Arduino Student Attendance Tracker

(RFID)

A PROJECT REPORT SUBMITTED TO GOA UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENT

FOR THE DEGREE OF BCA

BY

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(Internal Guide)	**(Project Coordinator)**	**(Principal)**

2023-2024

DECLARATION OF CANDIDATES

We declare that this project titled "**Arduino Student Attendance Tracker**" have been prepared by us and has not been formed for any rewards, diploma or any other degree in Goa University or elsewhere.

SEAT NO.	NAME	SIGNATURE
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CERTIFICATE

This is to certify that project on

"**Arduino Student Attendance Tracker"**

has been successfully completed by

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Studying in T.Y.B.C.A during the academic year 2023-2024,

The project has been carried out under the supervision of the Internal Guide.

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External Examiner

Place: Panaji, Goa

Date:

TABLE OF CONTENT

INTRODUCTION

In today's fast-paced educational world, keeping track of student attendance is crucial for school operations. But the traditional methods, like paper-based lists, often lead to mistakes and extra work for teachers. That's why we're excited to introduce the " SmartTrack ". Our main goal is to create a smart system that uses special cards (like ID cards) and modern web technology to make attendance-taking easy, accurate, and hassle-free. Imagine a school where teachers don't have to waste time calling out names and marking attendance on paper. Instead, students just enter their classrooms, tap their id card, and their attendance is automatically recorded. This means fewer mistakes, less paperwork, and more time for teaching and learning. By using technology to solve this everyday problem, we aim to make school life better for everyone involved.

OBJECTIVE

It provides Automated tracking that is when students come to school and use their special cards, their attendance will be instantly recorded. A simple website that teachers, students, and parents can use to check attendance records and get important information easily.

By this new system, we aim to reduce errors and make sure attendance records are always accurate and with this system, teachers won't have to spend as much time on attendance, so they can focus on teaching and helping students. It will provide useful reports and graphs that show attendance patterns, helping schools make better decisions. This system will allow teachers, students and parents to work together and stay informed about attendance easily and other school related stuff.

As for the conclusion, the "SmartTrack" project aims to make attendance management a breeze by using technology that's user-friendly and efficient. Our goal is to help schools run smoothly, reduce stress for teachers, and create a more connected school community.

EXISTING SYSTEM

&

LIMITATIONS

In some advanced educational institutions, RFID technology is already being utilized for certain purposes, such as access control to restricted areas or library book tracking. However, the full potential of RFID technology is not often harnessed for comprehensive attendance tracking.

LIMITATIONS

Limited Read Range: Many existing RFID systems suffer from a limited read range, requiring students to be in close proximity to the reader for accurate tracking. This can result in missed scans and incomplete attendance records.

Interference Sensitivity: Traditional RFID systems are susceptible to interference from other electronic devices or materials, leading to unreliable readings and potential data inaccuracies.

Costly Infrastructure: Implementing and maintaining RFID systems can be expensive, particularly when deploying multiple readers and tags across large campuses. This cost may not be feasible for institutions with limited budgets.

Privacy Concerns: Concerns about privacy and data security are prevalent with traditional RFID technology, as it allows for the constant monitoring of students' movements. This can lead to resistance or opposition from students and faculty.

Maintenance Requirements: Traditional RFID systems require regular maintenance to ensure proper functioning, including software updates, tag replacements, and troubleshooting technical issues.

PROPOSED SYSTEM

In our proposed system, we are aiming to expand the use of RFID (Radio Frequency Identification) technology specifically for attendance tracking, creating a dedicated " SmartTrack" attendance tracker. This system aims to revolutionize how attendance is recorded, managed, and analysed, providing numerous benefits over the existing RFID technology.

RFID Reader Integration: Our system utilizes RFID reader modules to efficiently scan RFID cards or tags carried by individuals, ensuring quick and accurate attendance tracking.

User Authentication: We implement a robust user authentication system, allowing students, faculty, and staff to authenticate themselves using their RFID tags or cards. This ensures secure and reliable identification of individuals within the system.

Real-time Monitoring: Our system provides real-time monitoring of attendance data, enabling administrators to access up-to-date information on attendance status and trends. This real-time visibility enhances accountability and enables proactive intervention when necessary

Attendance Reports: We offer comprehensive attendance reporting capabilities, allowing administrators to generate detailed reports on attendance records. These reports can be customized to provide daily, weekly, or monthly summaries, offering valuable insights into attendance patterns and trends over time.

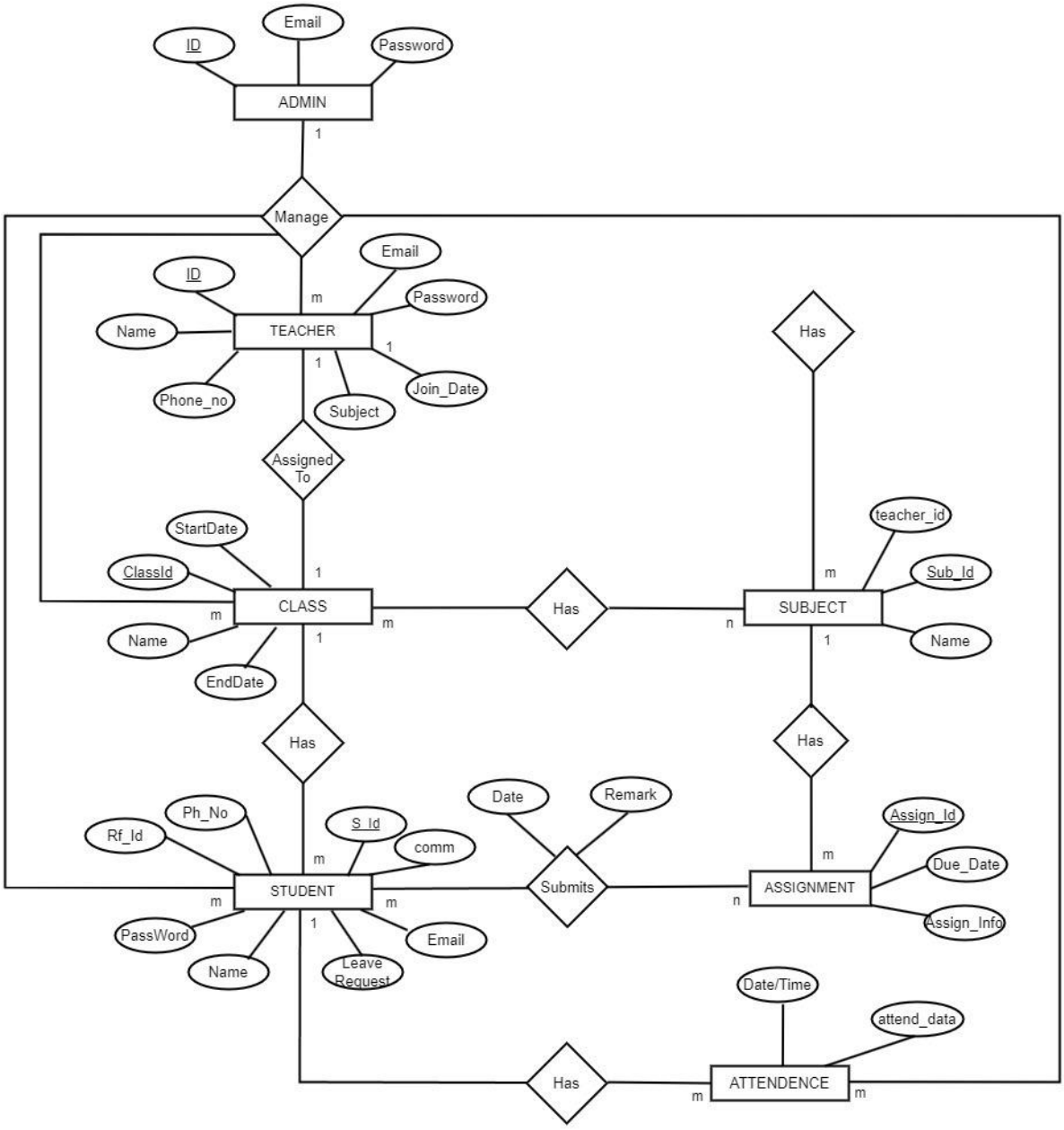
Assignment Management: Teachers can assign assignments to students through the system's website, streamlining the assignment distribution process and promoting academic engagement.

Leave Request System: Students have the ability to request leave directly to teachers through the website, simplifying the leave management process and ensuring efficient communication between students and faculty.

KEY FEATURES

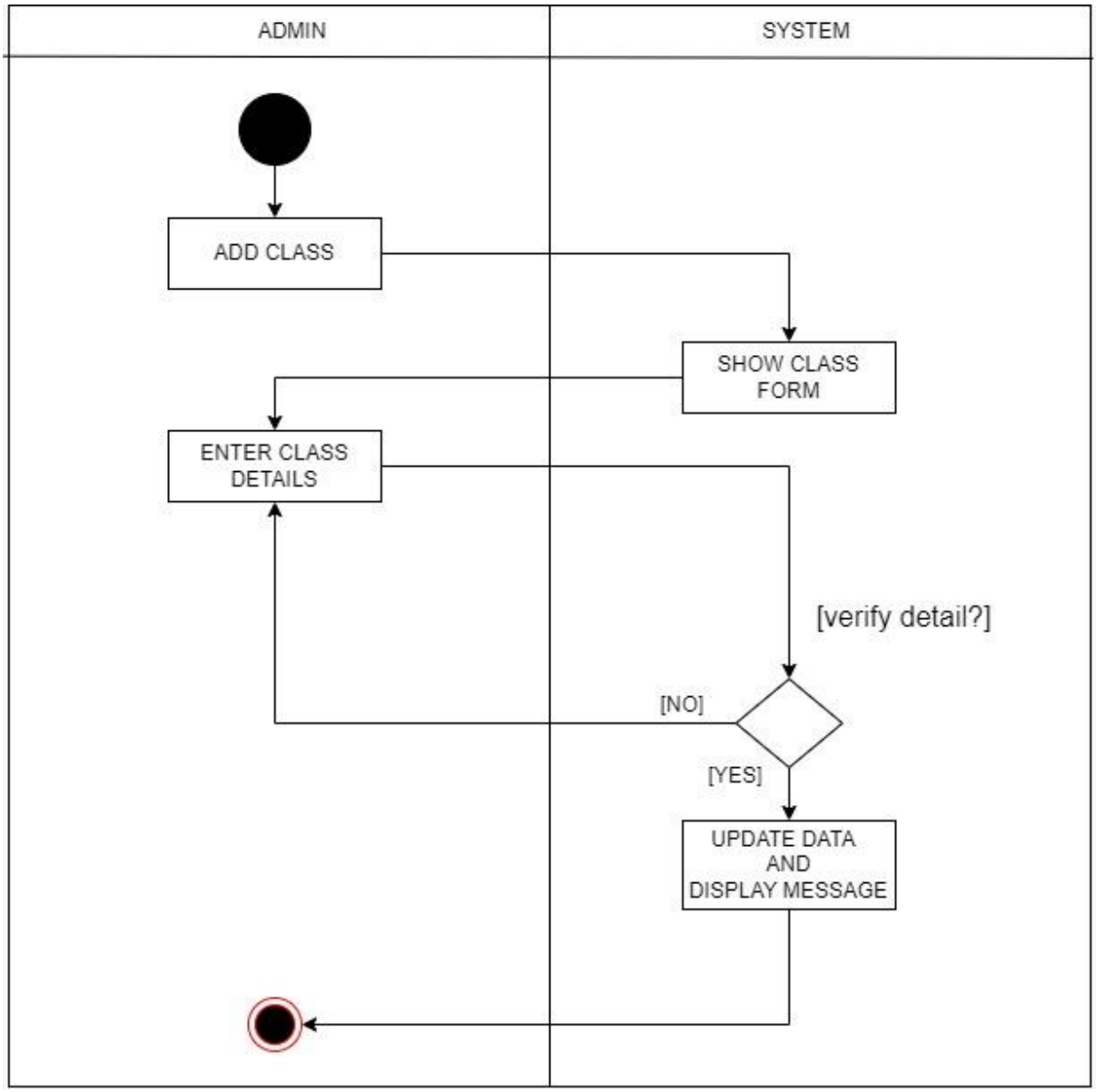
- RFID Reader: Utilize an RFID reader module to scan RFID cards or tags carried by individuals.
    - User Authentication: Implement a system to authenticate users (e.g., students, employees) using their RFID tags/cards.
- Real-time Monitoring: Provide real-time monitoring of attendance data to
- Attendance Reports: Generate detailed attendance reports, including daily, weekly, or monthly summaries**.**

ENTITY RELATIONSHIP DIAGRAM

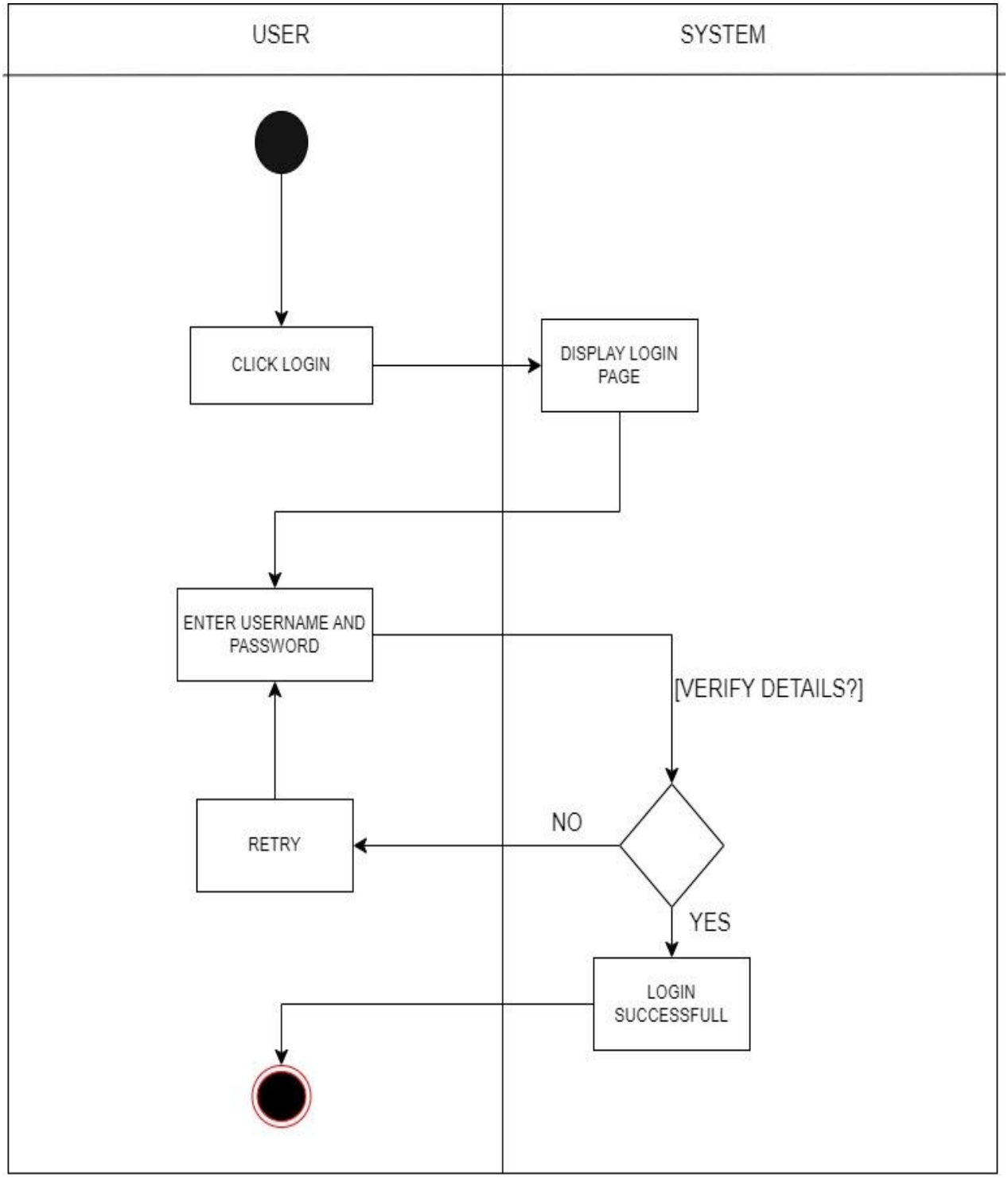

ADMIN
ID
Email
Password
1
Manage
TEACHER
ID
Email
Password
Name
Phone_no
Subject
Join_Date
m
1
1
1
Assigned To
CLASS
StartDate
ClassId
Name
EndDate
m
1
m
Has
SUBJECT
teacher_id
Sub_Id
Name
Has
m
n
1
Has
Has
STUDENT
Ph_No
Rf_Id
S_Id
comm
PassWord
Name
Email
Leave Request
m
m
m
1
Submits
Date
Remark
ASSIGNMENT
Assign_Id
Due_Date
Assign_Info
m
n
Has
ATTENDENCE
Date/Time
attend_data
m
m

