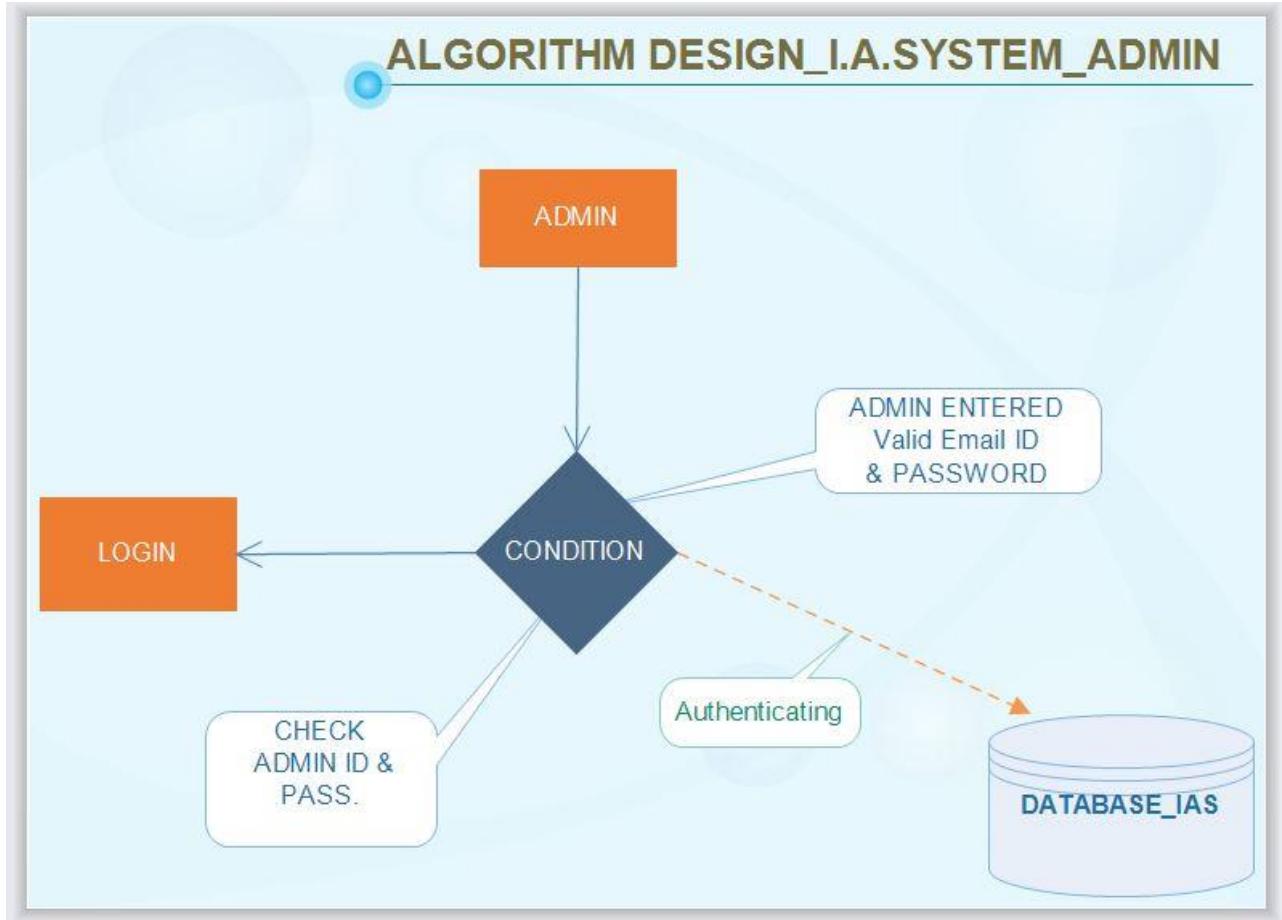


4.4.2 Procedural Design:-



Algorithm Design:-

1. only admin can login with unique email-id and password

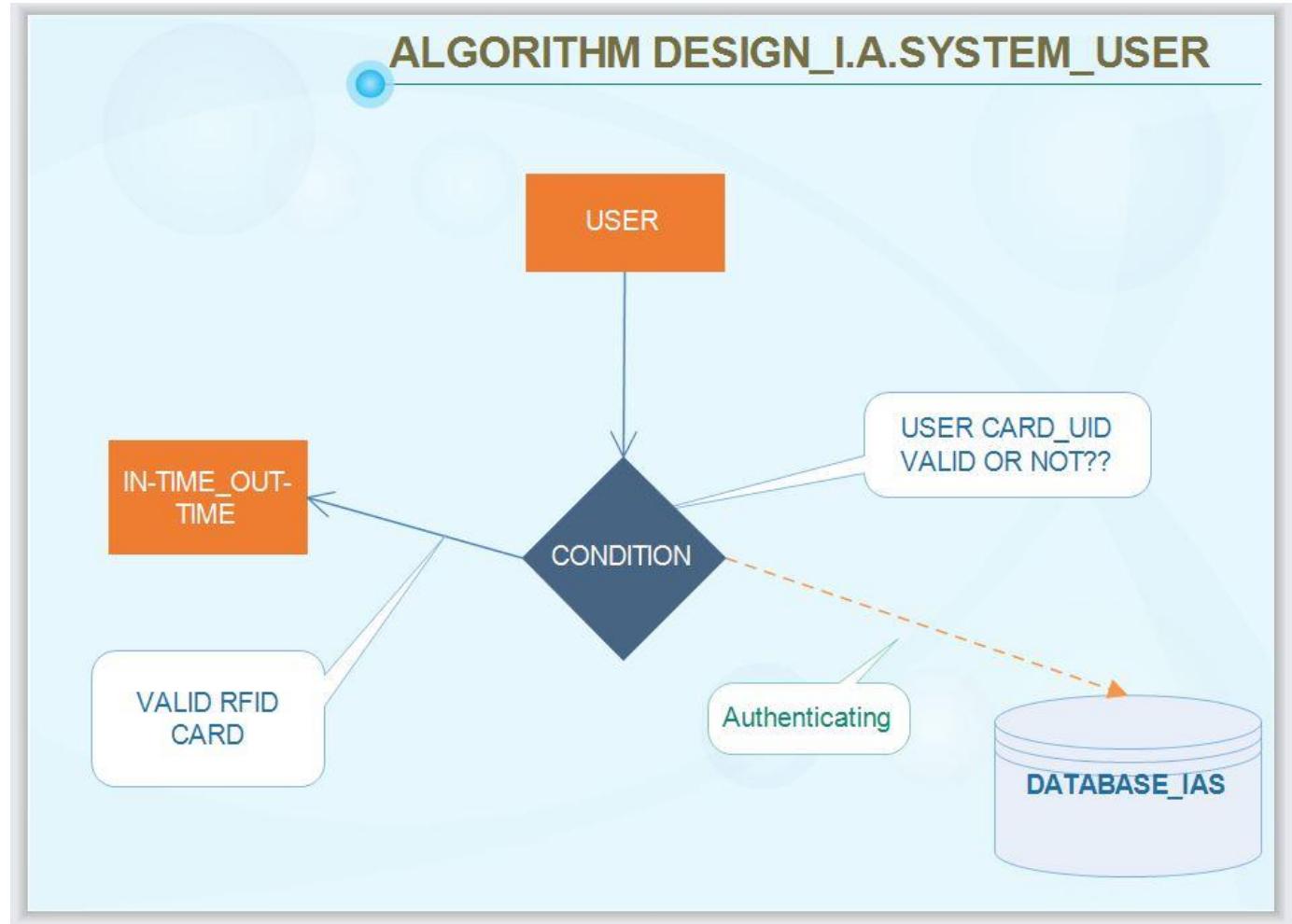


2 Admin will login to the main page.

3 It will check with the database. if the details matched with database, it will direct to main page .

Algorithm Design User: -

1. only valid card id is Accepted with user id user name

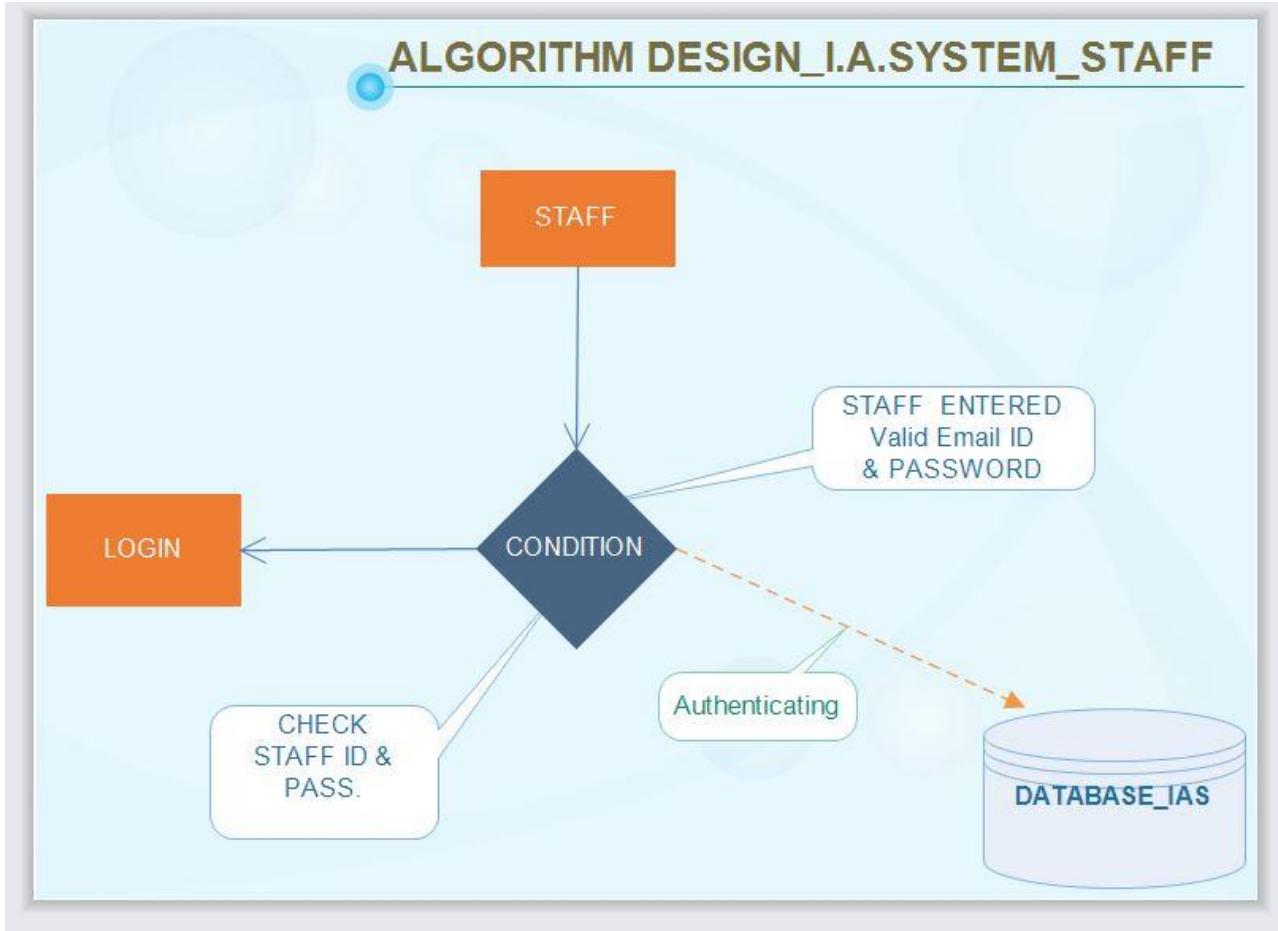


2 users can rfid card scan user when A System check with the database

3 if card is verified the user information posted into the database.

Algorithm Design Staff: -

1. only staff can login with unique email-id and password



2 staff will login to the main page.

3 It will check with the database. if the details matched with database,
it will direct to main page

DATA DICTIONARY: -

Data Dictionary For Admin : -

NO.	ATTRIBUTE	TYPE	LENGTH	KEY	DESCRIPTION
1.	admin_id	INT	11	Primary Key	The admin ID
2.	admin_name	varchar	30		The admin name
3.	admin_email	varchar	80		The admin email ID for login
4.	admin_pwd	longtext	auto		The admin password for login

Data Dictionary For Staff : -

NO.	ATTRIBUTE	TYPE	LENGTH	KEY	DESCRIPTION
1.	staff_id	INT	11	Primary Key	The staff ID
2.	staff_name	varchar	30		The staff name
3.	staff_email	varchar	80		The Staff email ID for login
4.	staaff_pwd	longtext	auto		The Staff password for login

Data Dictionary For User's :-

NO.	ATTRIBUTE	TYPE	LENGTH	KEY	DESCRIPTION
1.	id	INT	11	Primary Key	The user ID
2.	username	varchar	30		The user name
3.	serialnumber	double			The user email ID
4.	gender	varchar	10		User gender
5.	email	varchar	50		User email
6.	Card_uid	varchar	30		User unique card id
7.	card_select	tinyint	1		Singal card select at one time
8.	user_date	date			Date of user
9.	device_uid	varchar	20		Device id
10.	device_dep	varchar	20		Dept. of device
11.	add_card	tinyint	1		Add card on card in single time

Data Dictionary For Devices :-

NO.	ATTRIBUTE	TYPE	LENGTH	KEY	DESCRIPTION
1.	device_id	INT	11	Primary Key	The device ID
2.	device_name	varchar	50		The device name
3.	device_dep	varchar	20		The device dept
4.	device_uid	text			The device unique id
5.	device_date	date			Device date
6	device_mode	tinyint	1		Device mode select any 1