ACTIVITY DIAGRAMS

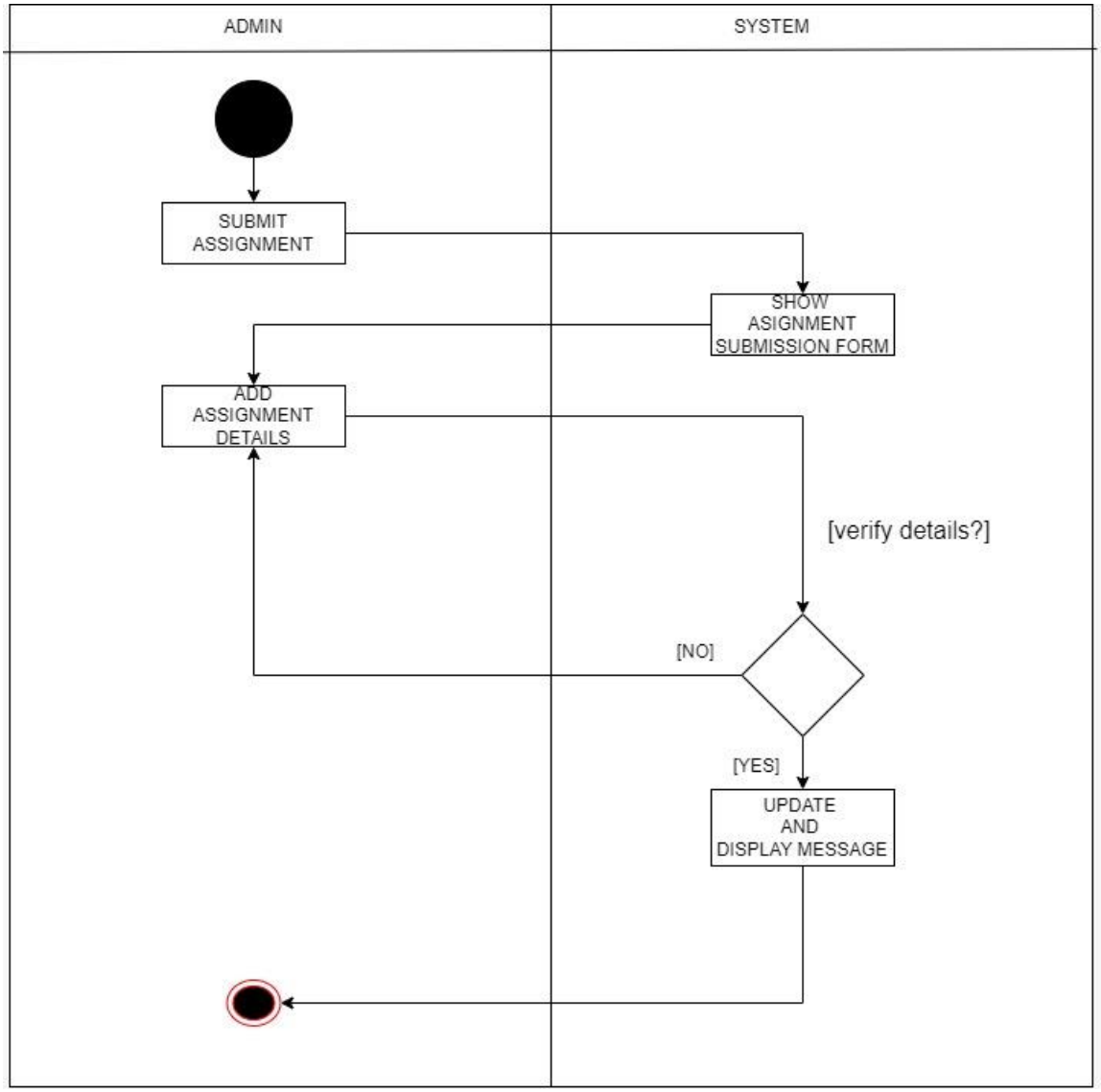
Class Activity



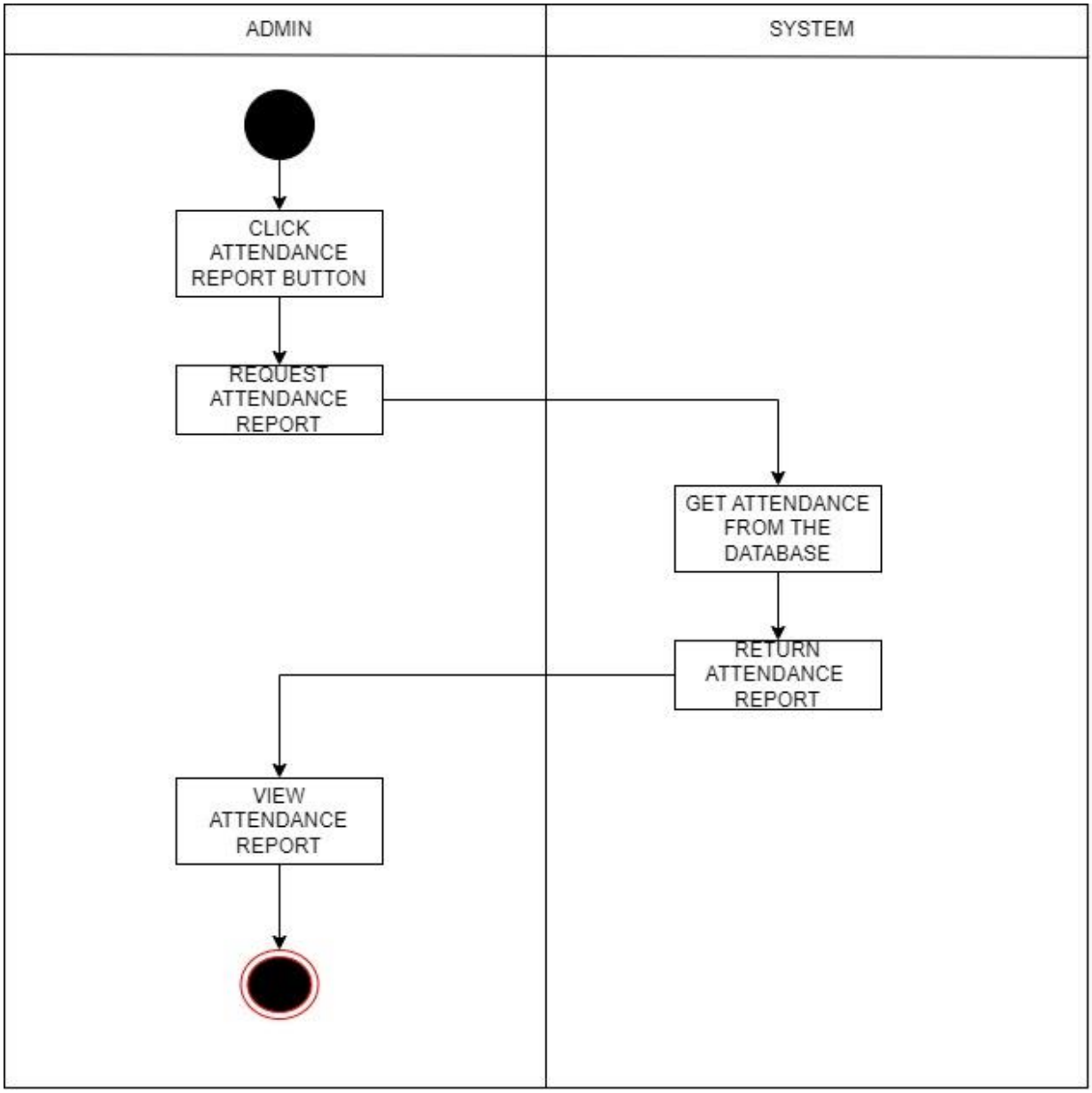
Login Form


USER
SYSTEM
CLICK LOGIN
DISPLAY LOGIN PAGE
ENTER USERNAME AND PASSWORD
[VERIFY DETAILS?]
NO
RETRY
YES
LOGIN SUCCESSFULL

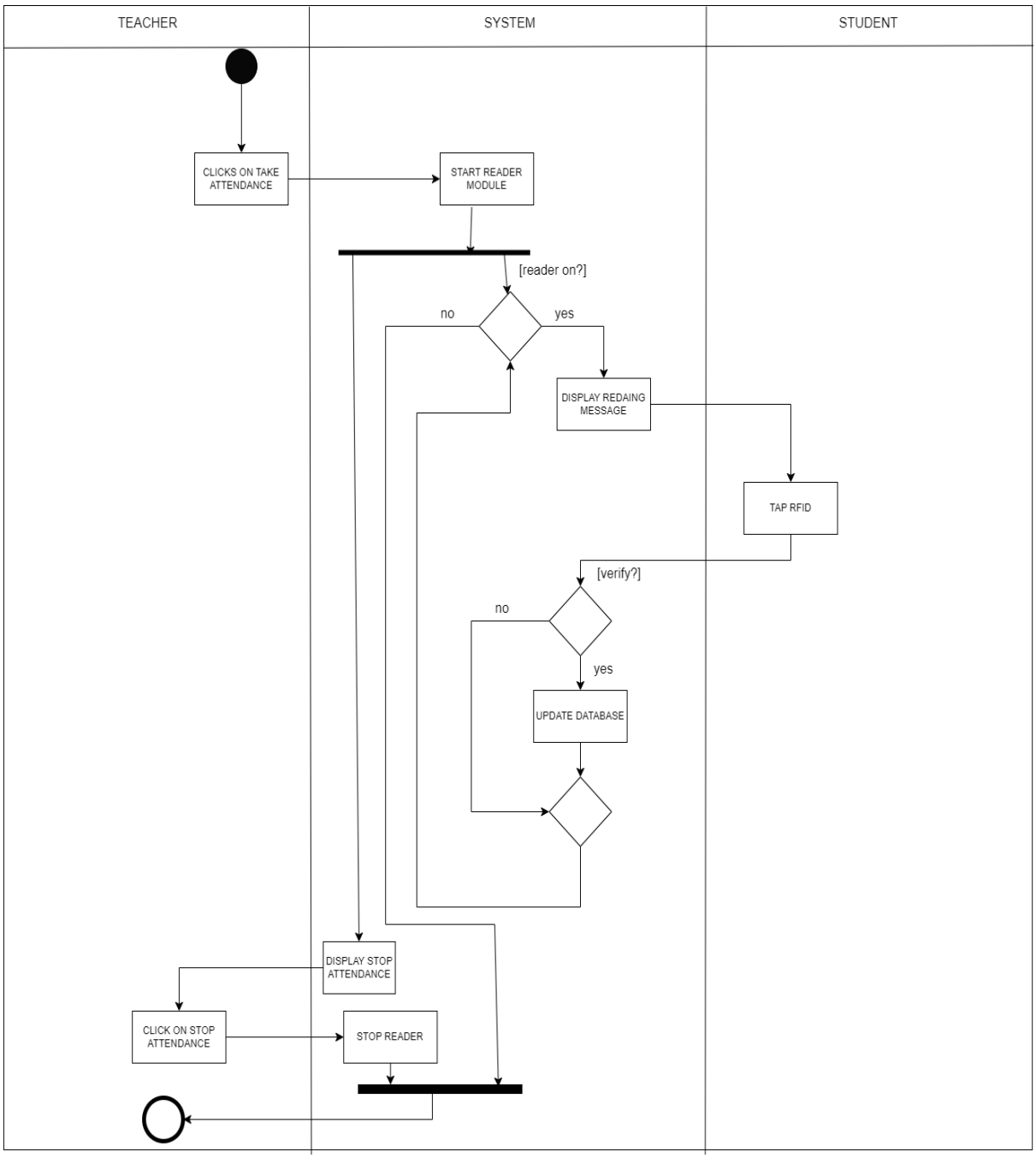
Assignment Form



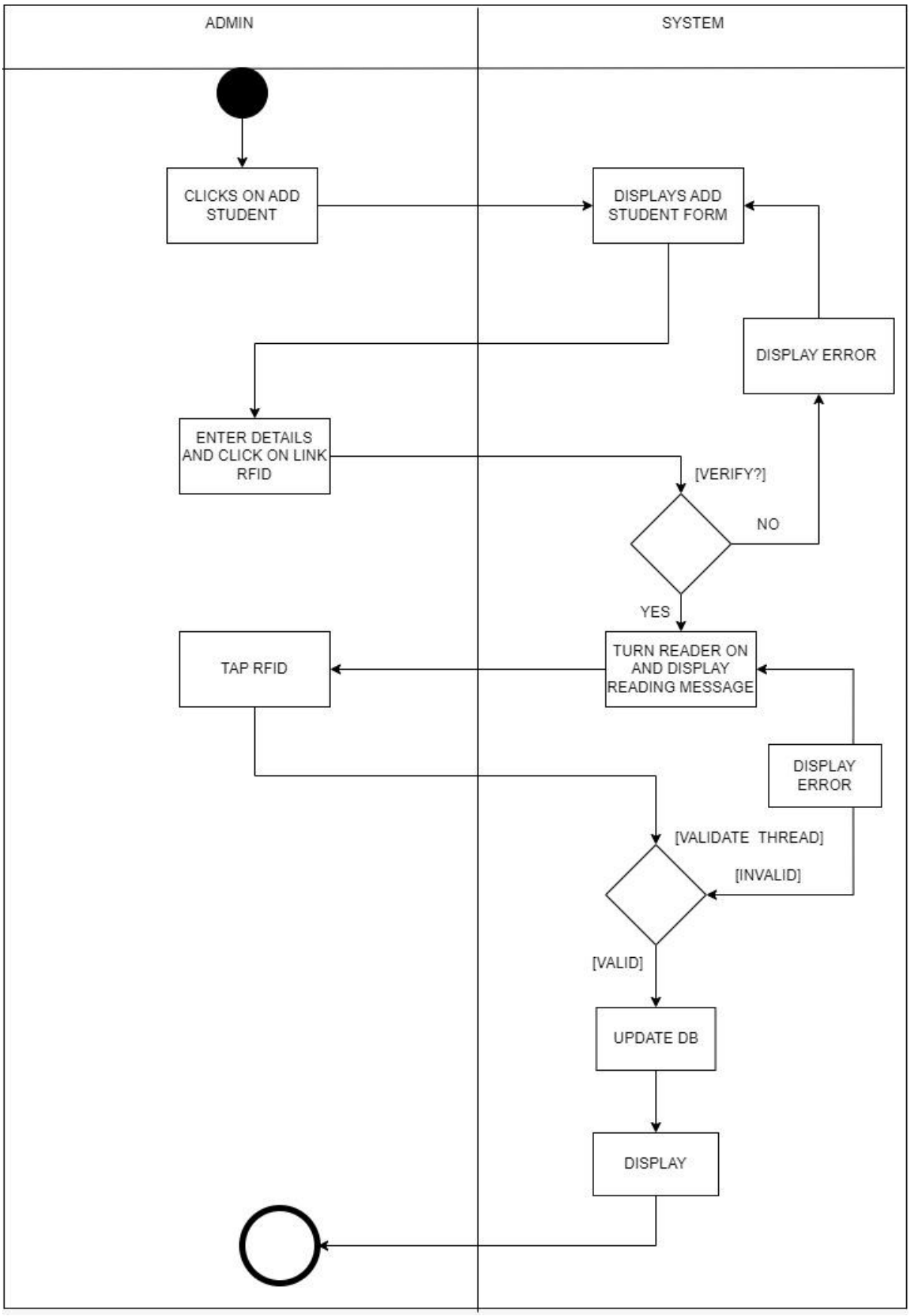
Attendance Report Form



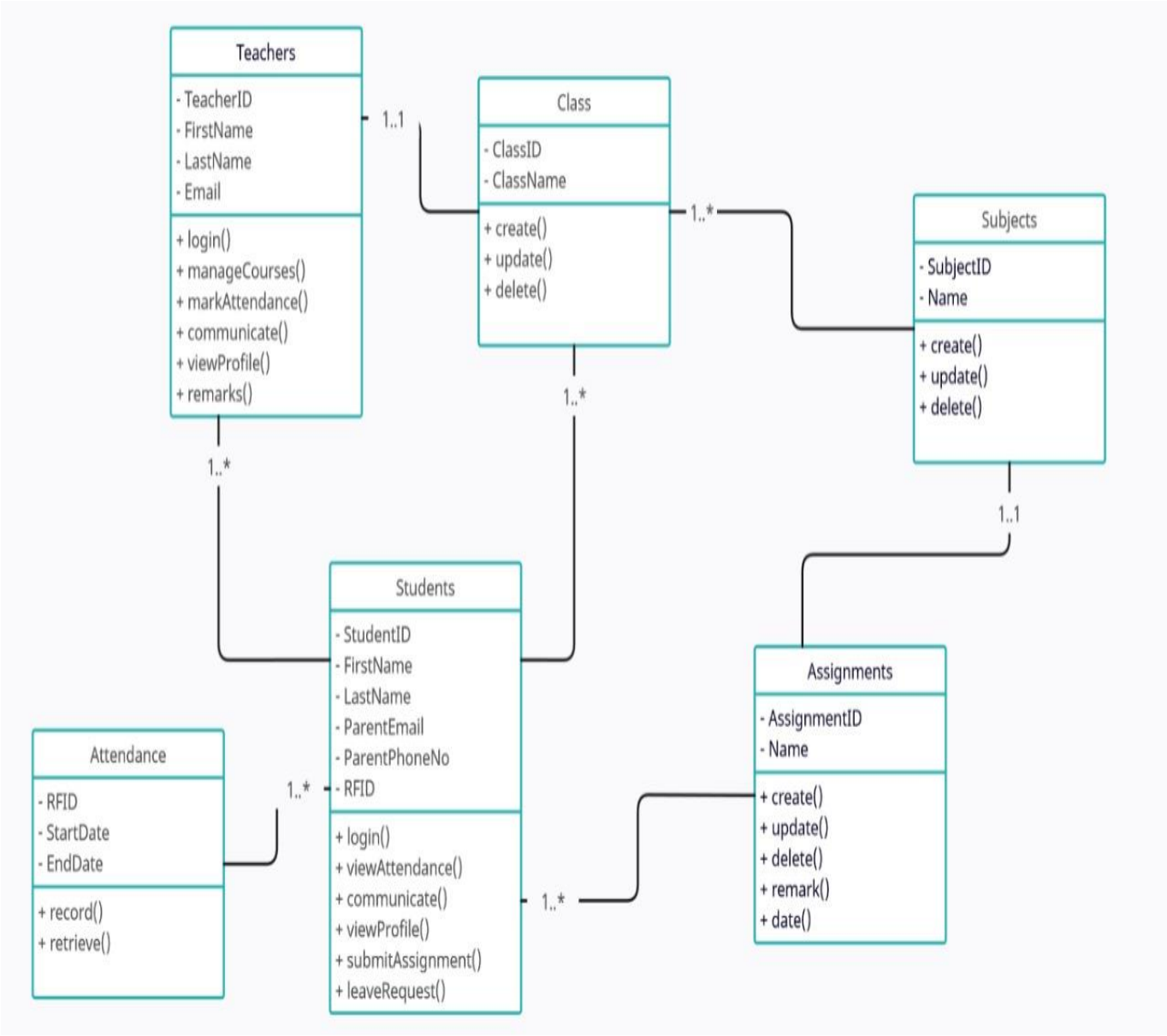
Attendance Login Form



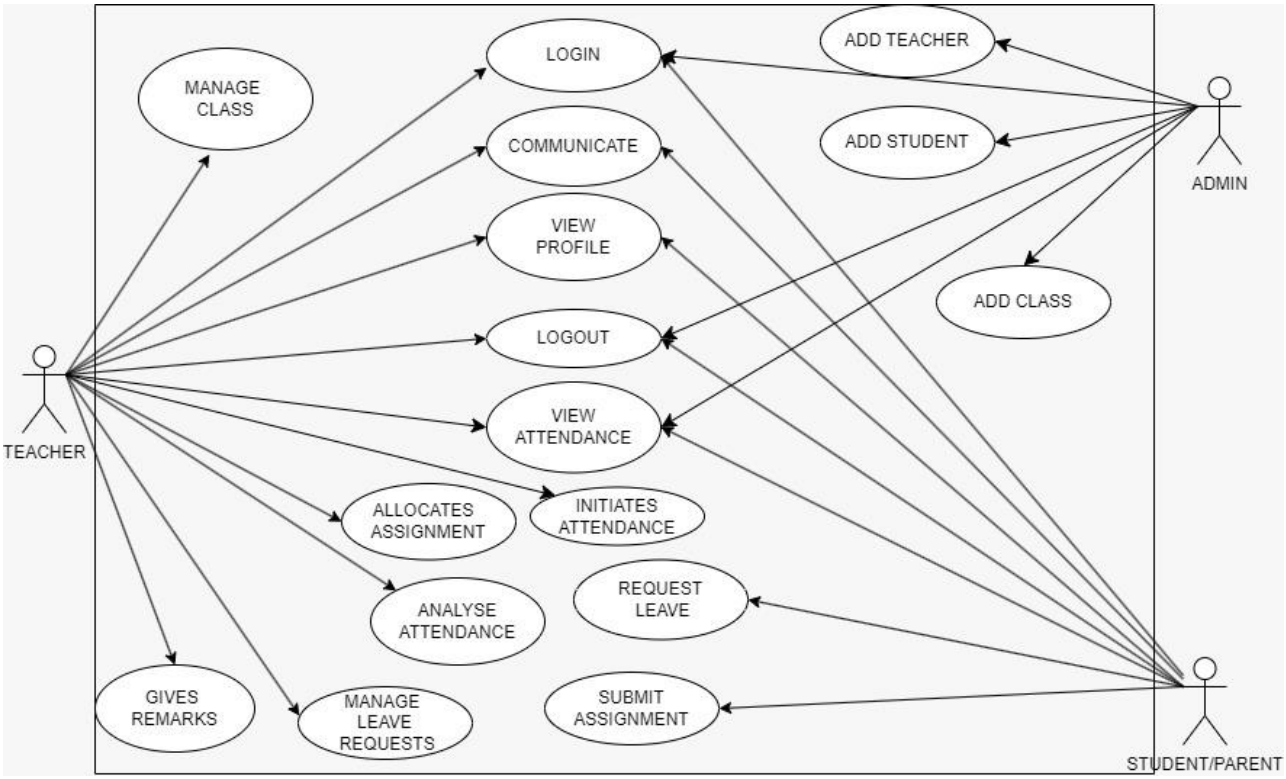
Student Adding Form



CLASS DIAGRAM

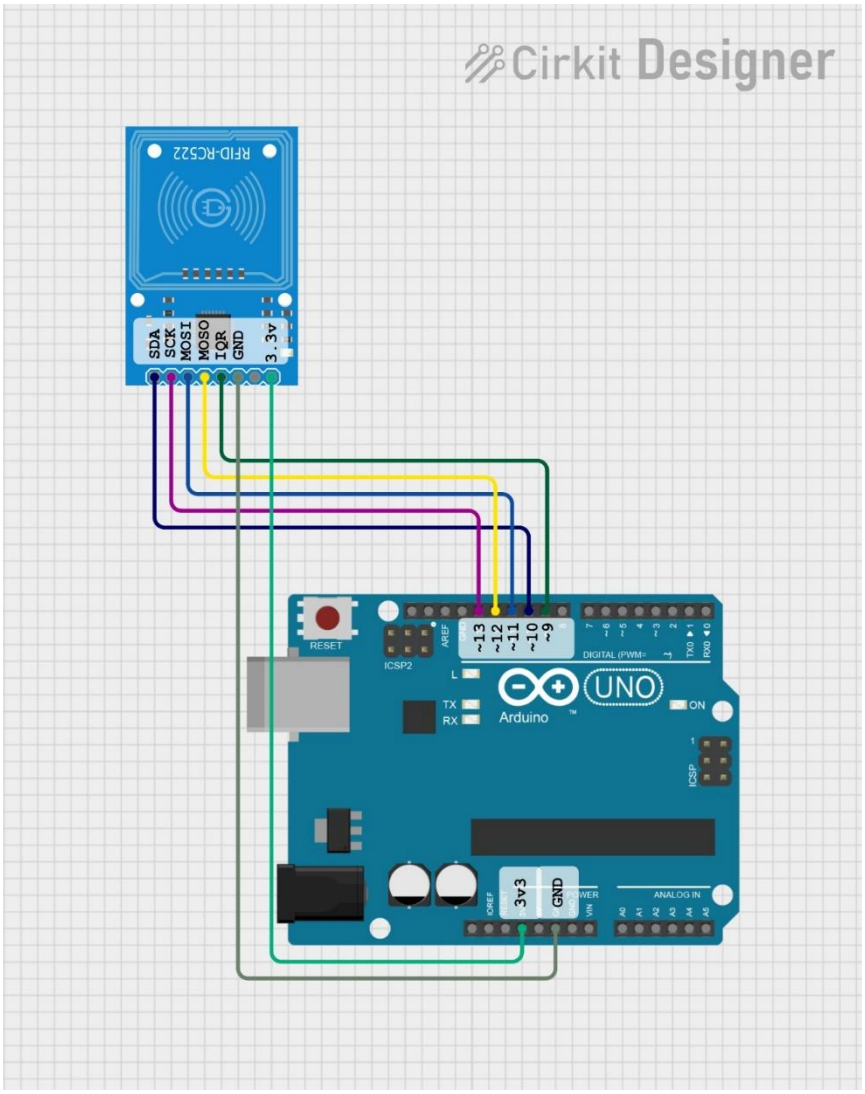

Teachers
- TeacherID
- FirstName
- LastName
- Email
+ login()
+ manageCourses()
+ markAttendance()
+ communicate()
+ viewProfile()
+ remarks()
1..1
Class
- ClassID
- ClassName
+ create()
+ update()
+ delete()
1..*
Subjects
- SubjectID
- Name
+ create()
+ update()
+ delete()
1..*
1..*
1..1
Students
- StudentID
- FirstName
- LastName
- ParentEmail
- ParentPhoneNo
- RFID
+ login()
+ viewAttendance()
+ communicate()
+ viewProfile()
+ submitAssignment()
+ leaveRequest()
Assignments
- AssignmentID
- Name
+ create()
+ update()
+ delete()
+ remark()
+ date()
Attendance
- RFID
- StartDate
- EndDate
+ record()
+ retrieve()
1..*
1..*

USE CASE DIAGRAM