4.5 User Interface Design:

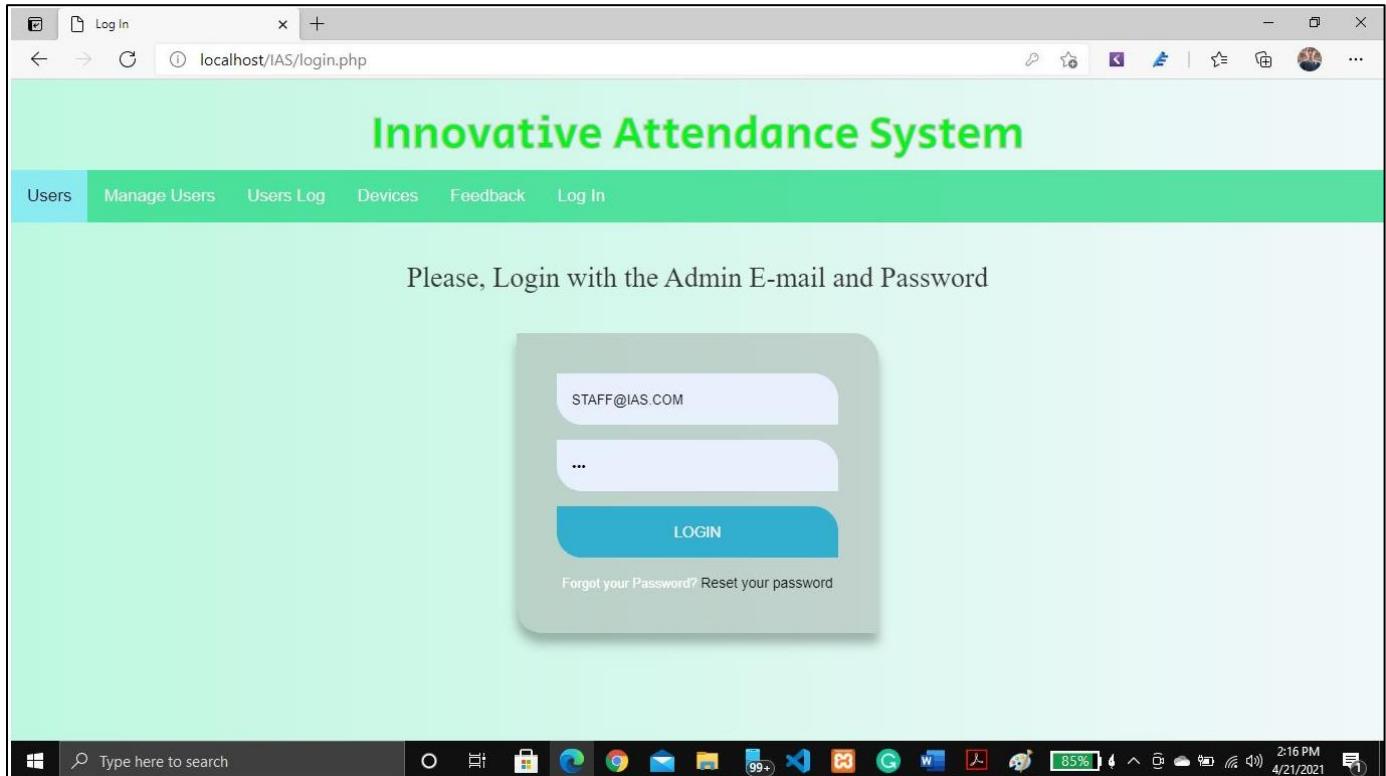


fig: - 4.5.1 User Interface

Admin Panel Login System

- Admin Login/Logout System
- Forgot Password for admin
- Edit and Update admin profile
- Reset Admin Account Password

View and Manage Users

- View users
- Add New User
- Edit and update the existing users
- Remove Users

Feedback for admin

4.5.1 Security Issues: -

RFID, or radio-frequency identification, RFID (Radio Frequency Identification Device) is the technology that uses radiofrequency for the identification of the objects.

RFID tags are usually wireless devices that have electronic data stored within them consisting of unique identity numbers.

This unique identification number is the medium through which communication is done with the receiver. RFID uses wireless frequencies, which by their nature respond to any type of signal without proper verification standards.

Thus, it is prone to attacks like Eavesdropping, Man-in-the-middle attack, etc.

2 Privacy Issues with RFID (Identify Risks)

Some of the RFID tags would hold the information of a particular person. The risk arises when the same information is accessed by an unauthorized user.

1 .Security Concerns Associated with RFID

- Duplicate Designs
- Energy Consumption
- Snooping Attacks
- Replay Attacks
- Virus

2.Privacy Issues with RFID

- Identify Risks
- Misuse of Monetary Information

Chapter 5

Implementation and Testing

5.1 Implementation Approaches

1 . header.php

Code:-

```
<head>
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">
    <link rel='stylesheet' type='text/css' href="css/bootstrap.css"/>
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.0/css/bootstrap.min.css">
    <link rel="stylesheet" type="text/css" href="css/header.css"/>
    <link rel="preconnect" href="https://fonts.gstatic.com">
    <link href="https://fonts.googleapis.com/css2?family=Secular+One&display=swap" rel="stylesheet">
        <!--Including the bootstrap CDN -->
    <!--
- <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.4.1/css/bootstrap.min.css"> --
    <!--
- <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.min.js"> --
<!-- // </script>
    <!--
- <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.16.0/umd/popper.min.js"> --
    <!-- // </script>
    <!--
- <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.4.1/js/bootstrap.min.js"> --
    <!-- // </script>-->
</head>
<header>

<div class="header">
    <div class="logo">
        <a href="index.php">Innovative Attendance System</a>
    </div>
</div>
<?php
```

```

if (isset($_GET['error'])) {
    if ($_GET['error'] == "wrongpasswordup") {
        echo ' <script type="text/javascript">
            setTimeout(function () {
                $(".up_info1").fadeIn(200);
                $(".up_info1").text("The password is wrong!!");
                $("#admin-account").modal("show");
            }, 500);
            setTimeout(function () {
                $(".up_info1").fadeOut(1000);
            }, 3000);
        </script>';
    }
}

if (isset($_GET['success'])) {
    if ($_GET['success'] == "updated") {
        echo ' <script type="text/javascript">
            setTimeout(function () {
                $(".up_info2").fadeIn(200);
                $(".up_info2").text("Your Account has been updated");
            }, 500);
            setTimeout(function () {
                $(".up_info2").fadeOut(1000);
            }, 3000);
        </script>';
    }
}

if (isset($_GET['login'])) {
    if ($_GET['login'] == "success") {
        echo '<script type="text/javascript">

            setTimeout(function () {
                $(".up_info2").fadeIn(200);
                $(".up_info2").text("You successfully logged in");
            }, 500);

            setTimeout(function () {
                $(".up_info2").fadeOut(1000);
            }, 4000);
        </script> ';
    }
}
?>

```

```

<div class="topnav" id="myTopnav">
    <a href="index.php">Users</a>
    <a href="ManageUsers.php">Manage Users</a>
    <a href="UsersLog.php">Users Log</a>
    <a href="devices.php">Devices</a>
    <a href="Send_feedback.php">Feedback</a>

    <?php
        if (isset($_SESSION['Admin-name'])) {
            echo '<a href="#" data-toggle="modal" data-target="#admin-
account">'. $_SESSION['Admin-name']. '</a>';
            echo '<a href="logout.php">Log Out</a>';
        }
        else{
            echo '<a href="login.php">Log In</a>';
        }
    ?>
    <a href="javascript:void(0);" class="icon" onclick="navFunction()">
        <i class="fa fa-bars"></i></a>

</div>

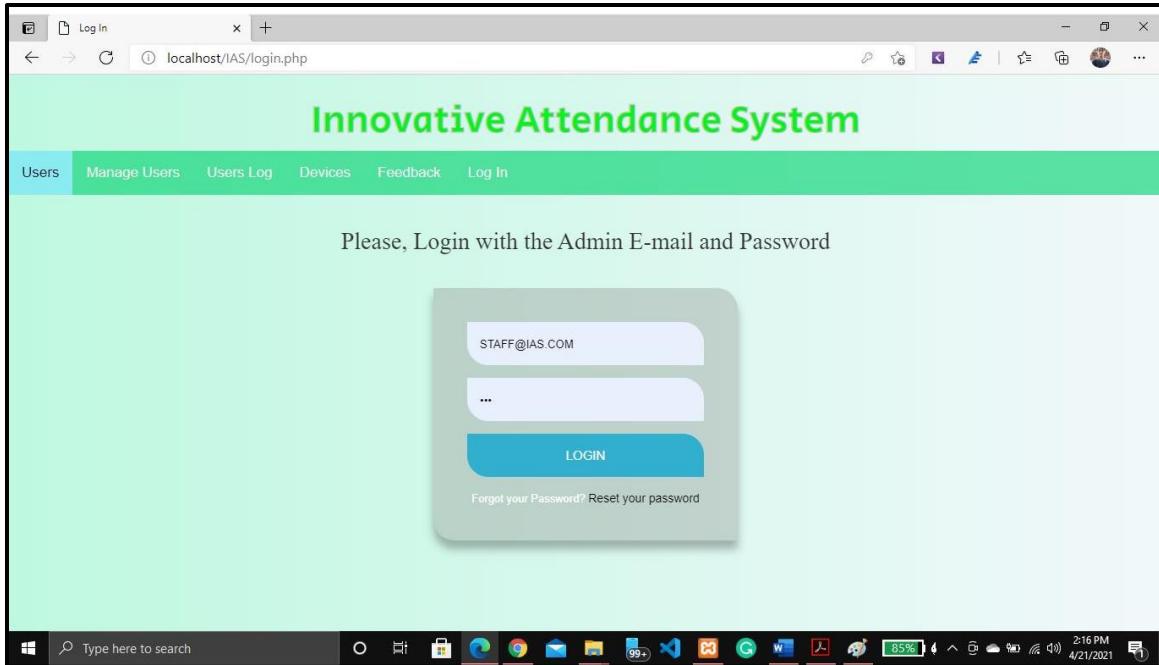
<div class="up_info1 alert-danger"></div>
<div class="up_info2 alert-success"></div>
</header>

<script>
    function navFunction() {
        var x = document.getElementById("myTopnav");
        if (x.className === "topnav") {
            x.className += " responsive";
        } else {
            x.className = "topnav";
        }
    }
</script>

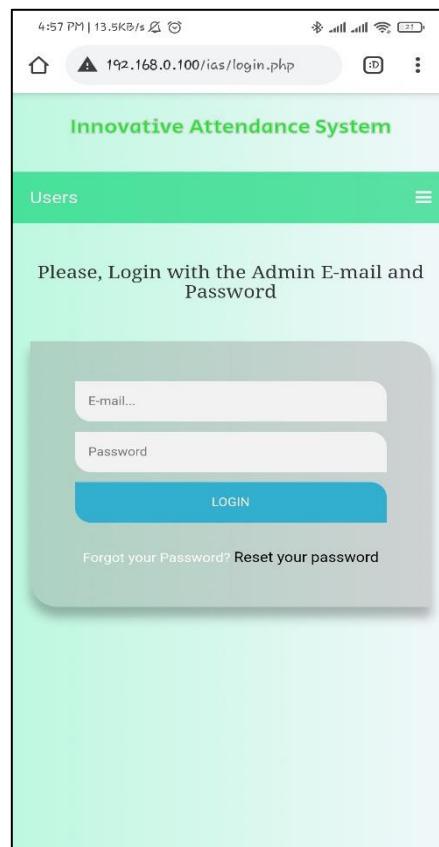
```

```
<!-- Account Update -->
<div class="modal fade" id="admin-account" tabindex="-1" role="dialog" aria-labelledby="Admin Update" aria-hidden="true">
    <div class="modal-dialog modal-dialog-centered" role="document">
        <div class="modal-content">
            <div class="modal-header">
                <h3 class="modal-
title" id="exampleModalLongTitle">Update Your Account Info:</h3>
                <button type="button" class="close" data-dismiss="modal" aria-label="Close">
                    <span aria-hidden="true">&times;</span>
                </button>
            </div>
            <form action="ac_update.php" method="POST" enctype="multipart/form-data">
                <div class="modal-body">
                    <label for="User-mail"><b>Admin Name:</b></label>
                    <input type="text" name="up_name" placeholder="Enter your Name..." value="
<?php echo $_SESSION['Admin-name']; ?>" required/><br>
                    <label for="User-mail"><b>Admin E-mail:</b></label>
                    <input type="email" name="up_email" placeholder="Enter your E-
mail..." value="<?php echo $_SESSION['Admin-email']; ?>" required/><br>
                    <label for="User-psw"><b>Password</b></label>
                    <input type="password" name="up_pwd" placeholder="Enter Admin Password..." required/><br>
                </div>
                <div class="modal-footer">
                    <button type="submit" name="update" class="btn btn-
success">Save changes</button>
                    <button type="button" class="btn btn-secondary" data-
dismiss="modal">Close</button>
                </div>
            </form>
        </div>
    </div>
</div>
<!-- //Account Update -->
```

Output :- web view



Responsive look (mobile):-



2 :- login.php

Code:-

```
<?php
session_start();
if (isset($_SESSION['Admin-name'])) {
    header("location: index.php");
}
?>
<!DOCTYPE html>
<html>
<head>
    <title>Log In</title>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link rel="icon" type="image/png" href="images/favicon.png">
    <link rel="stylesheet" type="text/css" href="css/login.css">
    <script src="js/jquery-2.2.3.min.js"></script>
    <script>
        $(window).on("load resize ", function() {
            var scrollWidth = $('.tbl-content').width() - $('.tbl-
content table').width();
            $('.tbl-header').css({'padding-right':scrollWidth});
        }).resize();
    </script>
    <script type="text/javascript">
        $(document).ready(function(){
            $(document).on('click', '.message', function(){
                $('form').animate({height: "toggle", opacity: "toggle"}, "slow");
                $('h1').animate({height: "toggle", opacity: "toggle"}, "slow");
            });
        });
    </script>
</head>
<body>
<?php include'header.php'; ?>
<main>
    <h1 class="slideInDown animated">Please, Login with the Admin E-
mail and Password</h1>
    <h1 class="slideInDown animated" id="reset">Please, Enter your Email to send the res
et password link</h1>
<!-- Log In -->
<section>
```

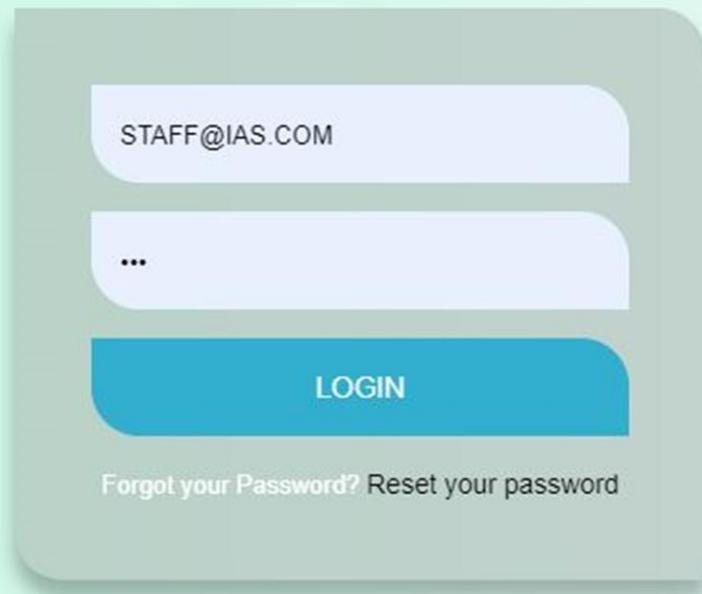
```

<div class="slideInDown animated">
    <div class="login-page">
        <div class="form">
            <?php
                if (isset($_GET['error'])) {
                    if ($_GET['error'] == "invalidEmail") {
                        echo '<div class="alert alert-danger">
                            This E-mail is invalid!!
                        </div>';
                    }
                    elseif ($_GET['error'] == "sqlerror") {
                        echo '<div class="alert alert-danger">
                            There a database error!!
                        </div>';
                    }
                    elseif ($_GET['error'] == "wrongpassword") {
                        echo '<div class="alert alert-danger">
                            Wrong password!!
                        </div>';
                    }
                    elseif ($_GET['error'] == "nouser") {
                        echo '<div class="alert alert-danger">
                            This E-mail does not exist!!
                        </div>';
                    }
                }
                if (isset($_GET['reset'])) {
                    if ($_GET['reset'] == "success") {
                        echo '<div class="alert alert-success">
                            Check your E-mail!
                        </div>';
                    }
                }
                if (isset($_GET['account'])) {
                    if ($_GET['account'] == "activated") {
                        echo '<div class="alert alert-success">
                            Please Login
                        </div>';
                    }
                }
                if (isset($_GET['active'])) {
                    if ($_GET['active'] == "success") {
                        echo '<div class="alert alert-success">
                            The activation like has been sent!
                        </div>';
                    }
                }
            }
        </div>
    </div>
</div>
```

```
        }
    }
?>
<div class="alert1"></div>
<form class="reset-
form" action="reset_pass.php" method="post" enctype="multipart/form-data">
    <input type="email" name="email" placeholder="E-mail..." required/>
    <button type="submit" name="reset_pass">Reset</button>
    <p class="message"><a href="#">LogIn</a></p>
</form>
<form class="login-
form" action="ac_login.php" method="post" enctype="multipart/form-data">
    <input type="email" name="email" id="email" placeholder="E-
mail..." required/>
    <input type="password" name="pwd" id="pwd" placeholder="Password" required/>
    <button type="submit" name="login" id="login">login</button>
    <p class="message">Forgot your Password? <a href="#">Reset your password</a>
</p>
</form>
</div>
</div>
</div>
</section>
</main>
</body>
</html>
```

Output:-

Please, Login with the Admin E-mail and Password



3. ManageUsers.php

Code:-

```
<?php
session_start();
if (!isset($_SESSION['Admin-name'])) {
    header("location: login.php");
}
?>
<!DOCTYPE html>
<html>
<head>
    <title>Manage Users</title>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link rel="icon" type="image/png" href="images/favicon.png">
    <link rel="stylesheet" type="text/css" href="css/manageusers.css">

    <script type="text/javascript" src="js/jquery-2.2.3.min.js"></script>
    <script src="https://code.jquery.com/jquery-3.3.1.js"
           integrity="sha1256-2Kok7MbOyxpgUVvAk/HJ2jigOSYS2auK4Pfzbm7uH60="
           crossorigin="anonymous">
    </script>
    <script type="text/javascript" src="js/bootbox.min.js"></script>
    <script type="text/javascript" src="js/bootstrap.js"></script>
    <script src="js/manage_users.js"></script>
    <script>
        $(window).on("load resize ", function() {
            var scrollWidth = $('.tbl-content').width() - $('.tbl-
content table').width();
            $('.tbl-header').css({'padding-right':scrollWidth});
        }).resize();
    </script>
    <script>
        $(document).ready(function(){
            $.ajax({
                url: "manage_users_up.php"
            }).done(function(data) {
                $('#manage_users').html(data);
            });
            setInterval(function(){
                $.ajax({
                    url: "manage_users_up.php"
                }).done(function(data) {
```

```

        $( '#manage_users' ).html(data);
    });
},5000);
});
</script>
</head>
<body>
<?php include'header.php';?>
<main>
    <h1 class="slideInDown animated">Add a new User or update his information <br> or
remove him</h1>
    <div class="form-style-5 slideInDown animated">
        <form enctype="multipart/form-data">
            <div class="alert_user"></div>
            <fieldset>
                <legend><span class="number">1</span> User Info</legend>
                <input type="hidden" name="user_id" id="user_id">
                <input type="text" name="name" id="name" placeholder="User Name...">
                <input type="text" name="number" id="number" placeholder="Serial Numbe
r...">
                <input type="email" name="email" id="email" placeholder="User Email...>
            </fieldset>
            <fieldset>
                <legend><span class="number">2</span> Additional Info</legend>
                <label>
                    <label for="Device"><b>User Department:</b></label>
                    <select class="dev_sel" name="dev_sel" id="dev_sel" style="color:
#000;">
                        <option value="0">All Departments</option>
                        <?php
                            require'connectDB.php';
                            $sql = "SELECT * FROM devices ORDER BY device_name ASC";
                            $result = mysqli_stmt_init($conn);
                            if (!mysqli_stmt_prepare($result, $sql)) {
                                echo '<p class="error">SQL Error</p>';
                            }
                            else{
                                mysqli_stmt_execute($result);
                                $result1 = mysqli_stmt_get_result($result);
                                while ($row = mysqli_fetch_assoc($result1)){
                                    ?>
                                    <option value="<?php echo $row['device_uid'];?>"><?php e
cho $row['device_dep']; ?></option>
                                <?php

```

```
        }
    }
?>
</select>
<input type="radio" name="gender" class="gender" value="Female">Female
<input type="radio" name="gender" class="gender" value="Male" checked="checked">Male
</label >
</fieldset>
<button type="button" name="user_add" class="user_add">Add User</button>
<button type="button" name="user_upd" class="user_upd">Update User</button>
>
<button type="button" name="user_rmo" class="user_rmo">Remove User</button>
>
</form>
</div>

<!--User table-->
<div class="section">

    <div class="slideInRight animated">
        <div id="manage_users"></div>
    </div>
</div>
</main>
</body>
</html>
```

OUTPUT: -

The screenshot shows a web browser window titled "Manage Users" with the URL "localhost/IAS/ManageUsers.php". The main title is "Innovative Attendance System". The navigation bar includes links for "Users", "Manage Users", "Users Log", "Devices", "Feedback", "PRADEEP VISHWAKARMA", and "Log Out". A central message says "ADD A NEW USER OR UPDATE HIS INFORMATION OR REMOVE HIM". On the left, there are two sections: "User Info" and "Additional Info". "User Info" contains fields for "User Name...", "Serial Number...", and "User Email...". "Additional Info" includes a dropdown for "User Department" set to "All Departments". To the right is a table:

CARD UID	NAME	GENDER	S.NO	DATE	DEPARTMENT
282224949	USER 1	Male	1	2021-04-17	I.T. DEPT.
✓ 20224180173	USER 2	Male	2	2021-04-17	I.T. DEPT.

The taskbar at the bottom shows various application icons and the date/time "4/21/2021 3:32 PM".

This screenshot shows the same "Manage Users" page as above, but the "Add User" button in the "Additional Info" section is highlighted with a red box. The rest of the interface is identical to the first screenshot.

4 devices.php

Code:-

Manage Devices

```
<?php
session_start();
if (!isset($_SESSION['Admin-name'])) {
    header("location: login.php");
}
?>
<!DOCTYPE html>
<html>
<head>
    <title>Manage Devices</title>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
<!--    <link rel="icon" type="image/png" href="images/favicon.png"> -->
    <link rel="stylesheet" type="text/css" href="css/devices.css"/>

    <script type="text/javascript" src="js/jquery-2.2.3.min.js"></script>
    <script src="https://code.jquery.com/jquery-3.3.1.js"
           integrity="sha1256-2Kok7MbOyxpgUVvAk/HJ2jigOSYS2auK4Pfzbm7uH60="
           crossorigin="anonymous">
    </script>
    <script type="text/javascript" src="js/bootbox.min.js"></script>
    <script type="text/javascript" src="js/bootstrap.js"></script>
    <script src="js/dev_config.js"></script>
    <script>
        $(window).on("load resize ", function() {
            var scrollWidth = $('.tbl-content').width() - $('.tbl-
content table').width();
            $('.tbl-header').css({'padding-right':scrollWidth});
        }).resize();
    </script>
    <script>
        $(document).ready(function(){
            $.ajax({
                url: "dev_up.php",
                type: 'POST',
                data: {
                    'dev_up': 1,
                }
            }).done(function(data) {

```

```

        $('#devices').html(data);
    });
});
</script>
</head>
<body>
<?php include'header.php';?>
<main>
    <h1 class="slideInDown animated">Add a new Device/update/remove/Enable/Disable</h1>

    <section class="container py-lg-5">
        <div class="alert_dev"></div>
        <!-- devices -->
        <div class="row">
            <div class="col-lg-12 mt-4">
                <div class="panel">
                    <div class="panel-heading" style="font-size: 19px;">Your Devices:</div>
                    <button type="button" class="btn btn-success" data-toggle="modal" data-target="#new-device" style="font-size: 18px; float: right; margin-top: -6px;">New Device</button>
                </div>
                <div class="panel-body">
                    <div id="devices"></div>
                </div>
            </div>
        </div>
        <!-- \devices -->
        <!-- New Devices -->
        <div class="modal fade" id="new-device" tabindex="-1" role="dialog" aria-labelledby="New Device" aria-hidden="true">
            <div class="modal-dialog modal-dialog-centered" role="document">
                <div class="modal-content">
                    <div class="modal-header">
                        <h3 class="modal-title" id="exampleModalLongTitle">Add new device:</h3>
                        <button type="button" class="close" data-dismiss="modal" aria-label="Close">
                            <span aria-hidden="true">&times;</span>
                        </button>
                    </div>
                    <form action="" method="POST" enctype="multipart/form-data">
                        <div class="modal-body">
                            <label for="User-mail"><b>Device Name:</b></label>

```

```

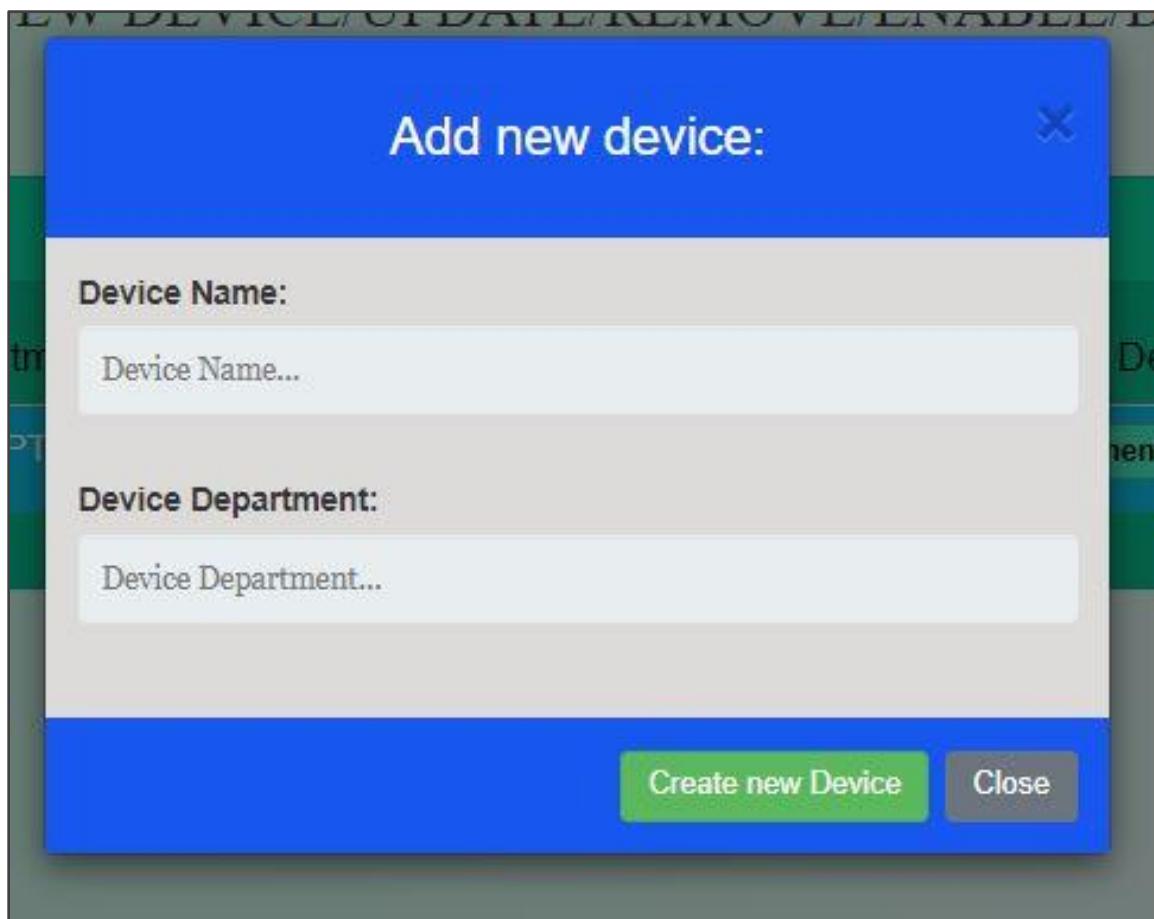
        <input type="text" name="dev_name" id="dev_name" placeholder="Device Name..." required/><br>
            <label for="User-mail"><b>Device Department:</b></label>
            <input type="text" name="dev_dep" id="dev_dep" placeholder="Device Department..." required/><br>
        </div>
        <div class="modal-footer">
            <button type="button" name="dev_add" id="dev_add" class="btn btn-success">Create new Device</button>
            <button type="button" class="btn btn-secondary" data-dismiss="modal">Close</button>
        </div>
    </form>
</div>
</div>
<!-- //New Devices -->
</section>
</main>
</body>
</html>

```

OUTPUT:- Devices

Your Devices:						New Device
De.Name	De.Department	De.UID	De.Date	De.Mode	De.Config	
IT@IAS_DEVICE	I.T. DEPT.	3278fc8946408070	2021-04-17	Enrollment	Attendance	