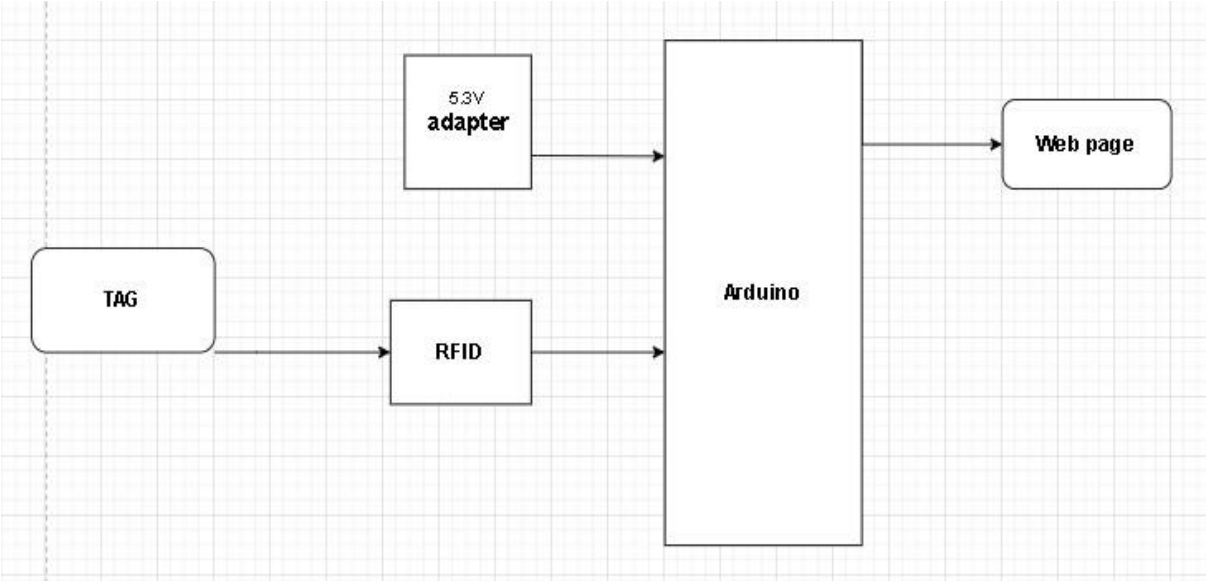

LOGIN
ADD TEACHER
MANAGE CLASS
COMMUNICATE
ADD STUDENT
ADMIN
VIEW PROFILE
ADD CLASS
LOGOUT
VIEW ATTENDANCE
TEACHER
ALLOCATES ASSIGNMENT
INITIATES ATTENDANCE
REQUEST LEAVE
ANALYSE ATTENDANCE
GIVES REMARKS
MANAGE LEAVE REQUESTS
SUBMIT ASSIGNMENT
STUDENT/PARENT

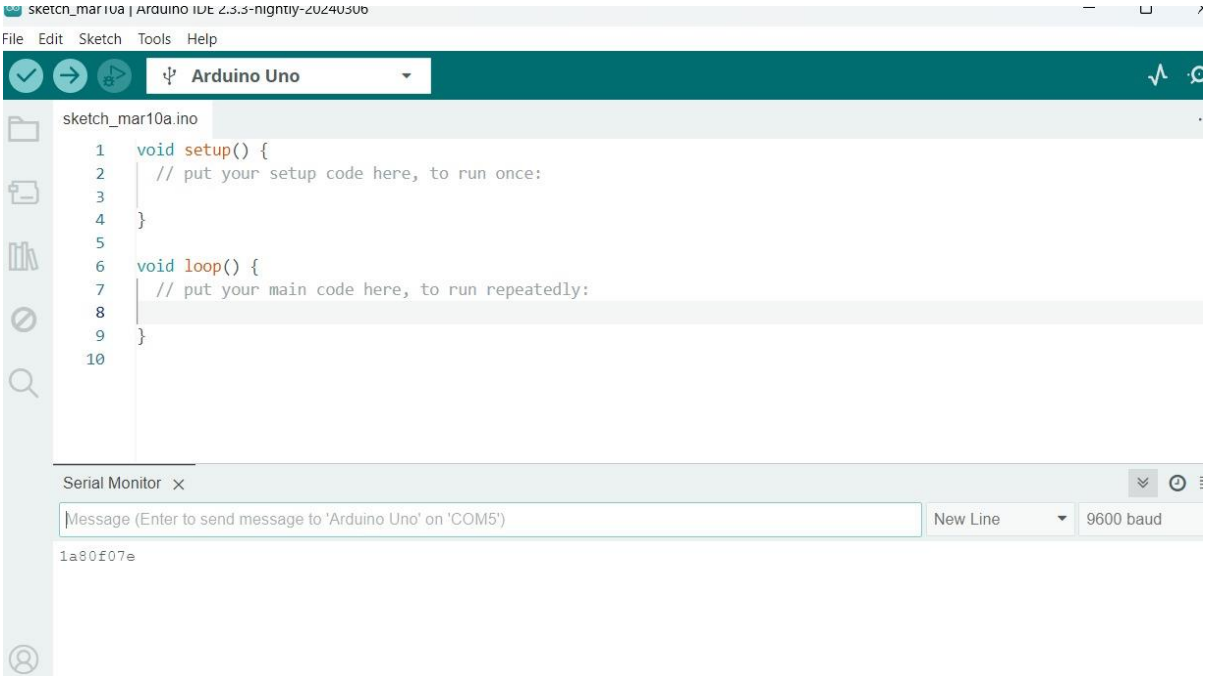
HARDWARE SETUP

Schematic Diagram


Cirkit Designer
RFID-RC522
SDA
SCK
MOSI
MISO
IQR
GND
3.3v
RESET
ICSP2
AREF
~13
~12
~11
~10
~9
DIGITAL (PWM=
TX0
RX0
L
TX
RX
UNO
Arduino
ON
ICSP
3v3
GND
POWER
ANALOG IN
IOREF
VIN
A0
A1
A2
A3
A4
A5

Circuits

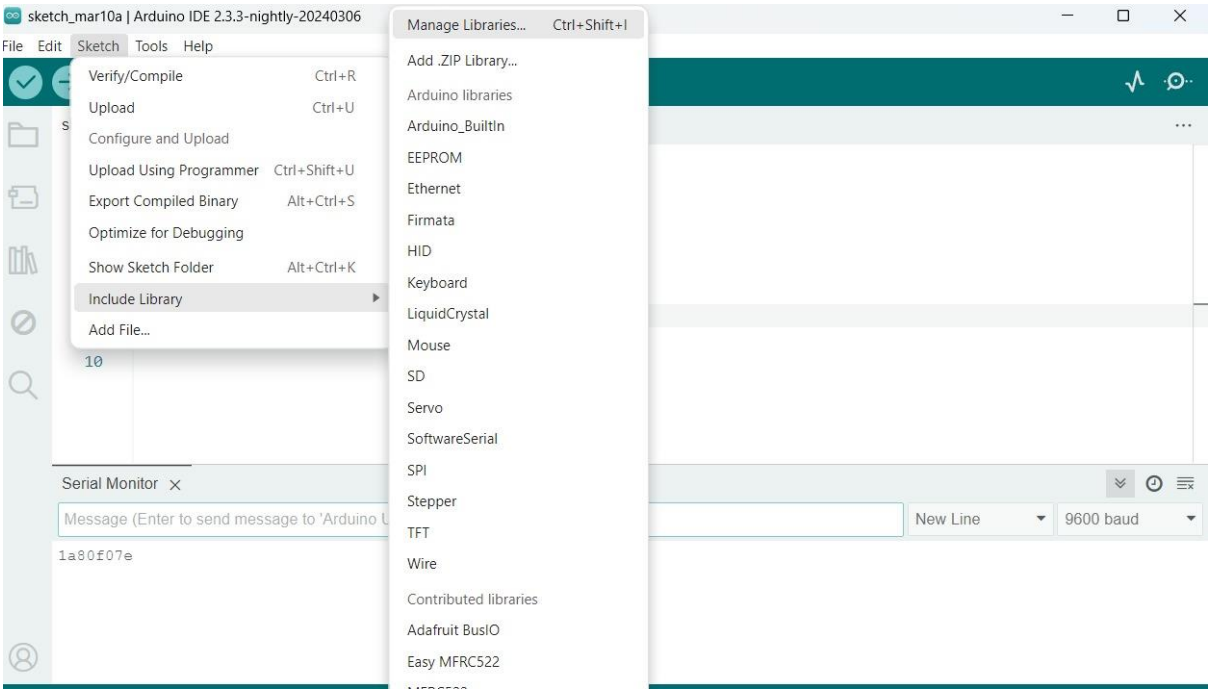




Step 1

The image depicts the Arduino Integrated Development Environment (IDE), a software application used for writing, compiling, and uploading code to Arduino boards.it presents a new, blank sketch titled "sketch_mar10a.ino," serving as a starting point for developing an Arduino program. The sketch consists of two essential functions: setup() and loop().The setup() function is executed only once when the Arduino board is powered on or reset, and it is used to initialize variables, configure pin modes, start communication with libraries or external devices, and perform any one-time setup tasks.