Add one or more device :-



5 UsersLog.php

User Logs In Time Or Out Time Showing:-

```
<?php
session_start();
if (!isset($_SESSION['Admin-name'])) {
    header("location: login.php");
}
?>
<!DOCTYPE html>
<html>
<head>
    <title>Users Logs</title>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <!-- <link rel="icon" type="image/png" href="icon/ok_check.png" -->
    <link rel="stylesheet" type="text/css" href="css/userslog.css">

    <script type="text/javascript" src="js/jquery-2.2.3.min.js"></script>
    <script src="https://code.jquery.com/jquery-3.3.1.js"
           integrity="sha1256-2Kok7MbOyxpgUVvAk/HJ2jigOSYS2auK4Pfzbm7uH60="
           crossorigin="anonymous">
    </script>
    <script type="text/javascript" src="js/bootbox.min.js"></script>
    <script type="text/javascript" src="js/bootstrap.js"></script>
    <script src="js/user_log.js"></script>
    <script>
        $(window).on("load resize ", function() {
            var scrollWidth = $('.tbl-content').width() - $('.tbl-content table').width();
            $('.tbl-header').css({'padding-right':scrollWidth});
        }).resize();
    </script>
    <script>
        $(document).ready(function(){
            $.ajax({
                url: "user_log_up.php",
                type: 'POST',
                data: {
                    'select_date': 1,
                }
            }).done(function(data) {
                $('#userslog').html(data);
            });
        });
    </script>
```

```

setInterval(function(){
    $.ajax({
        url: "user_log_up.php",
        type: 'POST',
        data: {
            'select_date': 0,
        }
    }).done(function(data) {
        $('#userslog').html(data);
    });
},5000);
});
</script>
</head>
<body>
<?php include'header.php'; ?>
<section class="container py-lg-5">
    <!--User table-->
    <h1 class="slideInDown animated">Here are the Users daily logs</h1>
    <div class="form-style-5">
        <button type="button" data-toggle="modal" data-target="#Filter-
export">Log Filter/ Export to Excel</button>
    </div>
    <!-- Log filter -->
    <div class="modal fade bd-example-modal-lg" id="Filter-export" tabindex="-
1" role="dialog" aria-labelledby="Filter/Export" aria-hidden="true">
        <div class="modal-dialog modal-dialog-centered modal-
lg animate" role="document">
            <div class="modal-content">
                <div class="modal-header">
                    <h3 class="modal-
title" id="exampleModalLongTitle">Filter Your User Log:</h3>
                    <button type="button" class="close" data-dismiss="modal" aria-
label="Close">
                        <span aria-hidden="true">&times;</span>
                    </button>
                </div>
                <form method="POST" action="Export_Excel.php" enctype="multipart/form-data">
                    <div class="modal-body">
                        <div class="container-fluid">
                            <div class="row">
                                <div class="col-lg-6 col-sm-6">
                                    <div class="panel panel-primary">
                                        <div class="panel-heading">Filter By Date:</div>
                                        <div class="panel-body">

```

```

        <label for="Start-Date"><b>Select from this Date:</b></label>
        <input type="date" name="date_sel_start" id="date_sel_start">
        <label for="End -Date"><b>To End of this Date:</b></label>
        <input type="date" name="date_sel_end" id="date_sel_end">
        </div>
    </div>
<div class="col-lg-6 col-sm-6">
    <div class="panel panel-primary">
        <div class="panel-heading">
            Filter By:
            <div class="time">
                <input type="radio" id="radio-one" name="time_sel" class="time_sel" value="Time_in" checked/>
                <label for="radio-one">Time-in</label>
                <input type="radio" id="radio-two" name="time_sel" class="time_sel" value="Time_out" />
                <label for="radio-two">Time-out</label>
            </div>
        </div>
        <div class="panel-body">
            <label for="Start-Time"><b>Select from this Time:</b></label>
            <input type="time" name="time_sel_start" id="time_sel_start">
            <label for="End -Time"><b>To End of this Time:</b></label>
            <input type="time" name="time_sel_end" id="time_sel_end">
        </div>
        </div>
    </div>
<div class="row">
    <div class="col-lg-4 col-sm-12">
        <label for="Fingerprint"><b>Filter By User:</b></label>
        <select class="card_sel" name="card_sel" id="card_sel">
            <option value="0">All Users</option>
            <?php
                require'connectDB.php';
                $sql = "SELECT * FROM users WHERE add_card=1 ORDER BY id ASC";
                $result = mysqli_stmt_init($conn);
                if (!mysqli_stmt_prepare($result, $sql)) {
                    echo '<p class="error">SQL Error</p>';
                }
                else{
                    mysqli_stmt_execute($result);
                    $resultl = mysqli_stmt_get_result($result);
                    while ($row = mysqli_fetch_assoc($resultl)){

```

```

        ?>
            <option value="<?php echo $row['card_uid'];?>"><?php ech
o $row['username']; ?></option>
            <?php
                }
            }
        ?>
    </select>
</div>
<div class="col-lg-4 col-sm-12">
    <label for="Device"><b>Filter By Device department:</b></label>
    <select class="dev_sel" name="dev_sel" id="dev_sel">
        <option value="0">All Departments</option>
        <?php
            require'connectDB.php';
            $sql = "SELECT * FROM devices ORDER BY device_dep ASC";
            $result = mysqli_stmt_init($conn);
            if (!mysqli_stmt_prepare($result, $sql)) {
                echo '<p class="error">SQL Error</p>';
            }
            else{
                mysqli_stmt_execute($result);
                $result1 = mysqli_stmt_get_result($result);
                while ($row = mysqli_fetch_assoc($result1)){
                    ?>
                    <option value="<?php echo $row['device_uid'];?>"><?php e
cho $row['device_dep']; ?></option>
                    <?php
                        }
                    }
                }
            ?>
        </select>
    </div>
    <div class="col-lg-4 col-sm-12">
        <label for="Fingerprint"><b>Export to Excel:</b></label>
        <input type="submit" name="To_Excel" value="Export">
    </div>
    </div>
</div>
<div class="modal-footer">
    <button type="button" name="user_log" id="user_log" class="btn btn-
success">SHOW DATA </button>
    <button type="button" class="btn btn-secondary" data-
dismiss="modal">Cancel</button>

```

```

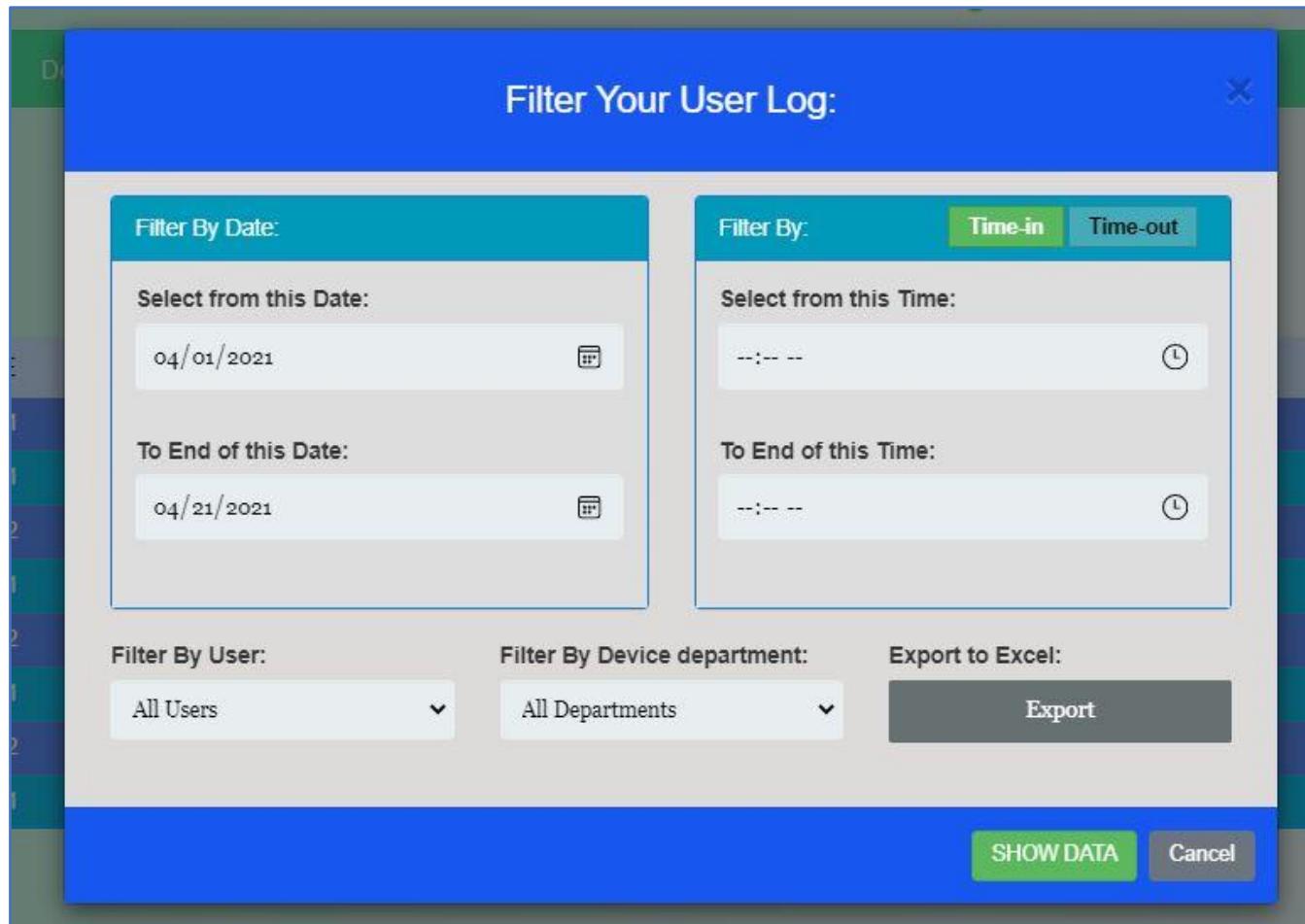
        </div>
    </form>
</div>
</div>
</div>
<!-- //Log filter -->
<div class="slideInRight animated">
    <div id="userslog"></div>
</div>
</section>
</main>
</body>
</html>

```

Output:- USERS DAILY LOGS & Filter Your User Log Data Also export Excel sheet

Innovative Attendance System

ID	NAME	SERIAL NUMBER	CARD UID	DEVICE DEP	DATE	TIME IN	TIME OUT
8	USER 1	1	282224949	IT. DEPT.	2021-04-17	18:12:45	18:12:47
7	USER 1	1	282224949	IT. DEPT.	2021-04-17	18:11:21	18:11:33
6	USER 2	2	20224180173	IT. DEPT.	2021-04-17	18:11:13	18:11:15
5	USER 1	1	282224949	IT. DEPT.	2021-04-17	15:32:24	16:13:35
4	USER 2	2	20224180173	IT. DEPT.	2021-04-17	15:31:45	15:32:18
3	USER 1	1	282224949	IT. DEPT.	2021-04-17	01:04:28	01:05:35
2	USER 2	2	20224180173	IT. DEPT.	2021-04-17	01:04:20	01:05:32
1	USER 1	1	282224949	IT. DEPT.	2021-04-17	01:01:06	01:01:34



5.1 Your User Log Data Also export to Excel sheet's

Code:-

```
<?php
//Connect to database
require'connectDB.php';

$output = '';

if(isset($_POST[ "To_Excel"])){
    $searchQuery = " ";
    $Start_date = " ";
    $End_date = " ";
    $Start_time = " ";
    $End_time = " ";
```

```

$card_sel = " ";

//Start date filter
if ($_POST['date_sel_start'] != 0) {
    $Start_date = $_POST['date_sel_start'];
    $_SESSION['searchQuery'] = "checkinDate='".$Start_date."'";
}
else{
    $Start_date = date("Y-m-d");
    $_SESSION['searchQuery'] = "checkinDate='".$date("Y-m-d")."'";
}
//End date filter
if ($_POST['date_sel_end'] != 0) {
    $End_date = $_POST['date_sel_end'];
    $_SESSION['searchQuery'] = "checkinDate BETWEEN '".$Start_date."' AND '".$End_date."'";
}
//Time-In filter
if ($_POST['time_sel'] == "Time_in") {
    //Start time filter
    if ($_POST['time_sel_start'] != 0 && $_POST['time_sel_end'] == 0) {
        $Start_time = $_POST['time_sel_start'];
        $_SESSION['searchQuery'] .= " AND timein='".$Start_time."'";
    }
    elseif ($_POST['time_sel_start'] != 0 && $_POST['time_sel_end'] != 0) {
        $Start_time = $_POST['time_sel_start'];
    }
    //End time filter
    if ($_POST['time_sel_end'] != 0) {
        $End_time = $_POST['time_sel_end'];
        $_SESSION['searchQuery'] .= " AND timein BETWEEN '".$Start_time."' AND '".$End_time."'";
    }
}
//Time-out filter
if ($_POST['time_sel'] == "Time_out") {
    //Start time filter
    if ($_POST['time_sel_start'] != 0 && $_POST['time_sel_end'] == 0) {
        $Start_time = $_POST['time_sel_start'];
        $_SESSION['searchQuery'] .= " AND timeout='".$Start_time."'";
    }
    elseif ($_POST['time_sel_start'] != 0 && $_POST['time_sel_end'] != 0) {
        $Start_time = $_POST['time_sel_start'];
    }
    //End time filter
}

```

```

    if ($_POST['time_sel_end'] != 0) {
        $End_time = $_POST['time_sel_end'];
        $_SESSION['searchQuery'] .= " AND timeout BETWEEN '". $Start_time ."' AND '" . $End_time . "' ";
    }
}

//Card filter
if ($_POST['card_sel'] != 0) {
    $card_sel = $_POST['card_sel'];
    $_SESSION['searchQuery'] .= " AND card_uid='". $card_sel . "' ";
}

//Department filter
if ($_POST['dev_sel'] != 0) {
    $dev_uid = $_POST['dev_sel'];
    $_SESSION['searchQuery'] .= " AND device_uid='". $dev_uid . "' ";
}

$sql = "SELECT * FROM users_logs WHERE ".$_SESSION['searchQuery']. " ORDER BY id DESC";
$result = mysqli_query($conn, $sql);
if($result->num_rows > 0){
    $output .= '
        <table class="table" bordered="1">
            <TR>
                <TH>ID</TH>
                <TH>Name</TH>
                <TH>Serial Number</TH>
                <TH>Card UID</TH>
                <TH>Device ID</TH>
                <TH>Device Dep</TH>
                <TH>Date log</TH>
                <TH>Time In</TH>
                <TH>Time Out</TH>
            </TR>';
    while($row=$result->fetch_assoc()) {
        $output .= '
            <TR>
                <TD> '.$row['id'].'</TD>
                <TD> '.$row['username'].'</TD>
                <TD> '.$row['serialnumber'].'</TD>
                <TD> '.$row['card_uid'].'</TD>
                <TD> '.$row['device_uid'].'</TD>
                <TD> '.$row['device_dep'].'</TD>
                <TD> '.$row['checkindate'].'</TD>
                <TD> '.$row['timein'].'</TD>
            </TR>';
    }
}

```

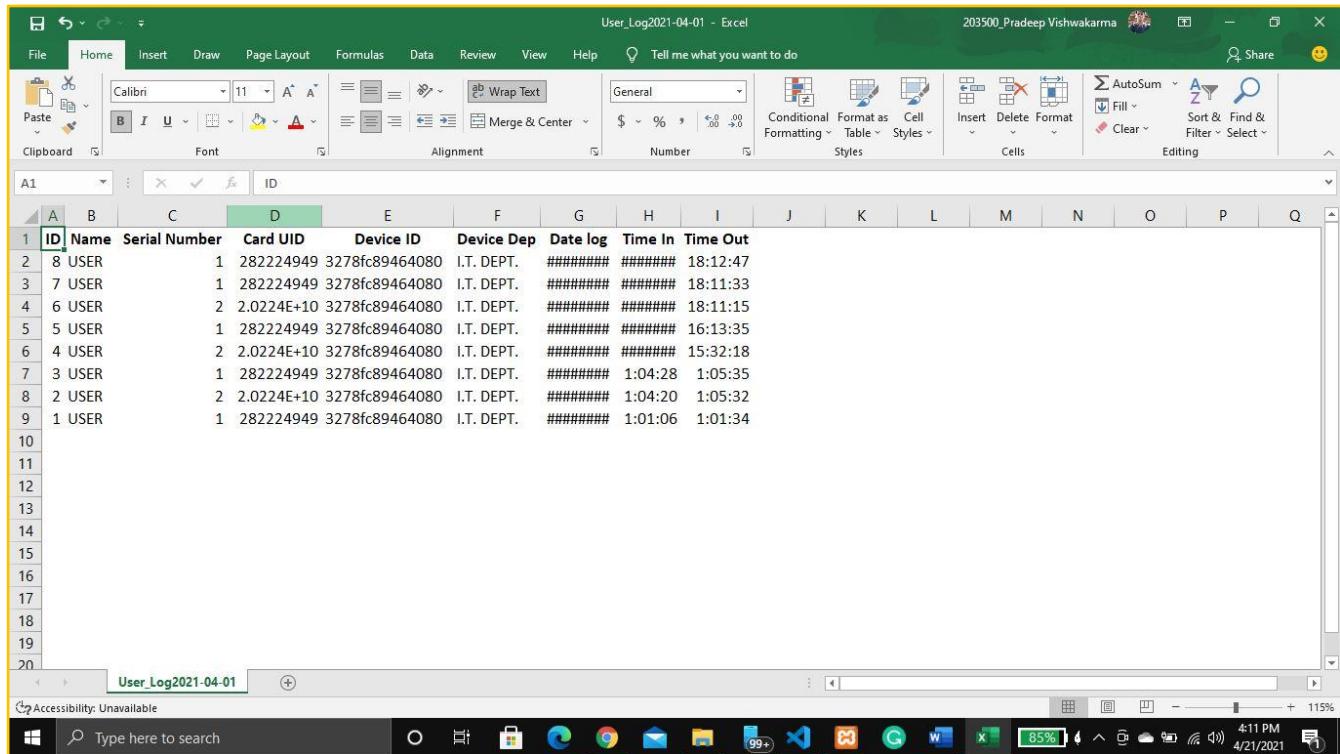
```

        <TD> '.$row['timeout']. '</TD>
    </TR>';
}
$output .= '</table>';
header('Content-Type: application/xls');
header('Content-
Disposition: attachment; filename=User_Log'.$Start_date.'.xls');

echo $output;
exit();
}
else{
    header( "location: UsersLog.php" );
    exit();
}
?

```

Output:-



ID	Name	Serial Number	Card UID	Device ID	Device Dep	Date log	Time In	Time Out
2	8 USER	1	282224949	3278fc89464080	I.T. DEPT.	#####	#####	18:12:47
3	7 USER	1	282224949	3278fc89464080	I.T. DEPT.	#####	#####	18:11:33
4	6 USER	2	2.0224E+10	3278fc89464080	I.T. DEPT.	#####	#####	18:11:15
5	5 USER	1	282224949	3278fc89464080	I.T. DEPT.	#####	#####	16:13:35
6	4 USER	2	2.0224E+10	3278fc89464080	I.T. DEPT.	#####	#####	15:32:18
7	3 USER	1	282224949	3278fc89464080	I.T. DEPT.	#####	1:04:28	1:05:35
8	2 USER	2	2.0224E+10	3278fc89464080	I.T. DEPT.	#####	1:04:20	1:05:32
9	1 USER	1	282224949	3278fc89464080	I.T. DEPT.	#####	1:01:06	1:01:34
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

6. getdata.php Getting data from hardware to Php Web interface

code:-

```
<?php
//Connect to database
require 'connectDB.php';
date_default_timezone_set('Asia/Calcutta');
$d = date("Y-m-d");
$t = date("H:i:s A");

if (isset($_GET['card_uid']) && isset($_GET['device_token'])) {

    $card_uid = $_GET['card_uid'];
    $device_uid = $_GET['device_token'];

    $sql = "SELECT * FROM devices WHERE device_uid=?";
    $result = mysqli_stmt_init($conn);
    if (!mysqli_stmt_prepare($result, $sql)) {
        echo "SQL_Error_Select_device";
        exit();
    }
    else{
        mysqli_stmt_bind_param($result, "s", $device_uid);
        mysqli_stmt_execute($result);
        $resultl = mysqli_stmt_get_result($result);
        if ($row = mysqli_fetch_assoc($resultl)){
            $device_mode = $row['device_mode'];
            $device_dep = $row['device_dep'];
            if ($device_mode == 1) {
                $sql = "SELECT * FROM users WHERE card_uid=?";
                $result = mysqli_stmt_init($conn);
                if (!mysqli_stmt_prepare($result, $sql)) {
                    echo "SQL_Error_Select_card";
                    exit();
                }
                else{
                    mysqli_stmt_bind_param($result, "s", $card_uid);
                    mysqli_stmt_execute($result);
                    $resultl = mysqli_stmt_get_result($result);
                    if ($row = mysqli_fetch_assoc($resultl)){
                        //*****
                        //An existed Card has been detected for Login or Logout
                        if ($row['add_card'] == 1){
                            //*****
                        }
                    }
                }
            }
        }
    }
}
```

```

        if ($row['device_uid'] == $device_uid || $row['device_uid'] ==
0){
            $Uname = $row['username'];
            $Number = $row['serialnumber'];
            $sql = "SELECT * FROM users_logs WHERE card_uid=? AND
checkindate=? AND card_out=0";
            $result = mysqli_stmt_init($conn);
            if (!mysqli_stmt_prepare($result, $sql)) {
                echo "SQL_Error_Select_logs";
                exit();
            }
            else{
                mysqli_stmt_bind_param($result, "ss", $card_uid, $d);
                mysqli_stmt_execute($result);
                $result1 = mysqli_stmt_get_result($result);
                //*****
                //Login
                if (!$row = mysqli_fetch_assoc($result1)){

                    $sql = "INSERT INTO users_logs (username, seri
alnumber, card_uid, device_uid, device_dep, checkindate, timein, timeout) VALUES (?, ?, ?, ?, ?, ?, ?)";
                    $result = mysqli_stmt_init($conn);
                    if (!mysqli_stmt_prepare($result, $sql)) {
                        echo "SQL_Error_Select_login1";
                        exit();
                    }
                    else{
                        $timeout = "00:00:00";
                        mysqli_stmt_bind_param($result, "sdssssss"
, $Uname, $Number, $card_uid, $device_uid, $device_dep, $d, $t, $timeout);
                        mysqli_stmt_execute($result);

                        echo "login".$Uname;
                        exit();
                    }
                }
                //*****
                //Logout
                else{
                    $sql="UPDATE users_logs SET timeout=?, card_o
ut=1 WHERE card_uid=? AND checkindate=? AND card_out=0";

```

```

        $result = mysqli_stmt_init($conn);
        if (!mysqli_stmt_prepare($result, $sql)) {
            echo "SQL_Error_insert_logout1";
            exit();
        }
        else{
            mysqli_stmt_bind_param($result, "sss", $t,
$card_uid, $d);
            mysqli_stmt_execute($result);

            echo "logout".$Uname;
            exit();
        }
    }
}
else {
    echo "Not Allowed!";
    exit();
}
}
else if ($row['add_card'] == 0){
    echo "Not registerd!";
    exit();
}
else{
    echo "Not found!";
    exit();
}
}
else if ($device_mode == 0) {
    //New Card has been added
    $sql = "SELECT * FROM users WHERE card_uid=?";
    $result = mysqli_stmt_init($conn);
    if (!mysqli_stmt_prepare($result, $sql)) {
        echo "SQL_Error_Select_card";
        exit();
    }
    else{
        mysqli_stmt_bind_param($result, "s", $card_uid);
        mysqli_stmt_execute($result);
        $resultl = mysqli_stmt_get_result($result);
        //The Card is available
    }
}
}

```

```

if ($row = mysqli_fetch_assoc($resultl)){
    $sql = "SELECT card_select FROM users WHERE card_select=1";
    $result = mysqli_stmt_init($conn);
    if (!mysqli_stmt_prepare($result, $sql)) {
        echo "SQL_Error_Select";
        exit();
    }
    else{
        mysqli_stmt_execute($result);
        $resultl = mysqli_stmt_get_result($result);

        if ($row = mysqli_fetch_assoc($resultl)) {
            $sql="UPDATE users SET card_select=0";
            $result = mysqli_stmt_init($conn);
            if (!mysqli_stmt_prepare($result, $sql)) {
                echo "SQL_Error_insert";
                exit();
            }
            else{
                mysqli_stmt_execute($result);

                $sql="UPDATE users SET card_select=1 WHERE card_uid
d=?";
                $result = mysqli_stmt_init($conn);
                if (!mysqli_stmt_prepare($result, $sql)) {
                    echo "SQL_Error_insert_An_available_card";
                    exit();
                }
                else{
                    mysqli_stmt_bind_param($result, "s", $card_uid
);
                    mysqli_stmt_execute($result);

                    echo "available";
                    exit();
                }
            }
        }
        else{
            $sql="UPDATE users SET card_select=1 WHERE card_uid=?";
;
            $result = mysqli_stmt_init($conn);
            if (!mysqli_stmt_prepare($result, $sql)) {
                echo "SQL_Error_insert_An_available_card";
                exit();
            }
        }
    }
}

```

```

        }
        else{
            mysqli_stmt_bind_param($result, "s", $card_uid);
            mysqli_stmt_execute($result);

            echo "available";
            exit();
        }
    }
}

//The Card is new
else{
    $sql="UPDATE users SET card_select=0";
    $result = mysqli_stmt_init($conn);
    if (!mysqli_stmt_prepare($result, $sql)) {
        echo "SQL_Error_insert";
        exit();
    }
    else{
        mysqli_stmt_execute($result);
        $sql = "INSERT INTO users (card_uid, card_select, device_u
id, device_dep, user_date) VALUES (?, 1, ?, ?, CURDATE())";
        $result = mysqli_stmt_init($conn);
        if (!mysqli_stmt_prepare($result, $sql)) {
            echo "SQL_Error_Select_add";
            exit();
        }
        else{
            mysqli_stmt_bind_param($result, "sss", $card_uid, $dev
ice_uid, $device_dep );
            mysqli_stmt_execute($result);

            echo "succesful";
            exit();
        }
    }
}
else{
    echo "Invalid Device!";
    exit();
}

```

```
    }
}
?>
```

7 .Send_feedback.php (Getting feedback from users using php mail function)

```
<!DOCTYPE html>
<html>
<head>

<title>Send feedback from user </title>

<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">
<link rel='stylesheet' type='text/css' href="css/bootstrap.css"/>
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.0/css/bootstrap.min.css">
<link rel="stylesheet" type="text/css" href="css/header.css"/>
<link rel="preconnect" href="https://fonts.gstatic.com">
<link href="https://fonts.googleapis.com/css2?family=Secular+One&display=swap" rel="stylesheet">

</head>

<?php
session_start();
if (!isset($_SESSION['Admin-name'])) {
    header("Send_feedback.php");
}
?>

<!-- feedback is received from user to admin mail id -->
<?php
$msg = '';

if(isset($_FILES["file"]["name"]) && isset($_POST['message'])) {
    $toemail = "help.iasystem@gmail.com";
    $name = $_POST['name'];
    $subject = $_POST['subject'];
    $message = $_POST['message'];
    $fromemail = "help.pradeepvishwakarma@gmail.com";
    $email1 =$_POST['useremail'];
```

```

// echo ($email1);
$msg = "hello $name <br> feedback message - $message - ";
$msg = "<h1 style='color:green;'> I-A-SYSTEM </h1>
<h2 style='color:#0ad476a8;'>Feedback Received From User</h2>
<p><b>Hello $name </b></p><br>
<p><b>USER E-MAIL:- $email1 </b></p><br>
<p><b>Message:-</b> $message </p>";

$s_m = md5(uniqid(time()));
$headers = "From: ".$fromemail;
$mime_boundary = "==Multipart_Boundary_x{$s_m}x";

$headers .= "\nMIME-Version: 1.0\n" .
"Content-Type: multipart/mixed;\n" .
" boundary={$mime_boundary}\n";

$msg .= "This is a multi-part message in MIME format.\n\n" .
"--{$mime_boundary}\n" .
"Content-Type:text/html; charset=\"iso-8859-1\"\n" .
"Content-Transfer-Encoding: 7bit\n\n" .
$msg .= "\n\n";

// chaking files are selected or not

if($_FILES["file"]["name"]!=""){
    $file_name = $_FILES["file"]["name"];

    $content = chunk_split(base64_encode(
        file_get_contents($_FILES["file"]["tmp_name"])));

    $msg .= "--{$mime_boundary}\n" .
"Content-Type: application/octet-stream;\n" .
" name=\"$file_name\"\n" .
// "Content-Disposition: attachment;\n" .
// " filename=\"$fileatt_name\"\n" .
"Content-Transfer-Encoding: base64\n\n" .
$content .= "\n\n" .