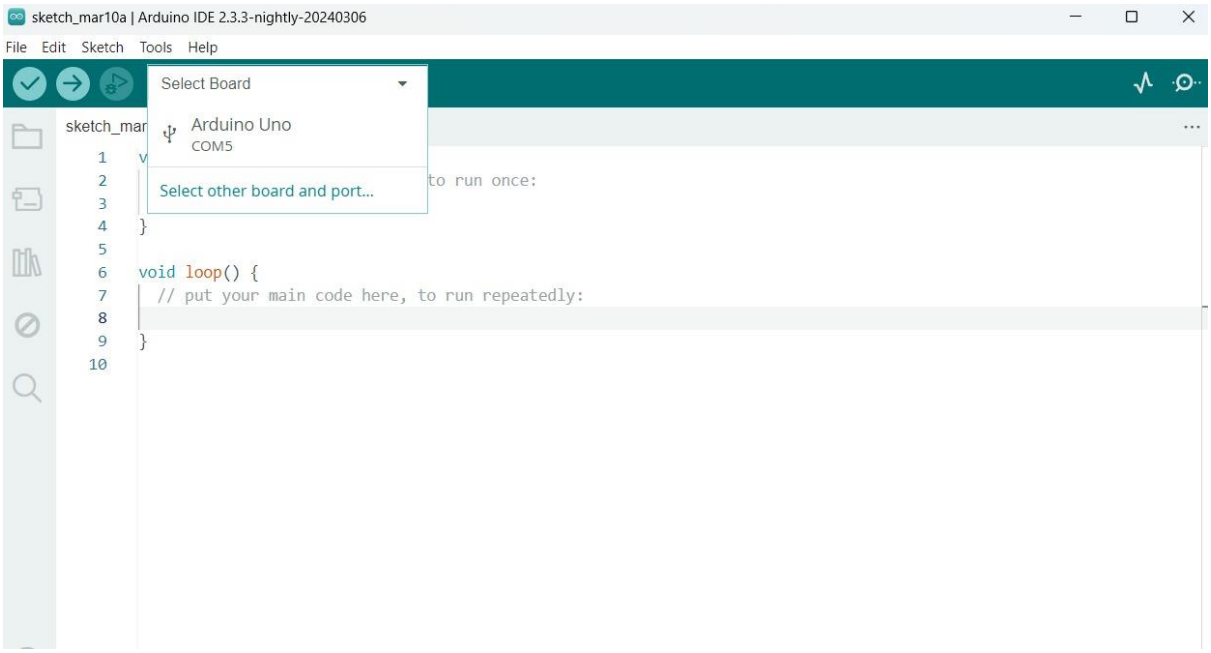
In the provided image, the setup() function is empty, with a comment prompting the user to add their setup code within this function. The loop() function is the core of the Arduino program, continuously executing in an infinite loop until the board is powered off or reset. It is designed to hold the main code that carries out the desired functionality of the Arduino project. In the image, the loop() function is also empty, with a comment instructing the user to insert their main code within this function



Step 2

The image shows the Arduino IDE (Integrated Development Environment), which is a software used for writing, compiling, and uploading code to Arduino microcontroller boards. The left panel displays various options such as "Verify/Compile," "Upload," "Upload Using Programmer," and others for managing the code and interacting with the connected Arduino board. The middle panel is the code editor where you write your Arduino sketches (programs). The bottom panel is the Serial Monitor, which allows you to send and receive data from the Arduino board via serial communication.

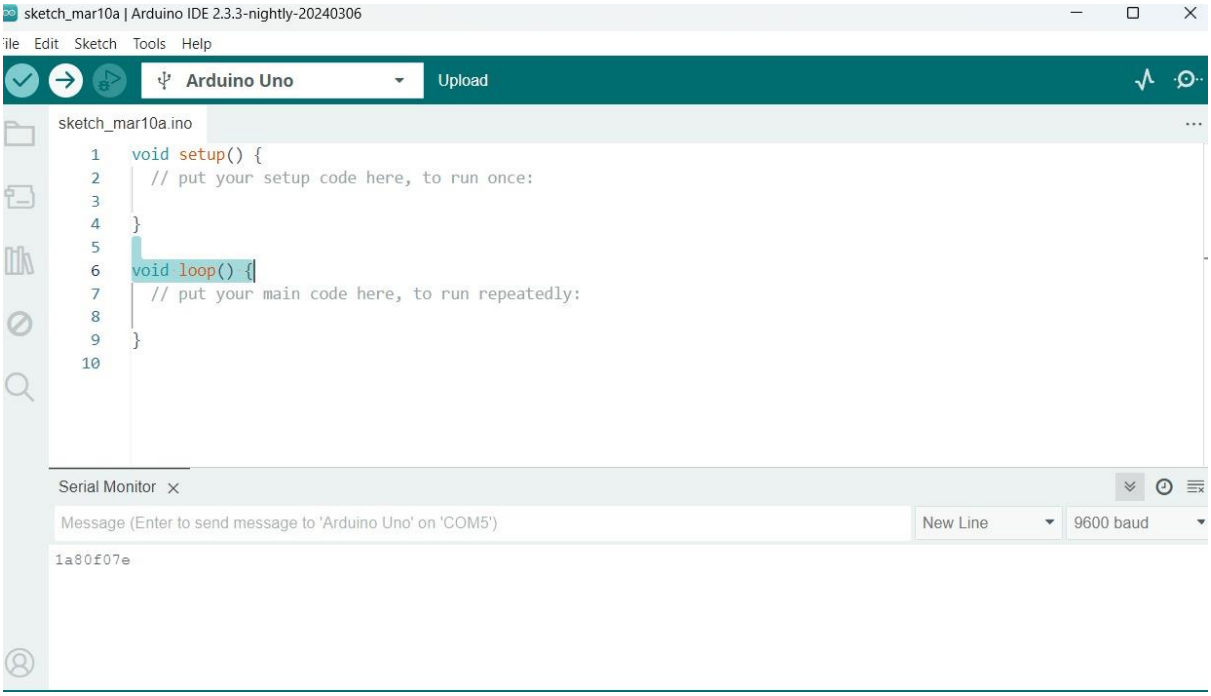
The right panel shows a list of installed libraries, which are collections of code that provide additional functionality for your Arduino projects. Libraries can be added to extend the functionality of your Arduino projects, such as controlling displays, sensors, or communication protocols. The Serial Monitor allows you to send and receive data from the Arduino board, which is useful for debugging and monitoring purposes. The Arduino IDE provides a user-friendly environment for programming and interacting with Arduino boards, making it easier to create various projects and prototypes.



Step 3

The image shows the Arduino IDE (Integrated Development Environment) with a basic Arduino sketch open. At the top, you can see the "Select Board" dropdown menu, which allows you to choose the Arduino board you're using for your project. In the dropdown, the "Arduino Uno" board is currently selected, along with the "COM5" port, which is the serial communication port the board is connected to. The code editor displays a template sketch with two main functions: setup() and loop(). The setup() function is executed once when the Arduino board is powered on or reset.

The loop() function contains the main code that runs repeatedly in an infinite loop. The commented lines in the code provide guidance on where to add your own code. To run your Arduino sketch, you first need to select the appropriate board and port from the "Tools" menu. Then, you can write your code within the setup() and loop() functions, adding any necessary libraries or variables. After writing your code, you can compile it by clicking the "Verify/Compile" button or pressing Ctrl+R. If there are no errors, you can upload the compiled code to the Arduino board by clicking the "Upload" button or pressing Ctrl+U. Once uploaded, the Arduino board will execute your code, with the setup() function running once and the loop() function repeating indefinitely.



Step 4

The image shows the Arduino IDE with a sketch named "sketch_mar10a.ino" open in the code editor. The sketch follows the standard Arduino program structure, with a setup() function and a loop() function. The setup() function is where you put your one-time initialization code, which runs once when the Arduino board starts up or is reset. The loop() function is where you place your main code, which will run repeatedly in an infinite loop. The commented lines in the code provide guidance on where to add your specific code for the setup() and loop() functions.

At the top of the IDE, you can see the "Arduino Uno" board is selected, indicating that the code will be compiled and uploaded for an Arduino Uno board. The "Upload" button is visible, which allows you to compile and upload the code to the connected Arduino board. In the bottom panel, you can see the Serial Monitor, which is a tool for sending and receiving data over the serial communication between the Arduino board and the computer. The Serial Monitor shows a message "1a80f07e", which could be data transmitted by the Arduino board, or possibly a random value displayed when the Serial Monitor is first opened.

DATABASE DESIGN

Table name-assignment

Description-

Primary key- assignment_id

ATTRIBUTES	DATA TYPE	DESCRIPTION	CONSTRAINTS
assignment_id	Int(11)	Id of the assignment	No
due_date	date	Submission date	No
assignment_information	longtext	Details of the assignment	No
sub_id	Int(11)	Id of the subject	No

Table name-attendance

Description-

Primary key- attendance_id

ATTRIBUTES	DATA TYPE	DESCRIPTION	CONSTRAINTS
attendance_id	Int(11)	Id of the attendence	No
attendence_date_time	datetime	Date and time of the attendence	No
attendance_data	longtext	Absent or present data	No
stud_id	Int(11)	Id of student	No

Table name-class

Description-

Primary key- class_id

ATTRIBUTES	DATA TYPE	DESCRIPTION	CONSTRAINTS
class_id	Int(11)	Id of the class	No
name	Varchar(30)	Name of class	No
start_id	Date	Class start date	No
end_id	Date	Class end date	No
teacher	Int(11)	Id of Teacher	No

Table name-student

Description-

Primary key-student_id

ATTRIBUTES	DATA TYPE	DESCRIPTION	CONSTRAINTS
student_id	Int(11)	Id of the student	No
Name	Varchar(40)	Name of the student	No
Email	Varchar(225)	Email of the student	No
Password	Varchar(225)	Password of the student	No
rf_id	Varchar(225)	Rfid of the student	No
phone_no	bigint(20)	Phone no. of the student	No
leave_reaquest	longtext	Student requests leave	No
clss_id	Int(11)	Id of class	No

Table name-subject

Description-

Primary key-subject_id

ATTRIBUTES	DATA TYPE	DESCRIPTION	CONSTRAINTS
subject_id	Int(11)	Id of the subject	No
name	Varchar(30)	Name of the subject	No
teacher	Int(11)	Id of Teacher	No
class	Int(11)	Id of class	No

Table name-submits

Description-

Primary key-stu_id, ass_id

ATTRIBUTES	DATA TYPE	DESCRIPTION	CONSTRAINTS
stu_id	Int(11)	Id of student	No
ass_id	Int(11)	Id of assignment	No
date	Date	Date of assigment	No
fileName	Varchar(225)	File name of assignment	No

Table name-teacher

Description-

Primary key-teacher_id

ATTRIBUTES	DATA TYPE	DESCRIPTION	CONSTRAINTS
teacher_id	Int(11)	Id of the teacher	No
Name	Varchar(30)	Name of the teacher	No
phone_no	bigint(20)	Phone no. Of teacher	No
Email	Varchar(225)	Email of teacher	No
password	Varchar(225)	Password of teacher	No
join_date	Date	Join date of the teacher	No
Subject	Varchar(225)	Id of the Subject	No

SOFTWARE REQUIREMENT SPECIFICATIONS

a. Tools

• Java/html/CSS for website

• Arduino script (INO based on C++)

• External libraries if required.

b. Platform

• VS Code

• Arduino IDE

c. Hardware and software requirements Hardware:

• Arduino UNO Board

• R305/R307 RFID Sensor

• Connecting Wires

• Breadboard

d.Software:

- VS Code
- Arduino IDE
- Xampp

SOFTWARE AND HARDWARE REQUIREMENT FOR DEVELOPMENT

HARDWARE-

• Arduino UNO Board

• R305/R307 RFID Sensor

• Connecting Wires

• Breadboard

SOFTWARE-

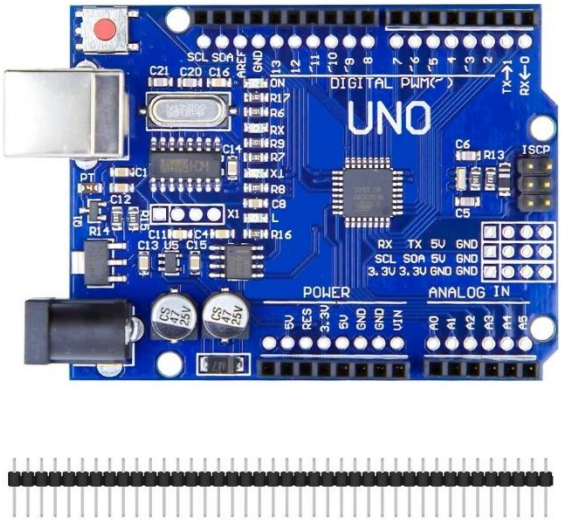
• VS Code

• Arduino IDE

• Xampp

HARDWARE-

Arduino UNO Board



The Arduino Uno R3 Compatible Board is a microcontroller board which is based on the ATmega328. Arduino Uno has 14 digital input or output pins(where 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button. It has everything needed to support the microcontroller, you need to simply connect it to a computer with a USB cable or power it with an AC-to-DC adapter or battery to get started.

R305/R307 RFID Sensor

RFID, or Radio-Frequency Identification, is a technology that uses wireless communication to identify and track objects or people. RFID sensors typically consist of two main components: an RFID reader and an RFID tag.

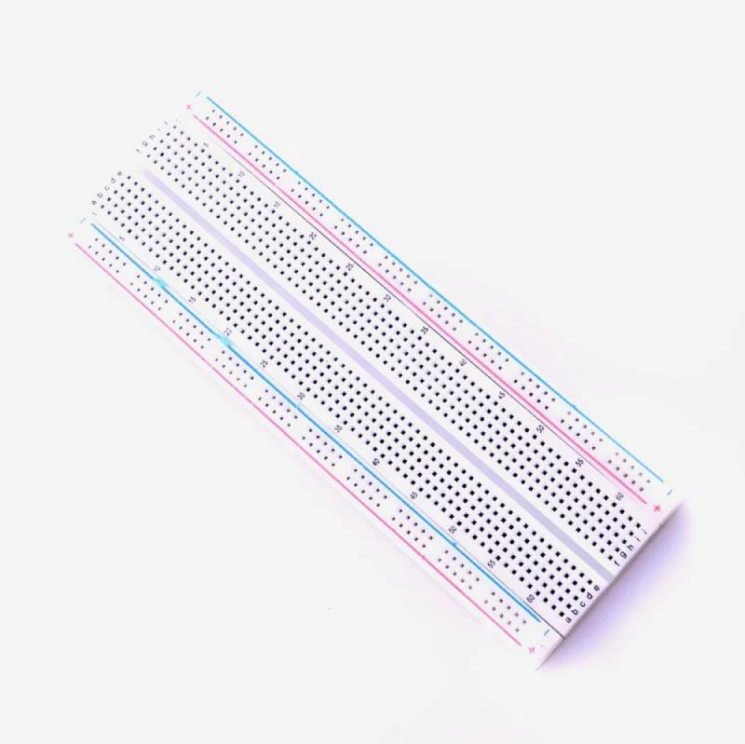
RFID Reader (R305/R307?): The RFID reader is a device that emits radio waves to communicate with RFID tags. It can read the information stored on the RFID tags and, in some cases, write new data to them.

Connecting Wires

Male to female jumper wires are an essential component for any electronic prototyping and testing project. They allow for easy and convenient interconnection between components without the need for soldering. These jumper wires male to female come in groups or cables with connectors or pins at each end and are commonly used for connecting FRC pins, Header pins, Berg pins, and other components.

The male to female jumper wires, in particular, have a male pin on one end and a female connector on the other, making them suitable for a wide range of projects that require connecting components with different types of pins or connectors. One popular use for these jumper wires is with microcontrollers such as the Arduino These boards have a series of pins that control various components and sensors and with the help of male to female jumper wires, these pins can easily be connected to other components on a breadboard or in a circuit.

Breadboard

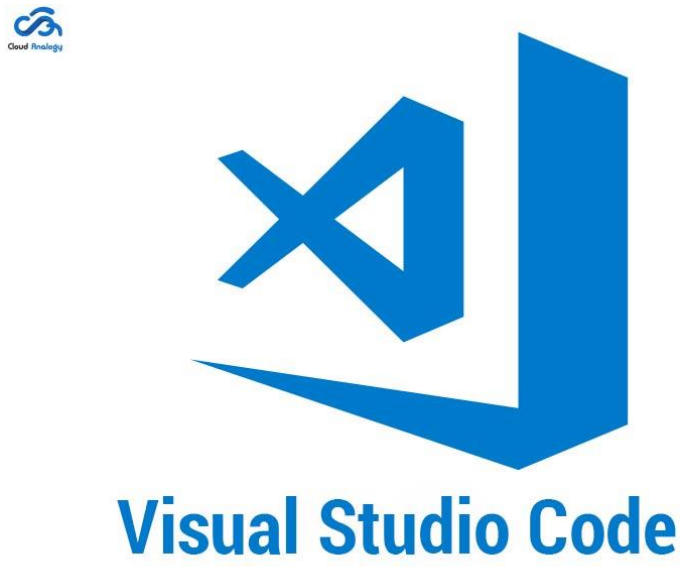


A breadboard consists of plastic block holding a matrix of electrical sockets of a size suitable for gripping thin connecting wire, component wires or the pins of transistors and integrated circuits (ICs). The sockets are connected inside

the board, usually in rows of five sockets.

SOFTWARE-

VS Code



Visual Studio Code is a source-code editor that can be used with a variety of programming languages, including C, C#, C++, Fortran, Go, Java, JavaScript, Node. js, Python, Rust, and Julia. It is built on the Electron framework, which is used to develop Node.

Arduino IDE

The Arduino IDE (Integrated Development Environment) is a software application used for writing, compiling, and uploading code to Arduino-compatible microcontrollers. It provides a user-friendly interface and a set of tools to simplify the process of programming Arduino boards.

Xampp

XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server possible.