```

```

"--{$mime_boundary}--\n";
}

//mail fuction of php

if(mail($toemail, $subject, $msg, $headers)){
    $Msg= "$name." your feed-back has been submitted";

    }else{
        $Msg= "$name." your feed-back is not submitted";
    }
}

?>
<!-- feedback form is receiving all input from user-->

<!DOCTYPE html>
<html>

<head>
    <title> Getting feedback from user email I.A.Sys.</title>
    <meta charset="utf-8">
    <meta name="viewport"
          content="width=device-width, initial-scale=1">
    <link rel="stylesheet" href=
"https://maxcdn.bootstrapcdn.com/bootstrap/4.4.1/css/bootstrap.min.css">
    <script src=
"https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.min.js">
    </script>
    <script src=
"https://cdn.jsdelivr.net/npm/popper.js@1.16.0/dist/umd/popper.min.js">
    </script>
    <script src=
"https://maxcdn.bootstrapcdn.com/bootstrap/4.4.1/js/bootstrap.min.js">
    </script>
    <style>
        form {
            box-shadow: 0px 0px 0px #00cc99;
            padding: 40px;
            margin: 40px;
        }
    </style>
    <?php include'header.php'; ?>

```

```
</head>

<body>

<?php if(!empty($Msg)){ ?>
    <p class="text-success text-center">
        <?php echo $Msg; ?>
    </p>
<?php } ?>

<form method="post" action=""
      enctype="multipart/form-data"
      class="w-75 mx-auto">
    <h1 class="text-dark text-center">
        Give a feedback
    </h1>

    <h4 class="text-gray text-center">
        Help improve Our products Sending to feedback I.A.Sys.TEAM.
    </h4>

    <div class="form-group">
        <input type="text" name="name"
              class="form-control"
              placeholder="Name" required="">
    </div>

    <div class="form-group">
        <input type="email" name="useremail"
              class="form-control"
              placeholder="Email Address" required="" >
    </div>

    <div class="form-group">
        <input type="text" name="subject"
              class="form-control"
              placeholder="Subject" required="">
    </div>

    <div class="form-group">
        <textarea name="message"
                  class="form-control"
                  placeholder="Write your message here..." required="">
    </div>
```

```

        </textarea>
    </div>

    <div class="form-group">
        <input type="file" name="file">
    </div>

    <div class="submit text-center">
        <input type="submit" name="submit"
               class="btn btn-success "
               value="SUBMIT YOUR FEEDBACK">
    </div>
</body>

</html>

<?php

//logic to senting mail" to conforming mail is received to admin"
$msg = '';

if(isset($_FILES["file"]["name"]) && isset($_POST['message'])) {
    $toemail =$_POST['useremail'];
    $name = $_POST['name'];
    $subject = "Your Valuable feedBack is Recived";
    $message = $_POST['message'];
    $fromemail = "NO-REPLY@IASYSTEM.COM";

    // echo ($email1);

    $msg = " Dear $name <br> feedback massage - $message - ";
    $msg = "<h2 style='color:#0ad476a8;'>Thanks For Giving Valuable Feedback And We Improve Our Facility.</h2>
            <h3 style='color:blue;'> Innovative Attendance System developer team</h3>
            <p><b> Dear:- $name </b></p><br>
            <p><b> This E-mail Registered With Us:- $email1 </b></p><br>
            <p><b>Your Message:- </b> $message </p>
            <p><b>Thank you being part of us</b> </p>
            <p><i>TEAM I.A.SYSTEM </i></p>";
    $s_m = md5(uniqid(time()));


}

```

```

$headers = "From: ".$fromemail;
$mime_boundary = "==Multipart_Boundary_x{$s_m}x";

$headers .= "\nMIME-Version: 1.0\n" .
"Content-Type: multipart/mixed;\n" .
" boundary=\"$mime_boundary\""; 

$msg .= "This is a multi-part message in MIME format.\n\n" .
"--{$mime_boundary}\n" .
"Content-Type:text/html; charset=\"iso-8859-1\"\n" .
"Content-Transfer-Encoding: 7bit\n\n" .
$msg .= "\n\n";

if(mail($toemail, $subject, $msg, $headers)){
    $Msg= $name." your feed-back has been submitted";

    }else{
        $Msg= $name." your feed-back is not submitted";
    }
}

?>

</main>
</body>
</html>

```

*CODE :-Database connection settings *

```

<?php
/* Database connection settings */
$servername = "localhost";
$username = "root";      //put your phpmyadmin username.(default is "root")
$password = "";           //if your phpmyadmin has a password put it here.(default is "root")
$dbname = "ias";

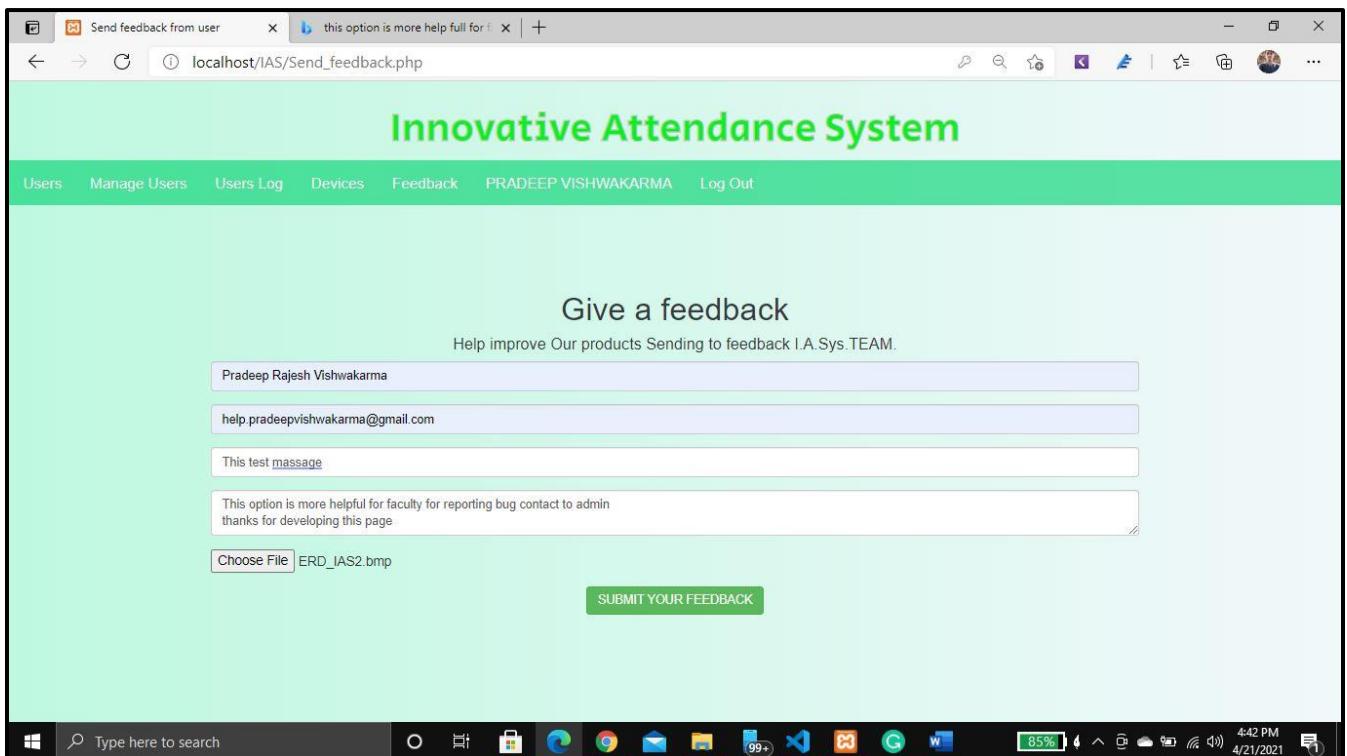
```

```
$conn = mysqli_connect($servername, $username, $password, $dbname);

if ($conn->connect_error) {
    die("Database Connection failed: " . $conn->connect_error);
}

?>
```

Output :- sending test feedback to admin



Massage on screen :- your feed-back has been submitted

Innovative Attendance System

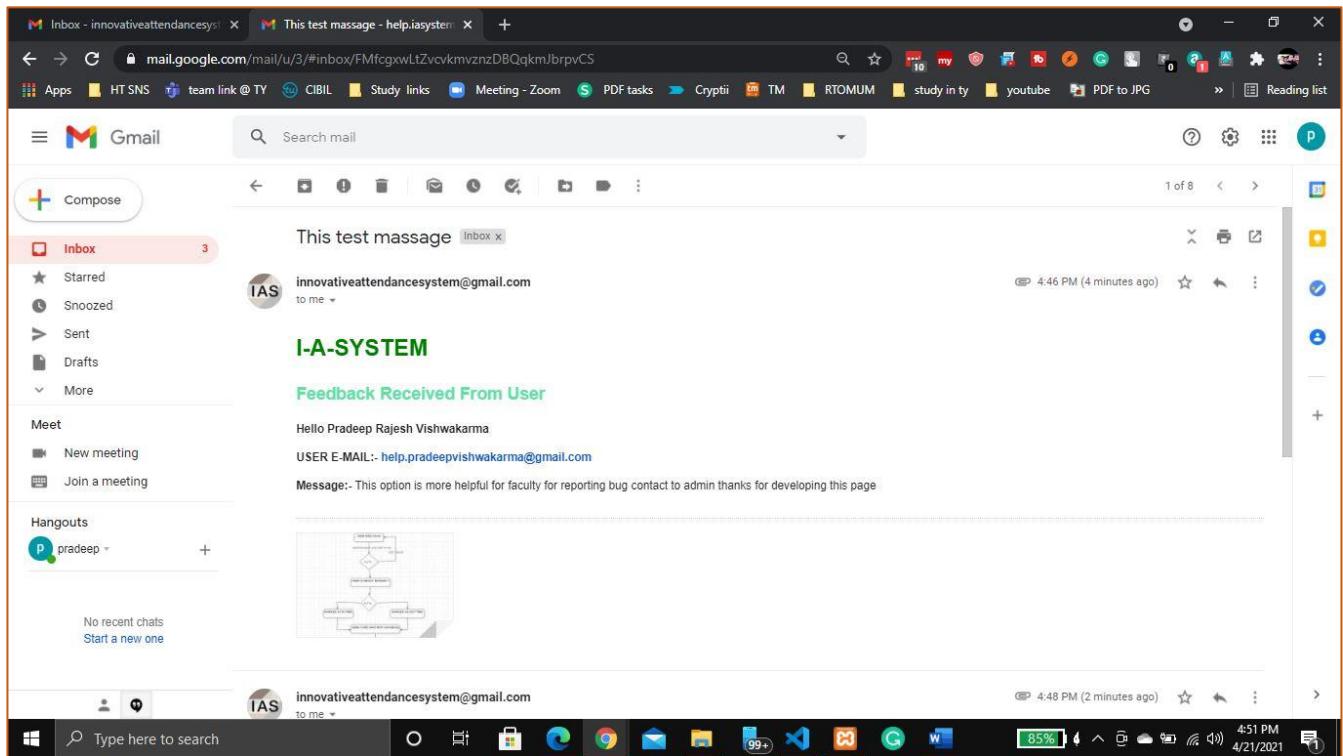
Users Log Devices Feedback PRADEEP VISHWAKARMA Log Out

Pradeep Rajesh Vishwakarma your feed-back has been submitted

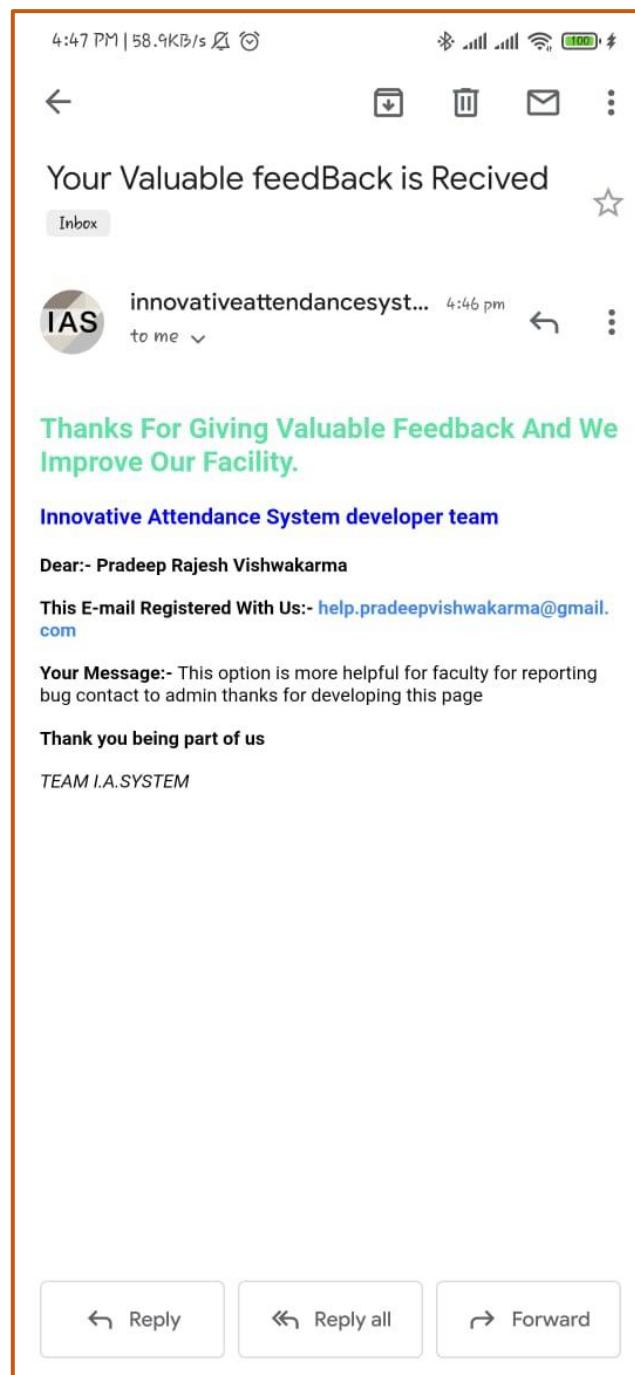
Give a feedback

Help improve Our products Sending to feedback I.A.Sys.TEAM.

Feedback Received From Admin output:-



THANKS MESSAGE TO AUTO SEND USING PHP MAIL FUNCTION TO SENDER



8 .LOGOUT.PHP

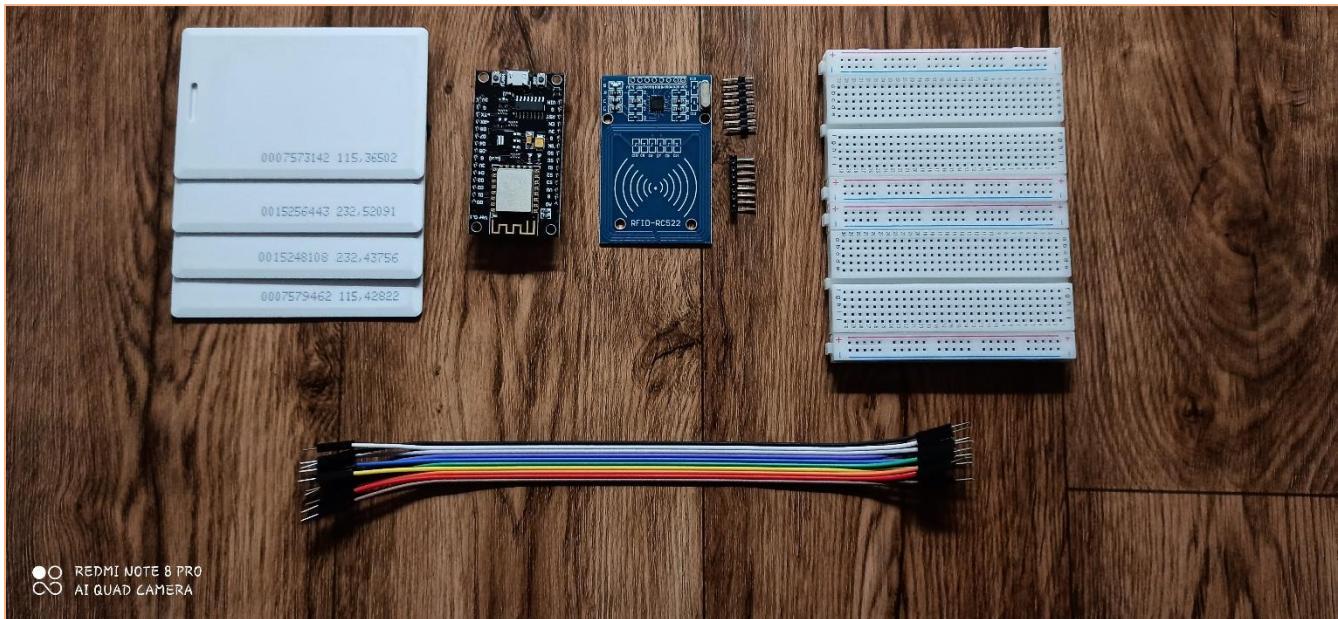
```
<?php  
    session_start();  
    session_unset();  
    session_destroy();  
    header("location: login.php");  
?>
```

OUTPUT:-

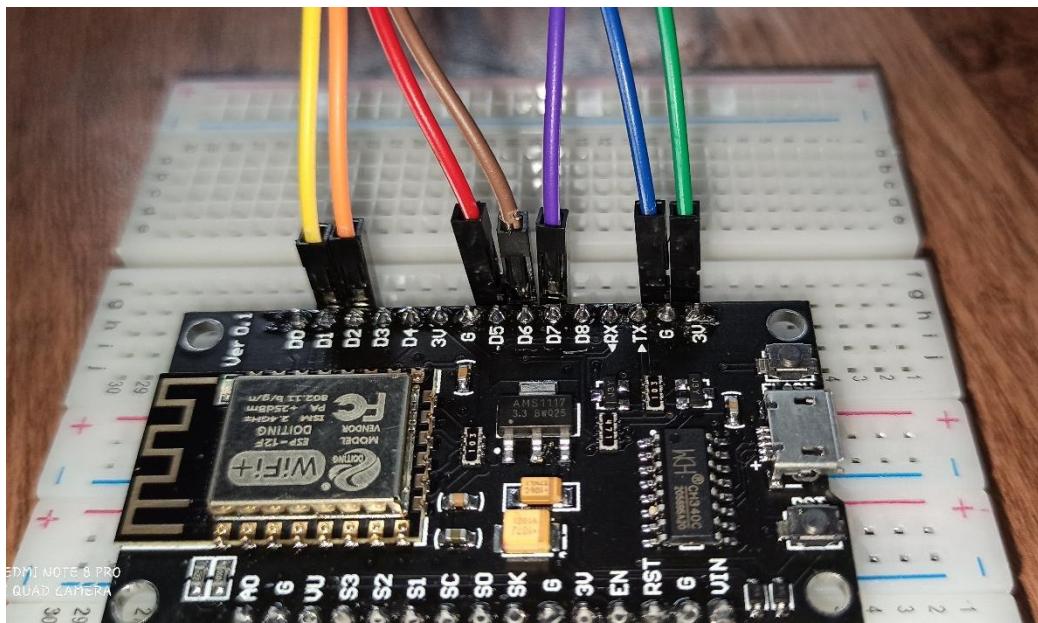
Innovative Attendance System			
Services	Feedback	PRADEEP VISHWAKARMA	Log Out
[REDACTED]			
HERE ARE ALL THE USERS			
SERIAL NUMBER	GENDER	CARD UID	DATE
1	Male	282224949	2021-04-17
2	Male	20224180173	2021-04-17

5.1.2 Hardware implementation

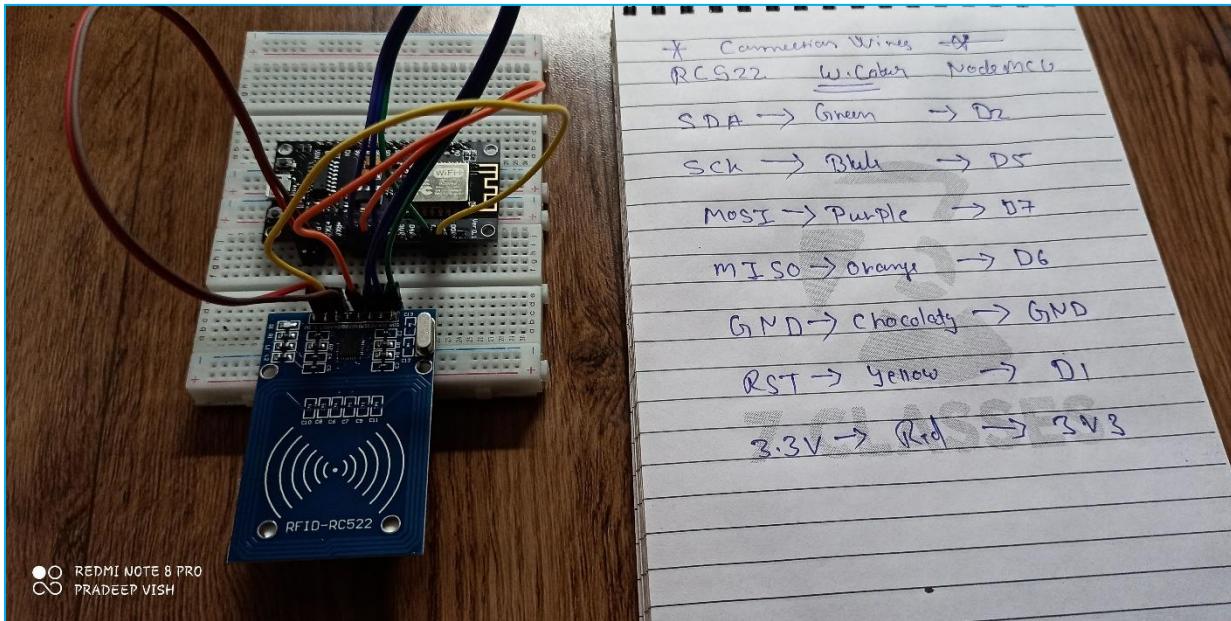
All equipment using on this project :-



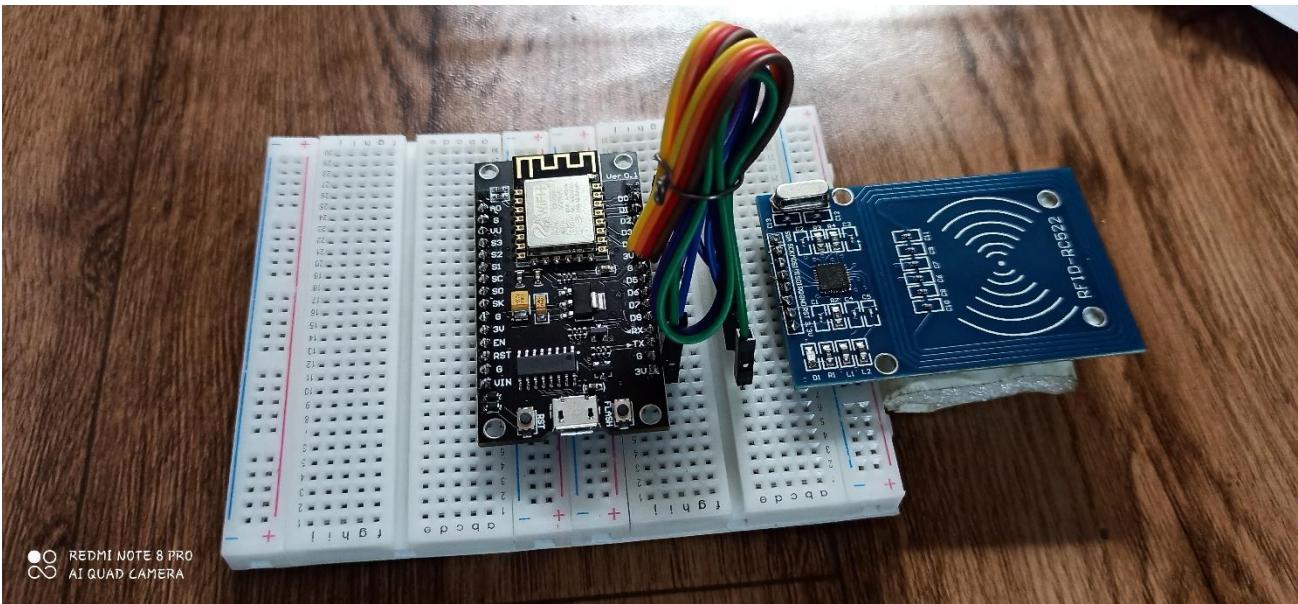
Step 1: Configure **ESP8266 NodeMCU** >> connecting wires



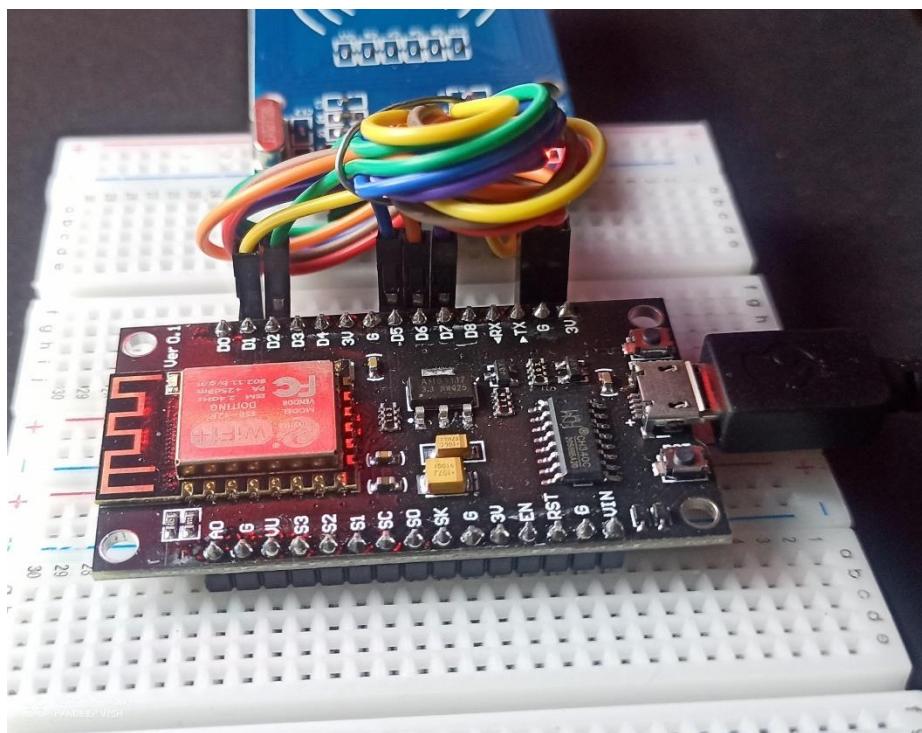
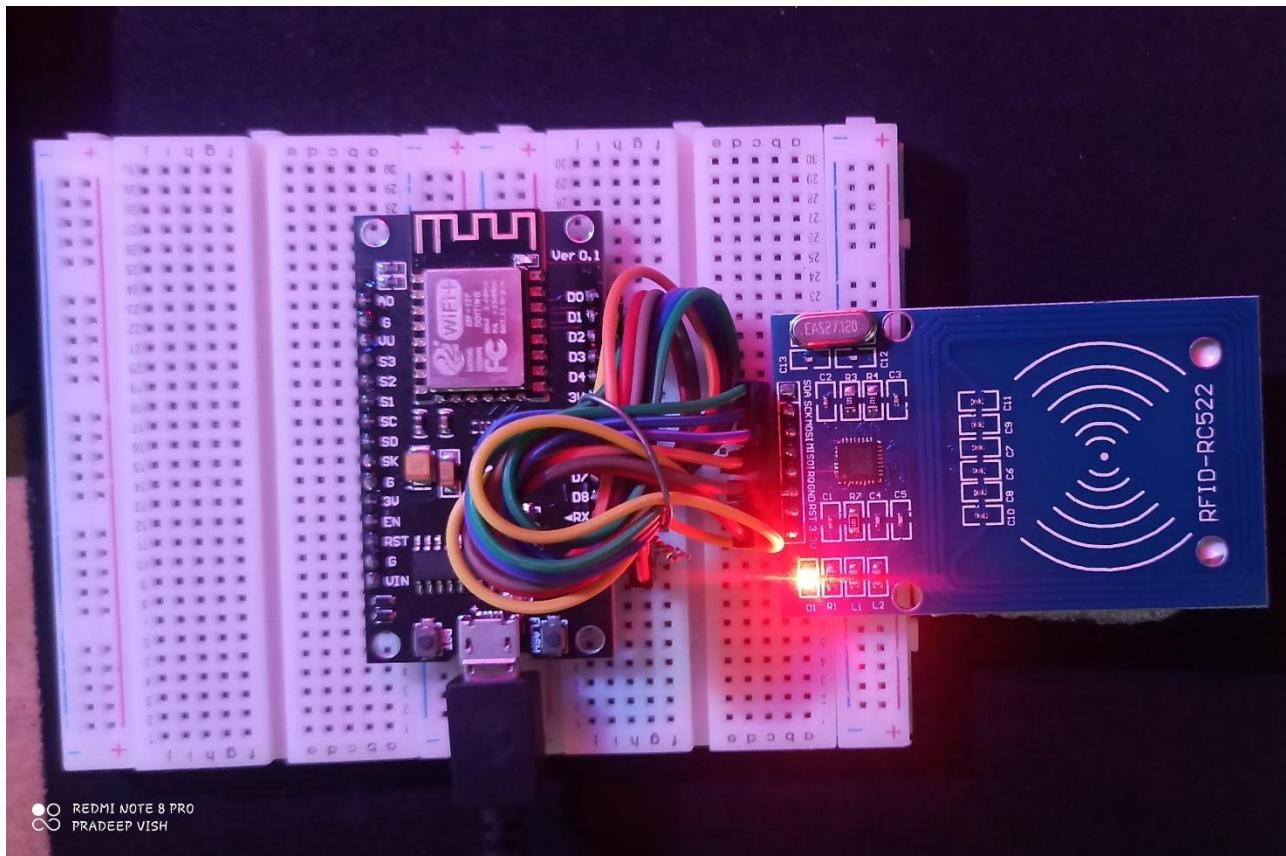
Step 2: Configure RC522 (rfid reader) TO ESP8266 NodeMCU (MICROCONTROLLER)