VALIDATION TEST REPORT

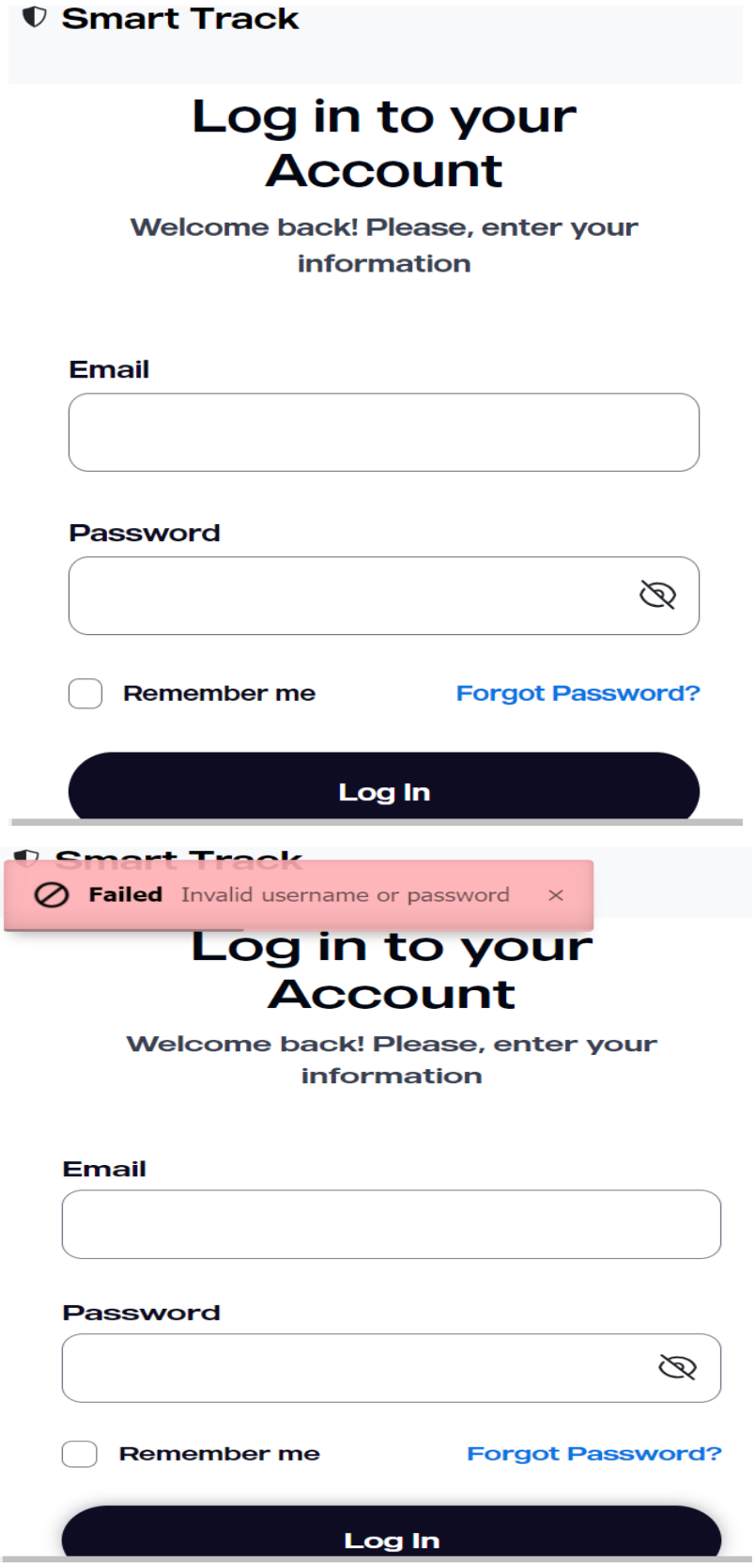
Validation is the process of evaluating a system of components during or at the end of the development process to determine whether it satisfied specific requirements. The output produced by given activity represents the goal to be satisfied by that activity hence it is necessary to have validation for each output.

Test validation is a procedure that demonstrates that a test is job-related and correlates to on-the-job performs. So validations involved actual testing can be done after the verification is completed. Hence verification is a process evaluating a component or system to determine whether the products of given development stages satisfying the condition imposed at the start of the phase.

Validation is the process of checking in order to check whether they are working according to the requirements or not in the validations they give preference.

Validation is correctness of a component or system with respect to their requirements. For this purpose the validation testing is the responsibility of the tester and all the tests done in the box testing will be treated as validation tests.

Login page


Smart Track
Log in to your Account
Welcome back! Please, enter your information
Email
Password
Remember me
Forgot Password?
Log In
Failed
Invalid username or password
Log in to your Account
Welcome back! Please, enter your information
Email
Password
Remember me
Forgot Password?
Log In

Report-1

Project-Arduino student attendance tracker

Module-login page

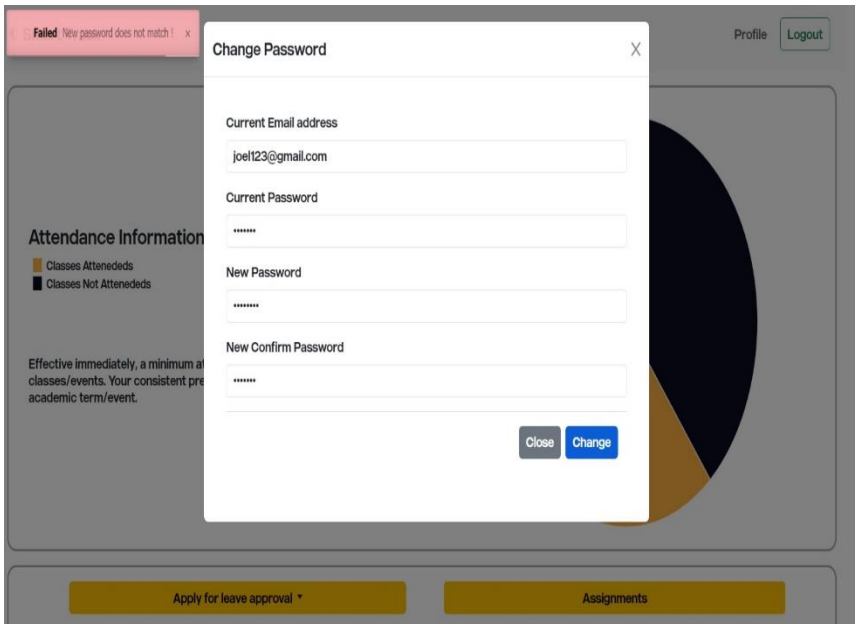
Functional specification-login for the user

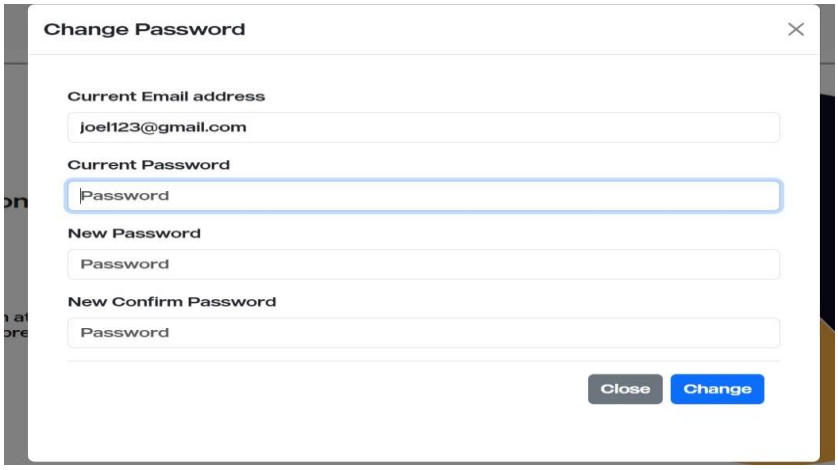
Test date-

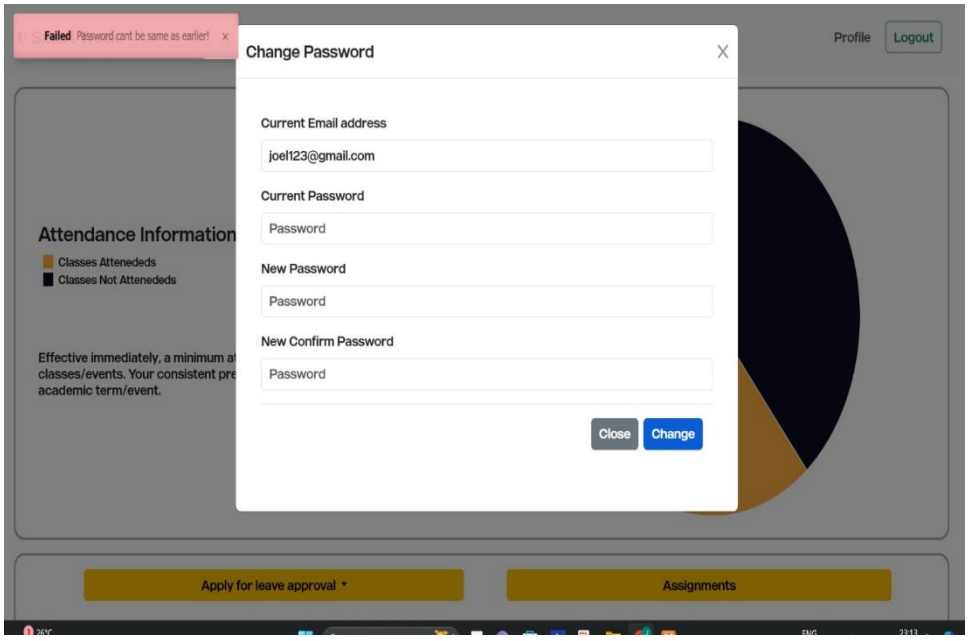
Test objective-to validate login page form

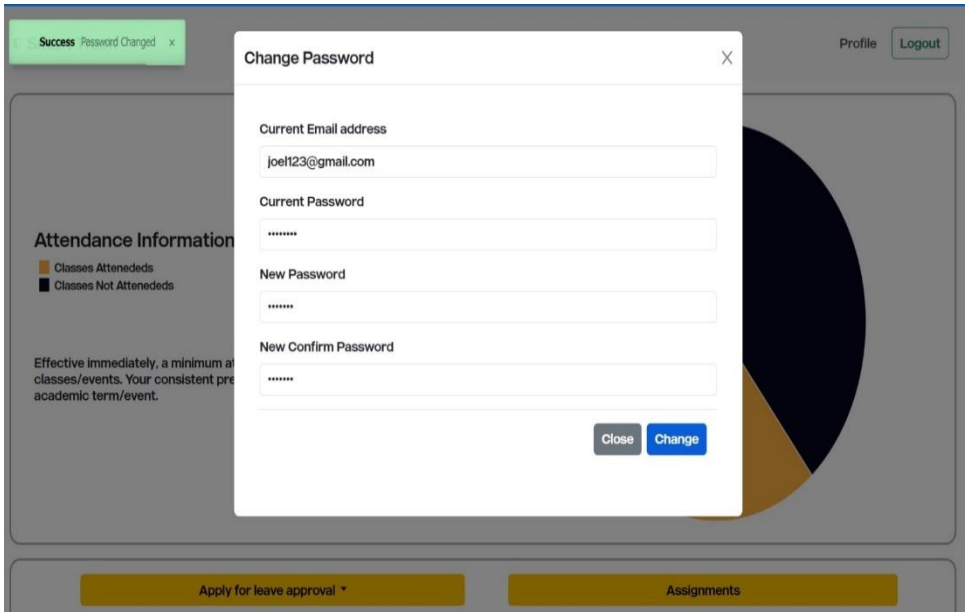
TEST CASE NO	EVENT	INPUT DATA	EXPECTED DATA	ACTUAL OUTPUT	RESULT
1	Enter the “Username”	Username=””	Should display warning message	Display warning Message ”Failed invalid username or password”	Success
2	Enter the “password”	Password=””	Should display warning message	Display warning Message “Password cannot be empty”	Success

Password change form






Failed Password cant be same as earlier!
Profile
Logout
Change Password
Current Email address
joel123@gmail.com
Current Password
Password
New Password
Password
New Confirm Password
Password
Close
Change
Attendance Information
Classes Attenededs
Classes Not Attenededs
Apply for leave approval
Assignments


Success Password Changed
Profile
Logout
Change Password
Current Email address
joel123@gmail.com
Current Password
New Password
New Confirm Password
Close
Change
Attendance Information
Classes Attenededs
Classes Not Attenededs
Apply for leave approval
Assignments

Report-2

Project- Arduino student attendance tracker

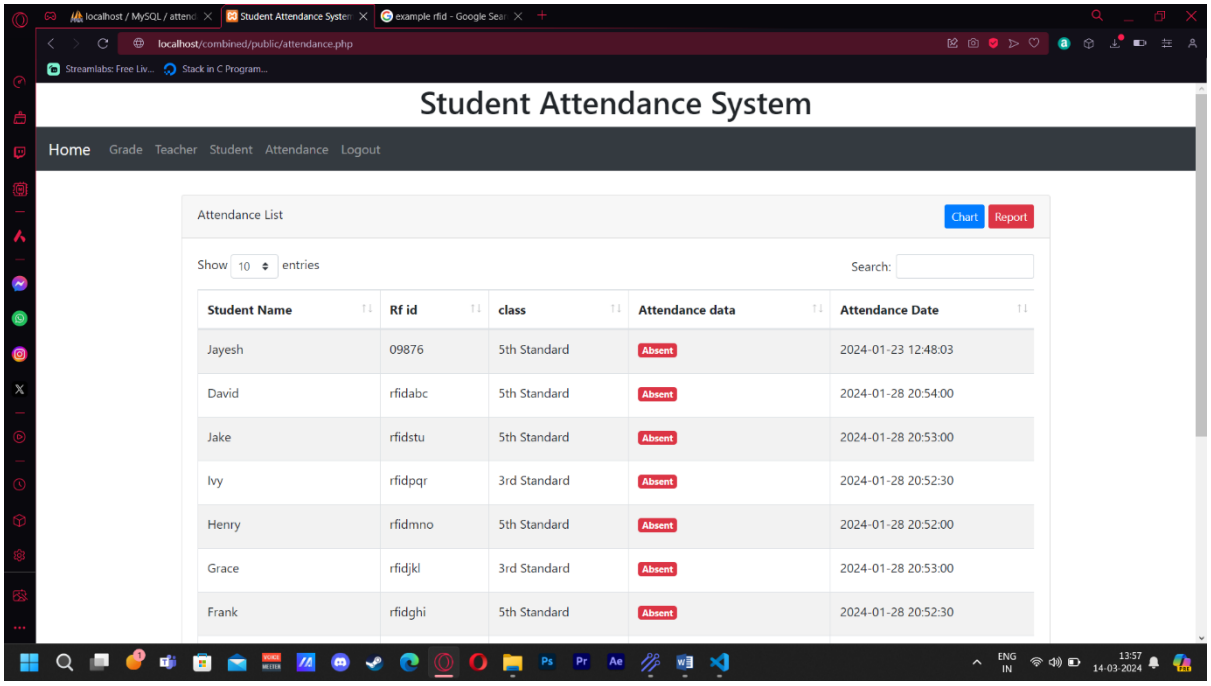
Module-password reset

Functional specification-password rest for the user

Test date-

Test objective-to validate password reset form

TEST CASE NO	EVENT	INPUT DATA	EXPECTED DATA	ACTUAL OUTPUT	RESULT
1	Enter the “current email”	Email=””	Should display warning	“email cannot be empty”	success
2	Enter the ”current password”	Current password=””	Should display warning	"wrong password”	success
3	Enter the ”new password”	New password=””	Should display warning	"password cannot be the same”	success
4	Enter ”confirm new password”	Confirm new password=”” ”	Should display warning	"password does not match”	success



Report-3

Project- Arduino student attendance tracker

Module- Mark attendance

Functional specification- mark present/absent for user

Test date-

Test objective-to validate RFID

TEST CASE NO	EVENT	INPUT DATA	EXPECTED DATA	ACTUAL OUTPUT	RESULT
1	Scan RFID tag	rfid=””	Should display warning	'Failed to start RFID scan'	success

SYSTEM INTEGRATION TEST REPORT

System integration means that all components of the system are integrated and tested as a single unit.

Integration testing is at testing of the interface. It can be divided into 2 types, namely

•Component or subsystem integration

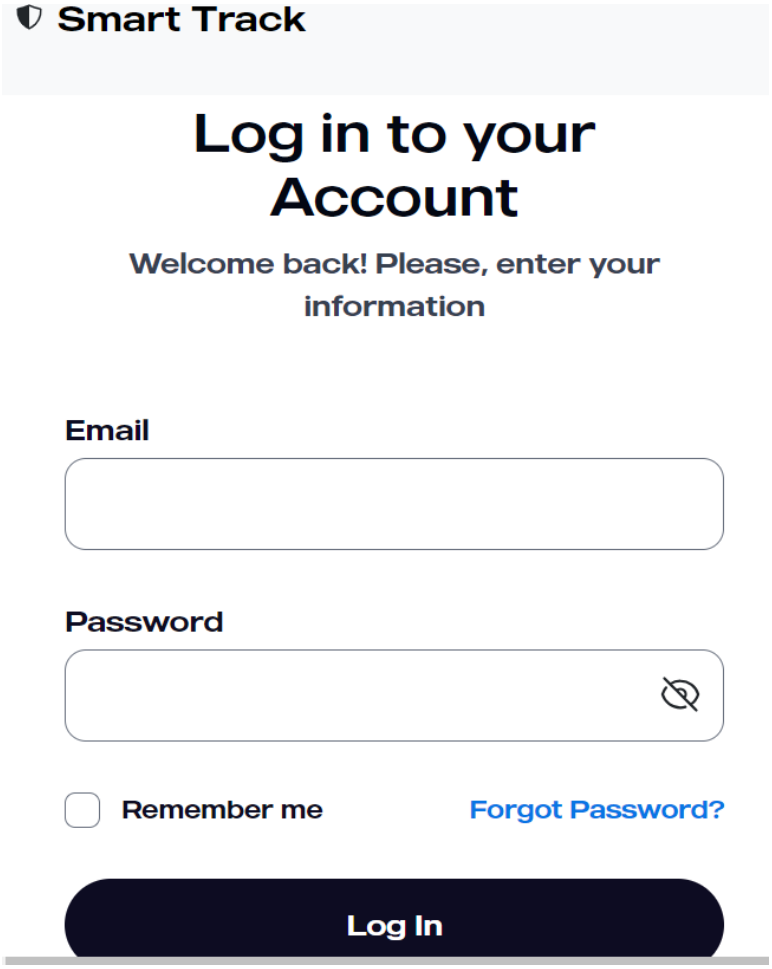
•Final integration testing or system integration

The main aim is that optimization of integrating components and testing this approach is also called big bang integration. It reduces testing efforts and removes the duplication in testing

System integration using the big bang approach is well suited in the product development scenario where the majority of the components are already available and stable and very few components are added or modified.