FINAL PRODUCT :-



Embedded Coding:-



PLUG INTO COMPUTER TO INSTALLING EMBEDDED

Embedded CODE:-

```
////////////////////////////////////////////////////////////////////////libraries*****  
//RFID-----  
  
#include <SPI.h>  
  
#include <MFRC522.h>  
  
//NodeMCU-----  
  
#include <ESP8266WiFi.h>  
  
#include <ESP8266HTTPClient.h>  
  
////////////////////////////////////////////////////////////////////////  
  
#define SS_PIN D2 //D2  
  
#define RST_PIN D1 //D1  
  
////////////////////////////////////////////////////////////////////////  
  
MFRC522 mfrc522(SS_PIN, RST_PIN); // Create MFRC522 instance.  
  
////////////////////////////////////////////////////////////////////////  
  
/* Set these to your desired credentials. */  
  
const char *ssid = "Click Here for Virus_2.4G";  
  
const char *password = "PRADEEP@702195";  
  
const char* device_token = "3278fc8946408070";  
  
////////////////////////////////////////////////////////////////////////  
  
String URL = "http://192.168.0.100/ias/getdata.php"; //computer IP or the server domain  
  
String getData, Link;  
  
String OldCardID = "";  
  
unsigned long previousMillis = 0;  
  
////////////////////////////////////////////////////////////////////////  
  
void setup() {
```

```

delay(1000);

Serial.begin(115200);

SPI.begin(); // Init SPI bus

mfrc522.PCD_Init(); // Init MFRC522 card

//-----
connectToWiFi();

}

//*****
void loop() {

//check if there's a connection to Wi-Fi or not

if (!WiFi.isConnected()) {

connectToWiFi(); //Retry to connect to Wi-Fi

}

//-----

if (millis() - previousMillis >= 15000) {

previousMillis = millis();

OldCardID = "";

}

delay(50);

//-----

//look for new card

if ( ! mfrc522.PICC_IsNewCardPresent() ) {

return;//got to start of loop if there is no card present

}

// Select one of the cards

if ( ! mfrc522.PICC_ReadCardSerial() ) {

return;//if read card serial(0) returns 1, the uid struct contains the ID of the read card.

}

```

```

String CardID = "";
for (byte i = 0; i < mfrc522.uid.size; i++) {
    CardID += mfrc522.uid.uidByte[i];
}
//-----
if ( CardID == OldCardID ) {
    return;
}
else {
    OldCardID = CardID;
}
//-----
// Serial.println(CardID);
SendCardID(CardID);
delay(1000);
}

//*****send the Card UID to the website*****
void SendCardID( String Card_uid ) {
    Serial.println("Sending the Card ID");
    if (WiFi.isConnected()) {
        HttpClient http; //Declare object of class HttpClient
        //GET Data
        getData = "?card_uid=" + String(Card_uid) + "&device_token=" + String(device_token); // Add the Card ID to the GET array
        in order to send it
        //GET methode
        Link = URL + getData;
        http.begin(Link); //initiate HTTP request //Specify content-type header
    }
}

```

```

int httpCode = http.GET(); //Send the request

String payload = http.getString(); //Get the response payload

// Serial.println(Link); //Print HTTP return code

Serial.println(httpCode); //Print HTTP return code

Serial.println(Card_uid); //Print Card ID

Serial.println(payload); //Print request response payload

if (httpCode == 200) {

    if (payload.substring(0, 5) == "login") {

        String user_name = payload.substring(5);

        // Serial.println(user_name);

    }

    else if (payload.substring(0, 6) == "logout") {

        String user_name = payload.substring(6);

        // Serial.println(user_name);

    }

    else if (payload == "succesful") {

    }

    else if (payload == "available") {

    }

    delay(100);

    http.end(); //Close connection
}

```

```
}

}

//*****connect to the WiFi*****
void connectToWiFi() {
    WiFi.mode(WIFI_OFF);      //Prevents reconnection issue (taking too long to connect)
    delay(1000);
    WiFi.mode(WIFI_STA);
    Serial.print("Connecting to ");
    Serial.println(ssid);
    WiFi.begin(ssid, password);

    while (WiFi.status() != WL_CONNECTED) {
        delay(500);
        Serial.print(".");
    }
    Serial.println("");
    Serial.println("Connected");

    Serial.print("IP address: ");
    Serial.println(WiFi.localIP()); //IP address assigned to your ESP

    delay(1000);
}

//=====
```

Showing device output on serial monitor:-

The screenshot shows the Arduino IDE interface. At the top, it says "NodeMCU_RFIDv2.0 | Arduino 1.8.13 (Windows Store 1.8.42.0)" with menu options: File, Edit, Sketch, Tools, Help. Below the menu is a toolbar with icons for upload, refresh, and other functions. The main area has a teal header bar with the sketch name "NodeMCU_RFIDv2.0". The code itself is written in C++ and includes definitions for SS_PIN (D2), RST_PIN (D1), and MFRC522 instance creation. It sets Wi-Fi credentials (ssid: "Click Here for Virus_2.4G", password: "KHUSHI@7021957", device_token: "6966cf0ff0f33bd"), specifies a URL ("http://192.168.0.100/ias/getdata.php"), and initializes SPI and MFRC522. The setup() function handles Wi-Fi connection and card initialization. The loop() function checks for Wi-Fi connection and performs a GET request. A status bar at the bottom says "Compiling sketch...".

```
#define SS_PIN D2 //D2
#define RST_PIN D1 //D1
//*****
MFRC522 mfrc522(SS_PIN, RST_PIN); // Create MFRC522 instance.
//*****
/* Set these to your desired credentials. */
const char *ssid = "Click Here for Virus_2.4G";
const char *password = "KHUSHI@7021957";
const char* device_token = "6966cf0ff0f33bd";
//*****
String URL = "http://192.168.0.100/ias/getdata.php"; //computer IP or the server domain
String getData, Link;
String OldCardID = "";
unsigned long previousMillis = 0;
//*****
void setup() {
  delay(1000);
  Serial.begin(115200);
  SPI.begin(); // Init SPI bus
  mfrc522.PCD_Init(); // Init MFRC522 card
  //-----
  connectToWiFi();
}
//*****
void loop() {
  //check if there's a connection to Wi-Fi or not
  if (!WiFi.isConnected()) {
    connectToWiFi(); //Retry to connect to Wi-Fi
  }
}
//*****
```

Compiling sketch...

COM3

```
|
```

18:08:03.612 ->
18:08:03.612 -> SDK:2.2.2-dev(38a443e)/Core:2.7.3-3-g2843a5ac=20703003/lwIP:STABLE-2_1_2_RELEASE/glue:1.2-30-
18:08:03.660 -> scandone
18:08:03.660 -> del if0
18:08:03.660 -> usl
18:08:03.660 -> mode : null
18:08:04.740 -> mode : sta(48:3f:da:9d:14:c2)
18:08:04.740 -> add if0
18:08:04.786 -> Connecting to Click Here for Virus_2.4G
18:08:05.345 ->scandone
18:08:08.686 -> state: 0 -> 2 (b0)
18:08:08.686 -> .state: 2 -> 3 (0)
18:08:08.686 -> state: 3 -> 5 (10)
18:08:08.686 -> add 0
18:08:08.686 -> aid 3
18:08:08.686 -> cnt
18:08:08.876 ->
18:08:08.876 -> connected with Click Here for Virus_2.4G, channel 9
18:08:08.876 -> dhcp client start...
18:08:09.162 -> .ip:192.168.0.107,mask:255.255.255.0,gw:192.168.0.1
18:08:09.678 -> .
18:08:09.678 -> Connected
18:08:09.678 -> IP address: 192.168.0.107

NodeMCU_RFIDv2.0 | Arduino 1.8.13 (Windows Store 1.8.42.0)

File Edit Sketch Tools Help

```

NodeMCU_RFIDv2.0
//look for new card
if ( ! mfrc522.PICC_IsNewCardPresent() ) {
    return;//got to start of loop if there is no card present
}
// Select one of the cards
if ( ! mfrc522.PICC_ReadCardSerial() ) {
    return;//if read card serial(0) returns 1, the uid struct contians the ID of the read card.
}
String CardID = "";
for (byte i = 0; i < mfrc522.uid.size; i++) {
    CardID += mfrc522.uid.uidByte[i];
}
//-----
if ( CardID == OldCardID ) {
    return;
}
else {
    OldCardID = CardID;
}
//----- 
// Serial.println(CardID);
SendCardID(CardID);
delay(1000);
}
*****send the Card UID to the website*****
void SendCardID( String Card_uid ) {
    Serial.println("Sending the Card ID");
    if ( WiFi.isConnected() ) {
        HTTPClient http; //Declare object of class HTTPClient
}

```

Done uploading.

Leaving...
Hard resetting via RTS pin...

18 NodeMCU 1.0 (ESP-12E Module) on COM5

<<<< Successfully Caching Card Data Setting Database >>>>

5.2 TESTING APPROACH

5.2.1 PURPOSE OF TESTING

Testing is the process of running a system with the intention of finding errors. Testing enhances the integrity of a system by detecting deviations in design and errors in the system. Testing aims at detecting error-prone areas. This helps in the prevention of errors in a system. Testing also adds value to the product by conforming to the user requirements. The main purpose of testing is to detect errors and error-prone areas in a system. Testing must be thorough and well-planned. A partially tested system is as bad as an untested system. And the price of an untested and under-tested system is high. Software Testing is a process of executing the program with objective finding an error. Software testing is successful only if all error from software are removed. Good testing techniques are available which find maximum uncovered error but no techniques is available which will find all error so we have to used set of setting technique to find errors.

5.2.2 TYPE OF TESTING

1) White Box Testing (WBT) :-

White Box Testing is related with a structure or internal logic. Various test cases designed which takes care of the following:

- i) Every statement in a program must be executed at least once.
- ii) Every path in program must be executed at least once which is called as path analysis.
- iii) Every logical decision must be executed on their true or false sides.
- iv) Executed all loops their boundaries and within operational boundaries Static analysers is one of the tool used for WBT which is used to check function calls, and initialized variables, variables defines but not used etc.

Black Box Testing (BBT) :- Black Box Testing is related with input and output only and not related with internal structure of the program. In BBT it is checked some input is produce by the program or not various set of input test cases are prepared and applied on the program and corresponding output is verified. BBT is used to find the error in data structure, performances errors etc.

3) α-β Testing :- After App development is completed during implementing of the system a proper training is given to the users get early training before implementing at the developer side. Though proper training is given to the customer there is no guarantee that they will handle the system properly. Due to implementing also there are no chances of the errors in handling the systems. So the methods of α-β testing is applied.

α Testing

A customer conducts this test at the developer side. α test are conducted in a controlled environment. Customer operates the software and developer watches and solves problems.

β testing

This test is conducted at one or more customer's sides by the end user of the software.

During this, developer is not present so user fields free in handling the system and records all the systems these problems are then reported to the developer. Developers solve the problems and make necessary changes in software and then modified software is given to all customers.

4) UNIT TEST

Unit Testing is a level of software testing where individual units/ components of a software are tested. The purpose is to validate that each unit of the software performs as designed. A unit is the smallest testable part of any software. It usually has one or a few inputs and usually a single output. In procedural programming, a unit may be an individual program, function, procedure, etc. In object-oriented programming, the smallest unit is a method, which may belong to a base/ super class, abstract class or derived/ child class. (Some treat a module of an application as a unit. This is to be discouraged as there will probably be many individual units within that module.) Unit testing frameworks, drivers, stubs, and mock/ fake objects are used to assist in unit testing

5.3 Test Cases

SR.No	Test case	Input	Accepted result	Actual output	Tested browser	Tested result
1	email check	AdminIAS.com	enter correct Email	enter correct Email	M.S.EDGE	pass
2	email check	Admin@IAS.com	success	success	M.S.EDGE	pass
3	First name	"{}{}];'	Enter correct name	Enter correct name	M.S.EDGE	pass
4	First name	pradeep	success	success	M.S.EDGE	pass
5	Last name	"";[]]''/	Enter correct last n.	Enter correct last n.	M.S.EDGE	pass
6	Last name	vishwakarma	success	success	M.S.EDGE	pass
7	Mobile no.	Hhdgbh5522	Enter correct mob.n	Enter correct mob.n	M.S.EDGE	pass
8	Mobile no.	1234567890	success	success	M.S.EDGE	pass
9	files	.exe	Upplode correct file	Upplode correct file	M.S.EDGE	pass
10	Files	Img.pdf.png	success	success	M.S.EDGE	pass

Conclusion

This paper presented a fully scalable, automated, and reusable RFID system called IAS. The work investigated existing RFID-based attendance systems, in which the investigations involved evaluating the performance of these systems in terms of elected characteristics. Fix and build from earlier works, Passport's auto load balancing feature integrated with auto scheduling technique. In doing so, there is no need for daily human interaction. Saving efforts, time, and costs needed in the daily initialization and termination of the system is achieved by using schedules that are automatically generated by the system.

It is using to not consume the time

- With the help of this web pages you can access basic
- Easy to access attendance report.
- And sending feedback to admin and get help.

Future Scope of the Project

This project is successfully implemented with all the features mentioned in system requirements specification.

The I.AS. provides appropriate information to users to web inter-face according to the chosen service.

If the user can any query from the system they can directly communicate with the admin's.

Using feedback option For better

I will implement more in this project:-

Future Development:-

- 1) We can voice announcement system to this project. So whenever user logs in, we can announce message like, "Your attendance has been logged in" or "Your card is invalid".
- 2) We can send this data through internet to the user. So that user can access it remotely via internet.
- 3) We can implement GSM technology. So this project will be advanced to RFID Attendance System With SMS Notification.

References

1. https://www.youtube.com/playlist?list=PL0b6OzIxLPbyrzCMJOFzLnf - 5E_dkzs
2. <https://github.com/miguelbalboa/rfid>
3. https://en.wikipedia.org/wiki/Radio-frequency_identification
4. <https://en.wikipedia.org/wiki/NodeMCU>