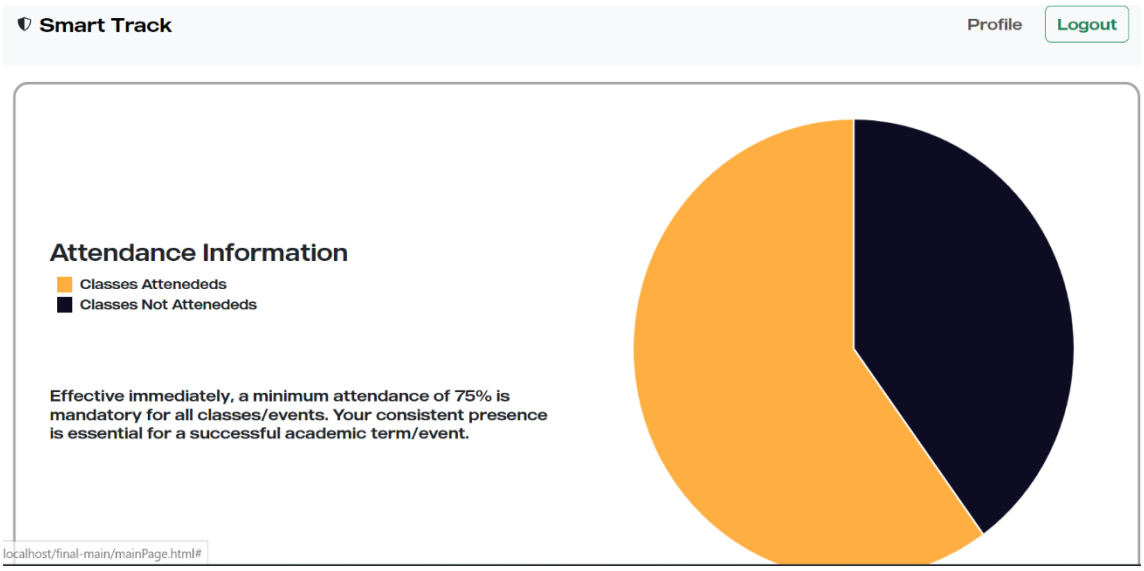
LOGIN PAGE

This page provides the user to login to their account



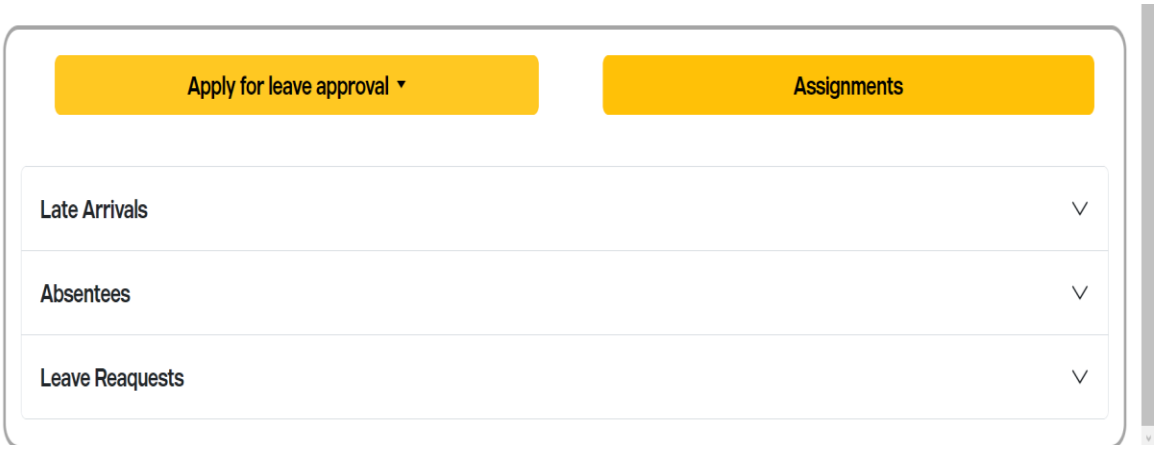
STUDENT PAGE

The student page contains the attendance information and student profile



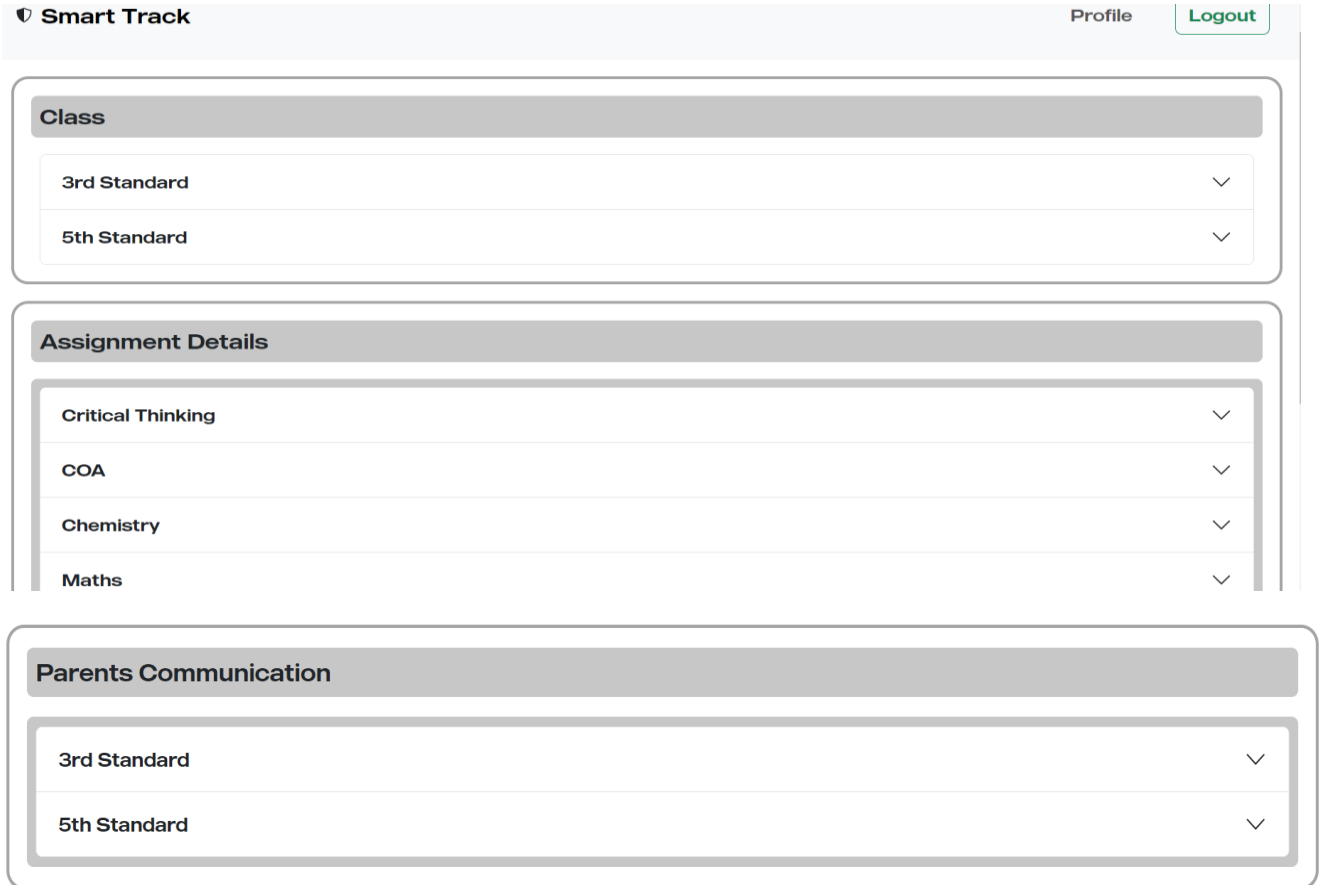
Leave approval and assignments

Contains the leave approval and assignments for the student page



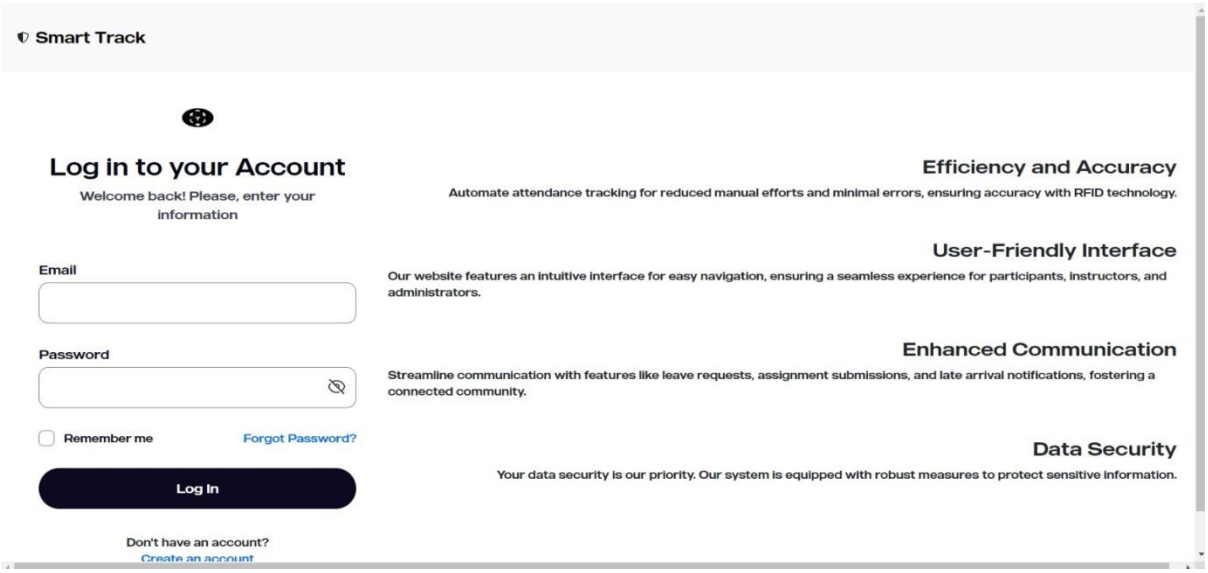
TEACHER PAGE

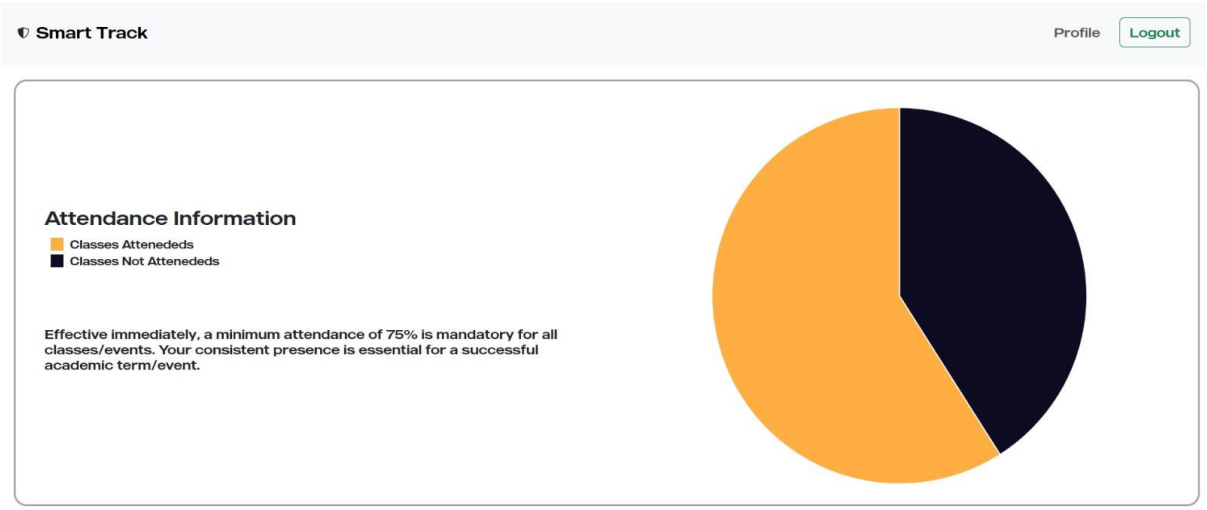
The teacher page contains class, assignment and parents communication

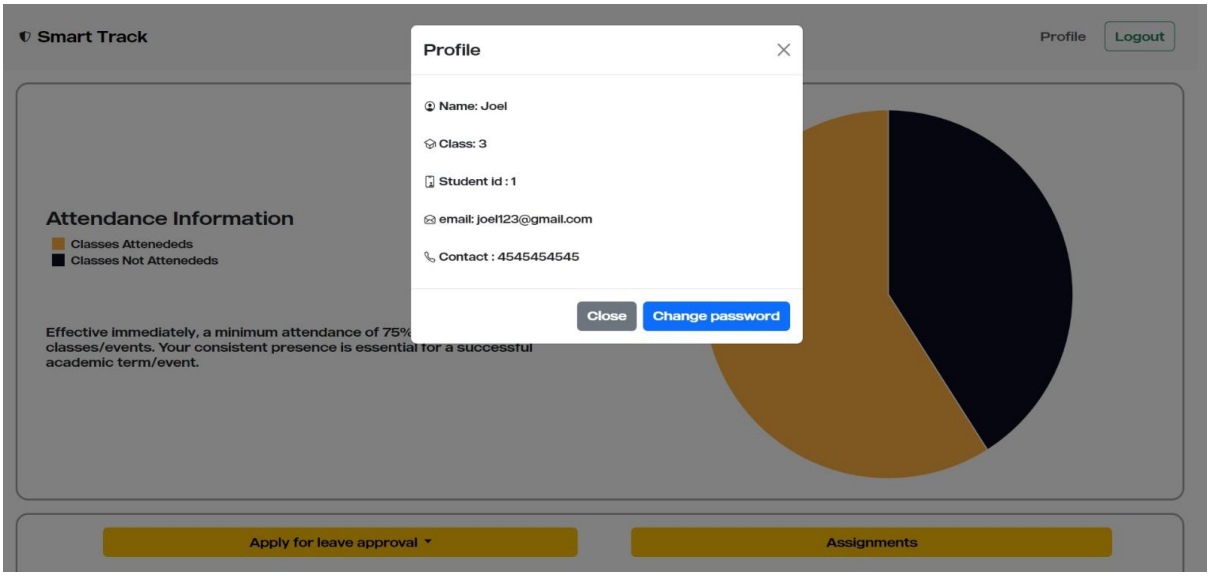


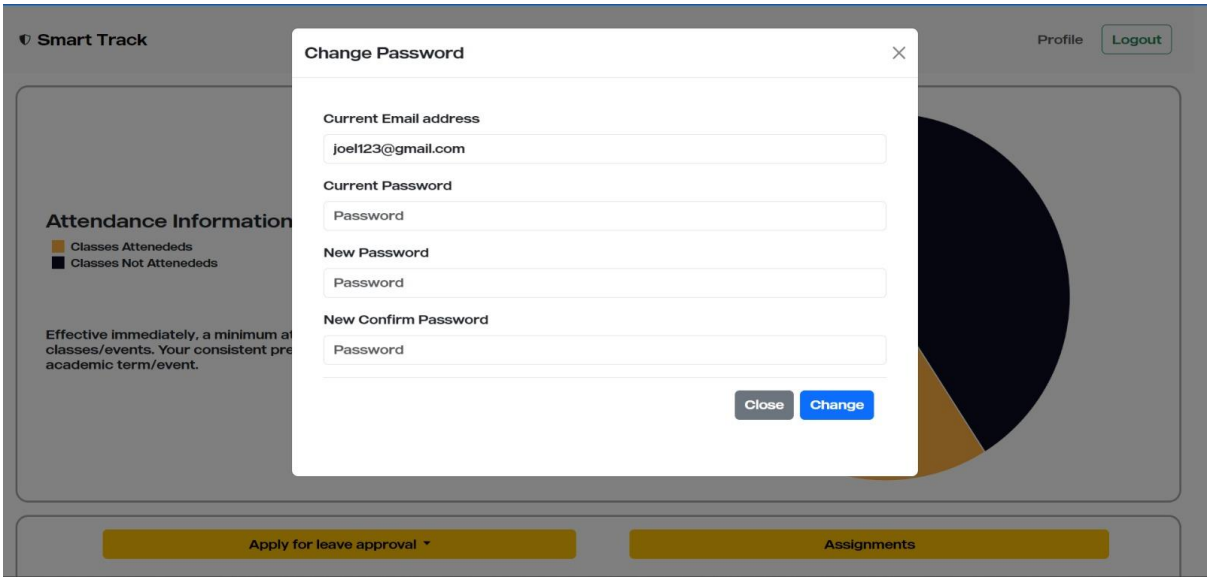
USER MANUAL

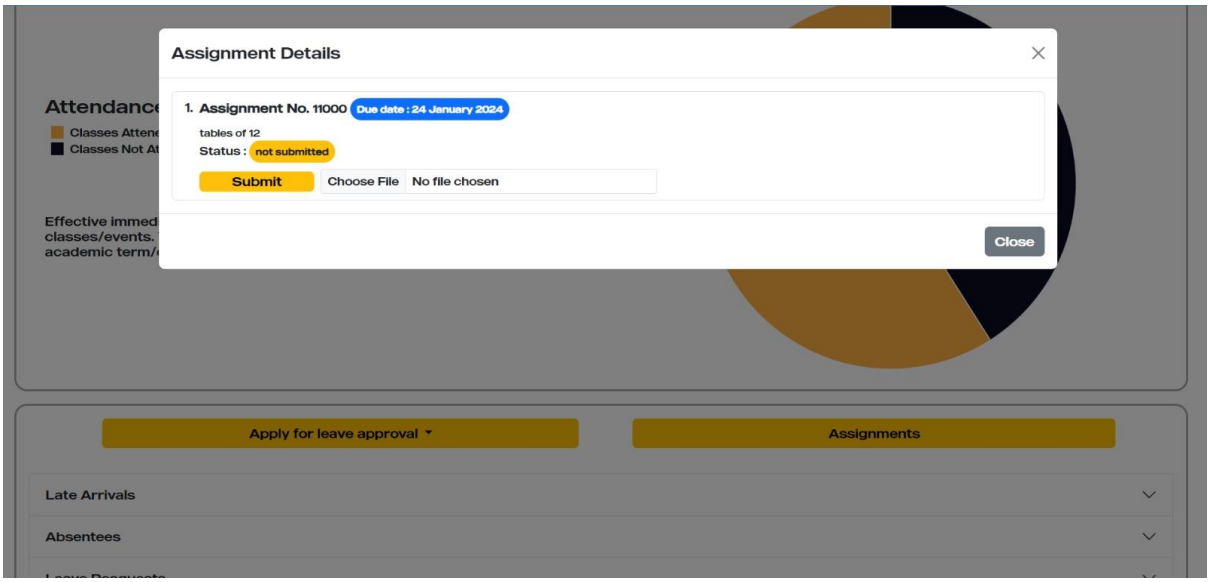
MANUAL FOR STUDENT

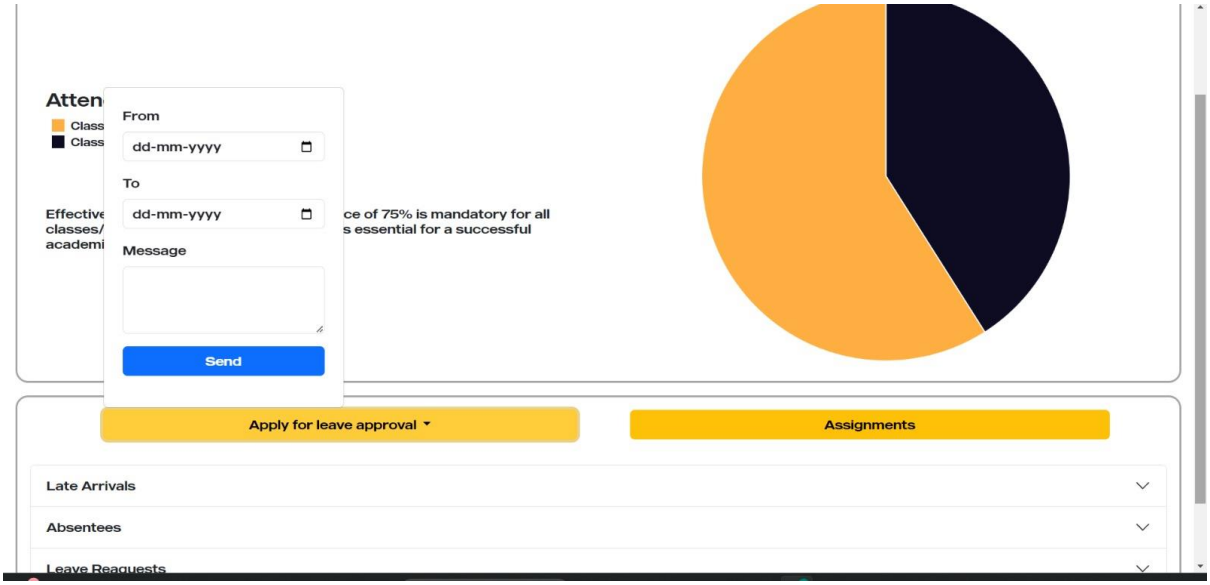




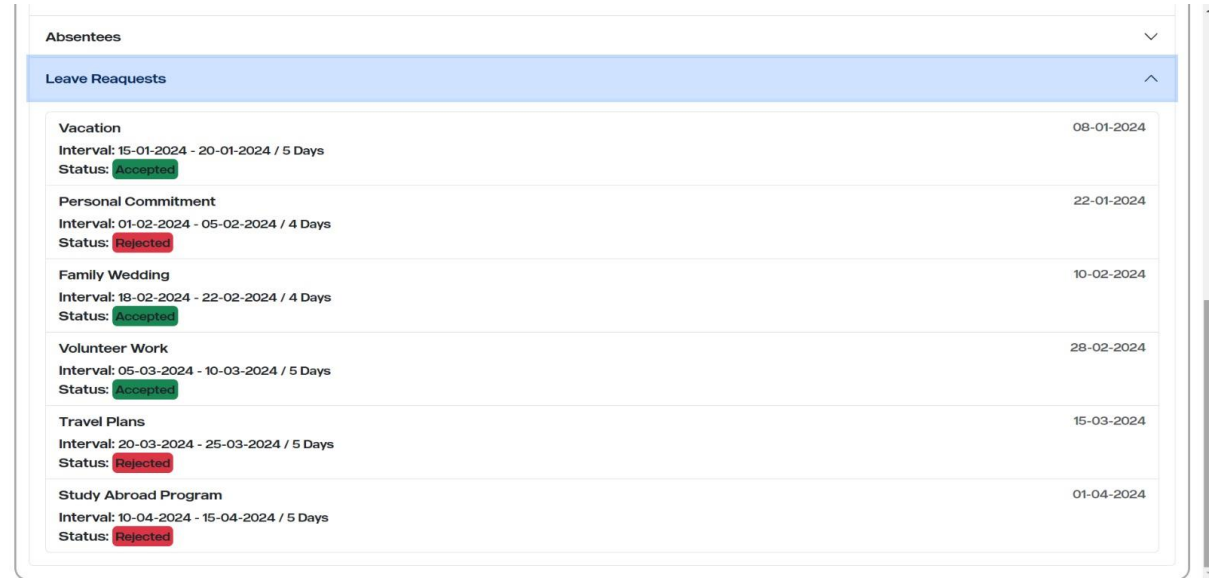

Smart Track
Profile
Logout
Profile
Name: Joel
Class: 3
Student id : 1
email: joel123@gmail.com
Contact : 4545454545
Close
Change password
Attendance Information
Classes Attenededs
Classes Not Attenededs
Effective immediately, a minimum attendance of 75%
classes/events. Your consistent presence is essential for a successful
academic term/event.
Apply for leave approval
Assignments

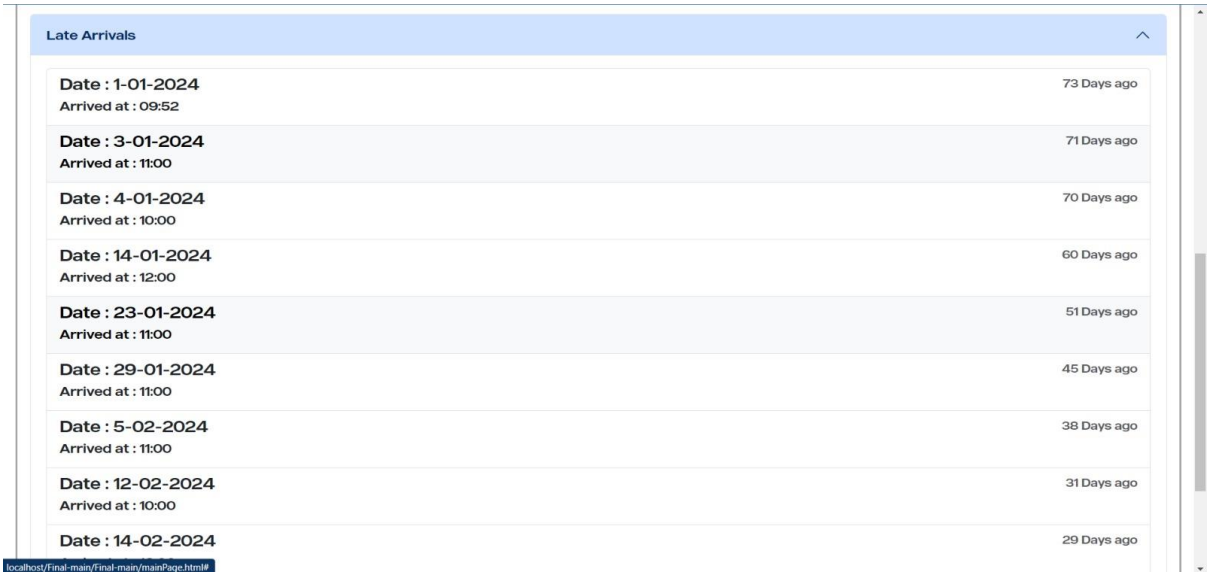

Smart Track
Profile
Logout
Change Password
Current Email address
joel123@gmail.com
Current Password
Password
New Password
Password
New Confirm Password
Password
Close
Change
Attendance Information
Classes Attenededs
Classes Not Attenededs
Apply for leave approval
Assignments


Assignment Details
1. Assignment No. 11000
Due date : 24 January 2024
tables of 12
Status :
not submitted
Submit
Choose File
No file chosen
Close
Apply for leave approval
Assignments
Late Arrivals
Absentees

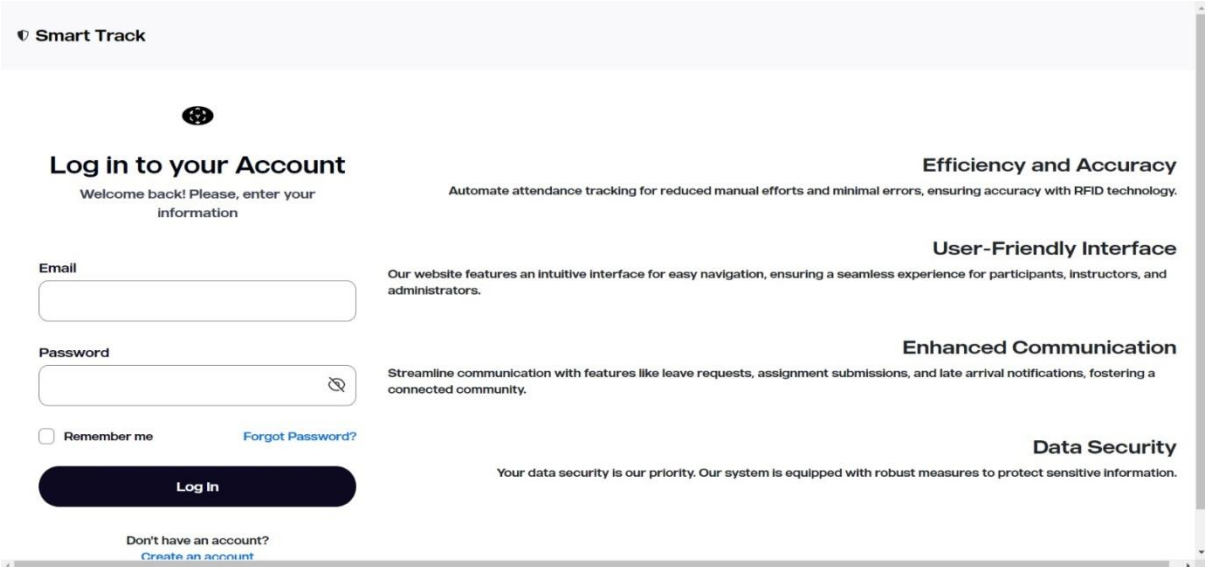

From
dd-mm-yyyy
To
dd-mm-yyyy
Message
Send

Apply for leave approval
Assignments
Late Arrivals
Absentees
Leave Reaquests

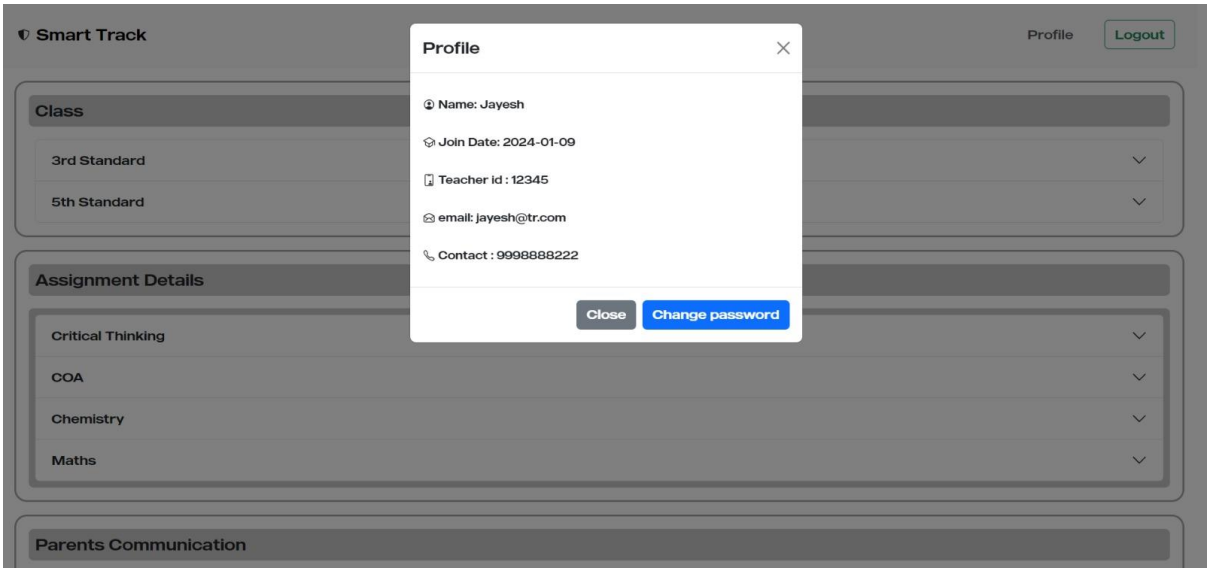

Absentees
Leave Reaquests
Vacation
Interval: 15-01-2024 - 20-01-2024 / 5 Days
Status: Accepted
08-01-2024
Personal Commitment
Interval: 01-02-2024 - 05-02-2024 / 4 Days
Status: Rejected
22-01-2024
Family Wedding
Interval: 18-02-2024 - 22-02-2024 / 4 Days
Status: Accepted
10-02-2024
Volunteer Work
Interval: 05-03-2024 - 10-03-2024 / 5 Days
Status: Accepted
28-02-2024
Travel Plans
Interval: 20-03-2024 - 25-03-2024 / 5 Days
Status: Rejected
15-03-2024
Study Abroad Program
Interval: 10-04-2024 - 15-04-2024 / 5 Days
Status: Rejected
01-04-2024

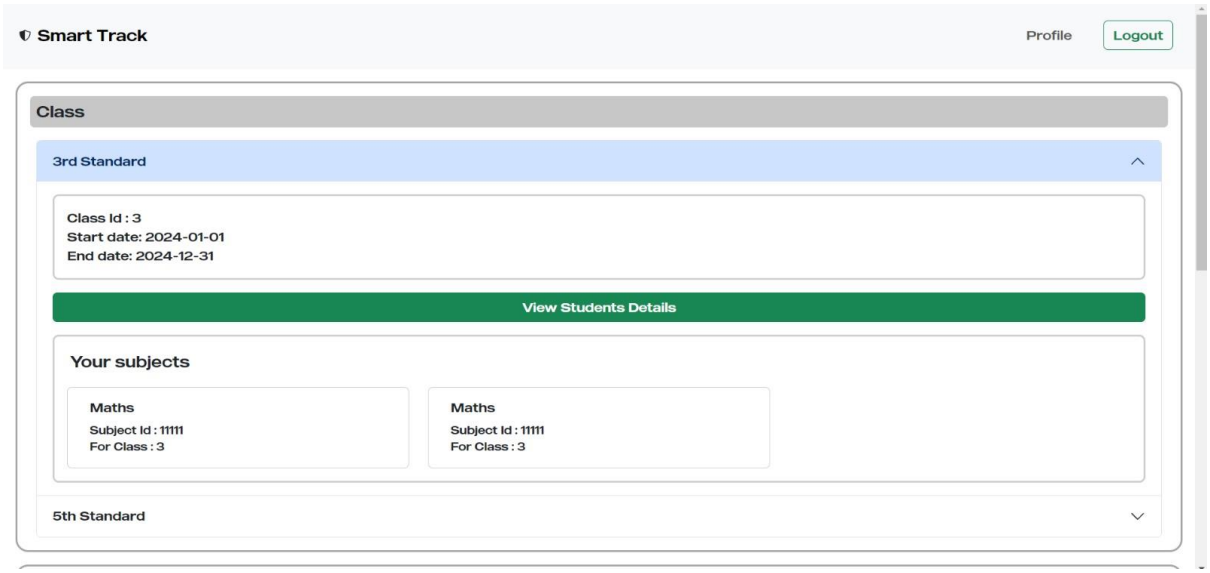

Late Arrivals
Date : 1-01-2024
Arrived at : 09:52
73 Days ago
Date : 3-01-2024
Arrived at : 11:00
71 Days ago
Date : 4-01-2024
Arrived at : 10:00
70 Days ago
Date : 14-01-2024
Arrived at : 12:00
60 Days ago
Date : 23-01-2024
Arrived at : 11:00
51 Days ago
Date : 29-01-2024
Arrived at : 11:00
45 Days ago
Date : 5-02-2024
Arrived at : 11:00
38 Days ago
Date : 12-02-2024
Arrived at : 10:00
31 Days ago
Date : 14-02-2024
29 Days ago
localhost/Final-main/Final-main/mainPage.html#

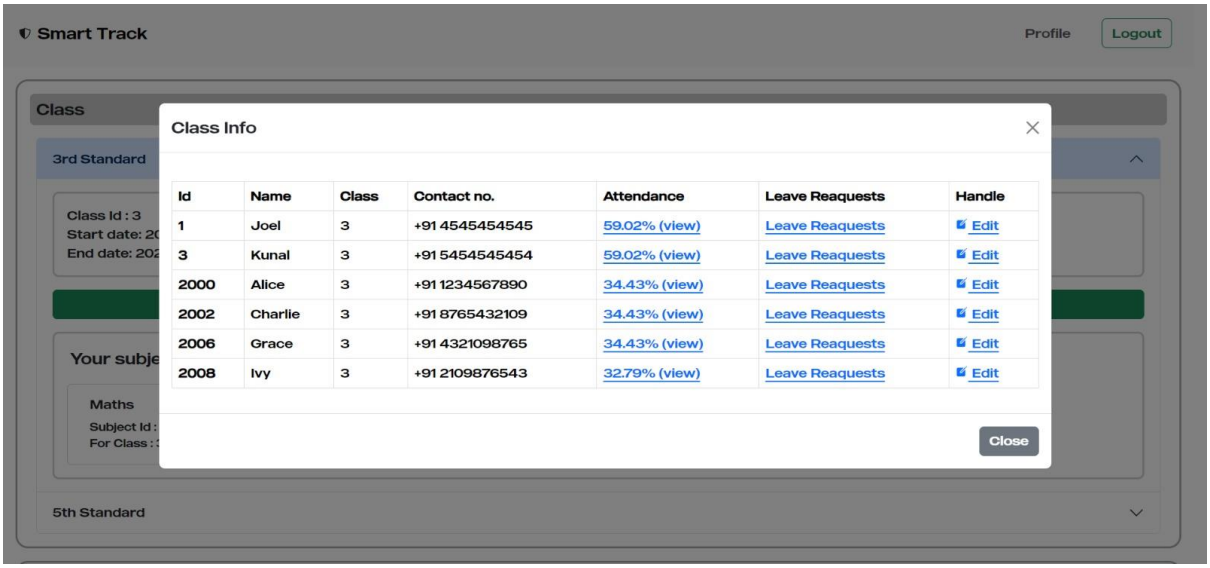
MANUAL FOR TEACHER



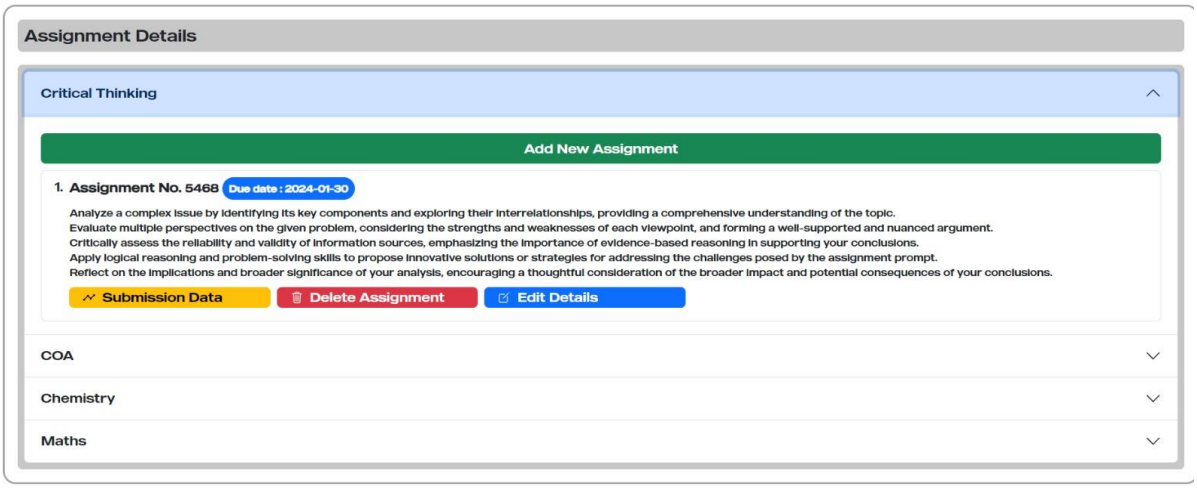

Smart Track
Profile
Logout
Class
3rd Standard
5th Standard
Assignment Details
Critical Thinking
COA
Chemistry
Maths
Parents Communication


Smart Track
Profile
Logout
Profile
Name: Jayesh
Join Date: 2024-01-09
Teacher id : 12345
email: jayesh@tr.com
Contact : 9998888222
Close
Change password
Class
3rd Standard
5th Standard
Assignment Details
Critical Thinking
COA
Chemistry
Maths
Parents Communication


Smart Track
Profile
Logout
Class
3rd Standard
Class Id : 3
Start date: 2024-01-01
End date: 2024-12-31
View Students Details
Your subjects
Maths
Subject Id : 11111
For Class : 3
Maths
Subject Id : 11111
For Class : 3
5th Standard


Smart Track
Profile
Logout
Class
3rd Standard
Class Id : 3
Start date: 2
End date: 202
Your subje
Maths
Subject Id :
For Class :
5th Standard
Class Info
Id
Name
Class
Contact no.
Attendance
Leave Reaquests
Handle
1
Joel
3
+91 4545454545
59.02% (view)
Leave Reaquests
Edit
3
Kunal
3
+91 5454545454
59.02% (view)
Leave Reaquests
Edit
2000
Alice
3
+91 1234567890
34.43% (view)
Leave Reaquests
Edit
2002
Charlie
3
+91 8765432109
34.43% (view)
Leave Reaquests
Edit
2006
Grace
3
+91 4321098765
34.43% (view)
Leave Reaquests
Edit
2008
Ivy
3
+91 2109876543
32.79% (view)
Leave Reaquests
Edit
Close


5th Standard


Assignment Details
Critical Thinking
Add New Assignment
1. Assignment No. 5468
Due date : 2024-01-30
Analyze a complex issue by identifying its key components and exploring their interrelationships, providing a comprehensive understanding of the topic.
Evaluate multiple perspectives on the given problem, considering the strengths and weaknesses of each viewpoint, and forming a well-supported and nuanced argument.
Critically assess the reliability and validity of information sources, emphasizing the importance of evidence-based reasoning in supporting your conclusions.
Apply logical reasoning and problem-solving skills to propose innovative solutions or strategies for addressing the challenges posed by the assignment prompt.
Reflect on the implications and broader significance of your analysis, encouraging a thoughtful consideration of the broader impact and potential consequences of your conclusions.
Submission Data
Delete Assignment
Edit Details
COA
Chemistry
Maths

FUTURE ENHANCEMENT

- Integration with Student ID Systems: Explore integrating the RFID attendance system with the existing student ID system. This integration can streamline various processes, such as library access, meal plans, and campus security.

- Mobile App Compatibility: Develop a dedicated mobile application that complements the web-based interface. The app can offer additional features such as push notifications for attendance updates, reminders for upcoming events, and access to personalized academic information.

- Geolocation Integration: Integrate geolocation technology to enhance the accuracy of attendance tracking. By combining RFID data with GPS information, the system can verify that students are physically present within designated school premises during attendance recording.

- Enhanced Student Engagement Features: Develop interactive features within the student portal to promote student engagement and participation. This may include forums for academic discussion, event calendars, and personalized learning resources based on individual attendance patterns.

- Integration with Learning Management Systems (LMS): Integrate the RFID attendance system with existing Learning Management Systems used by schools. This integration can facilitate seamless data exchange, allowing educators to correlate attendance data with academic performance metrics and tailor instructional strategies accordingly.

BIBLIOGRAPHY

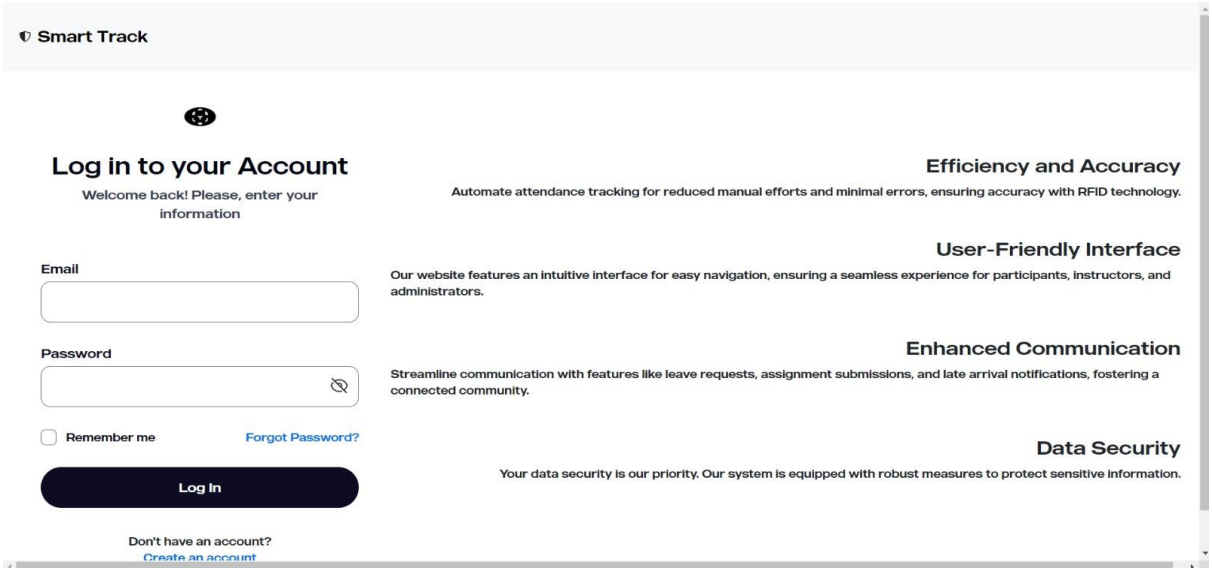
Sites to refer-

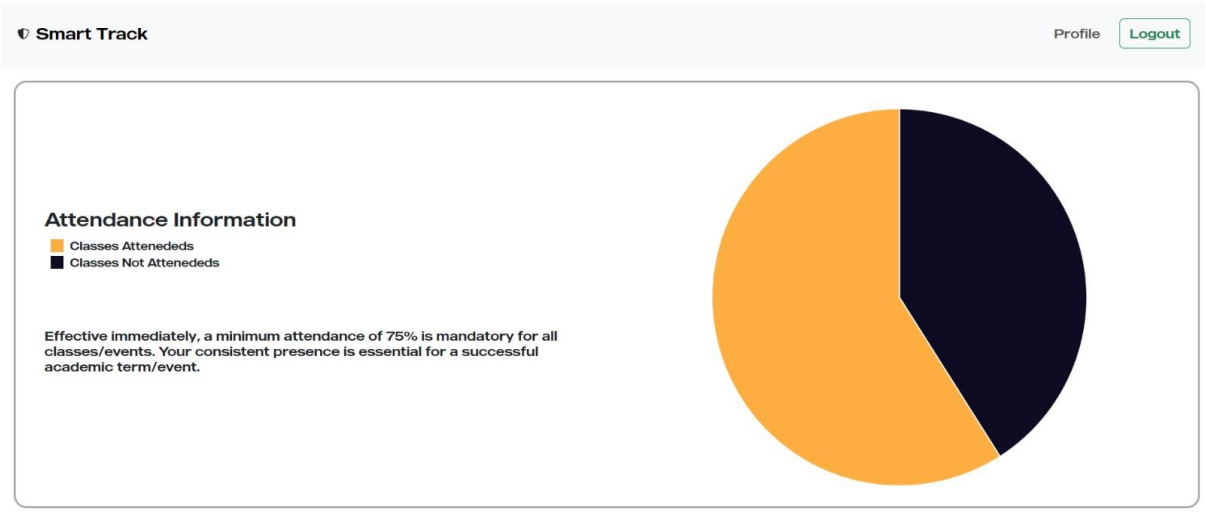
https://www.youtube.com

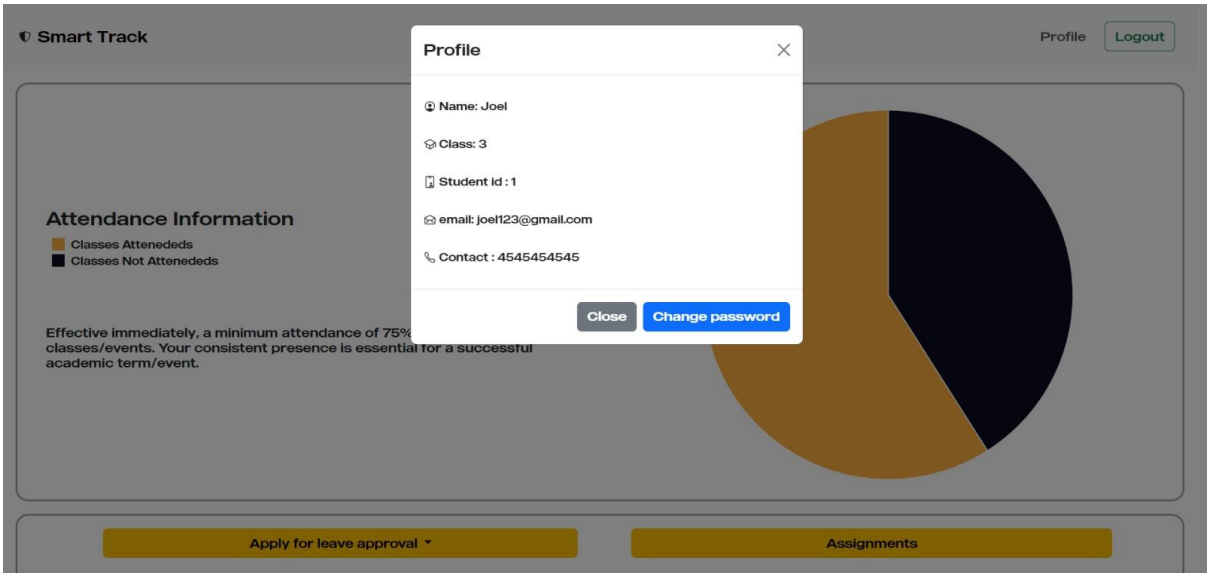
https://www.webslesson.com

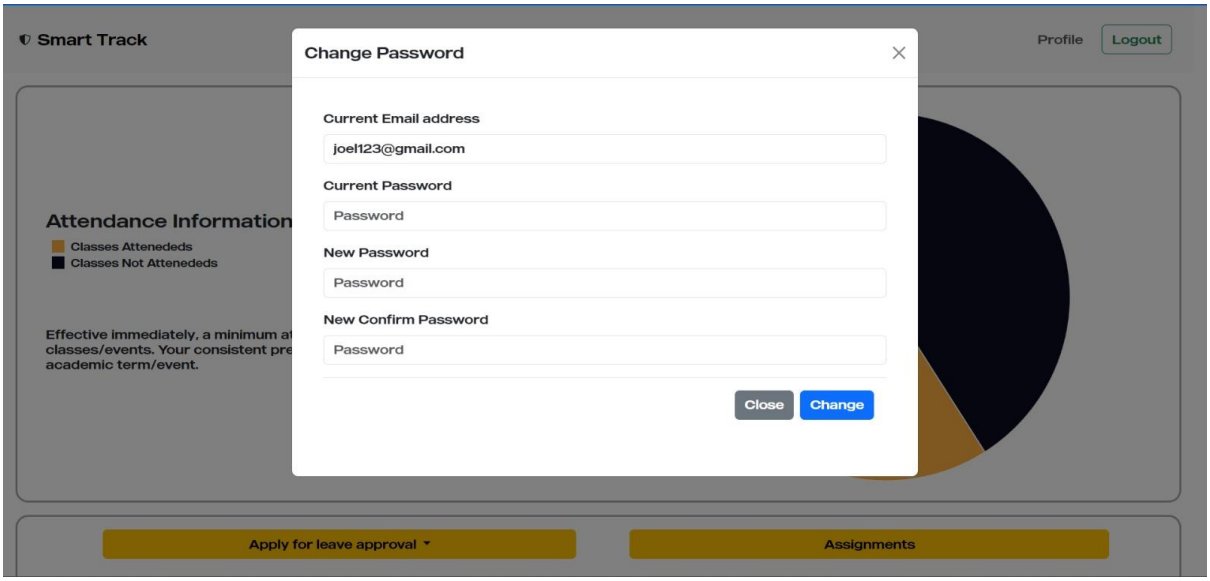
https://github.com

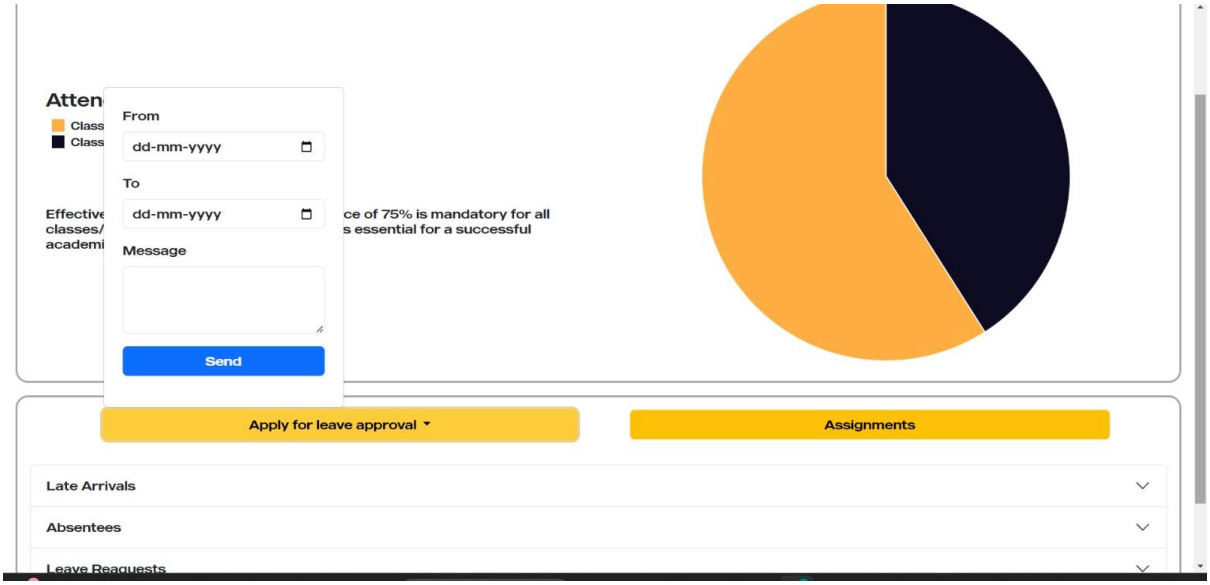
APPENDICES

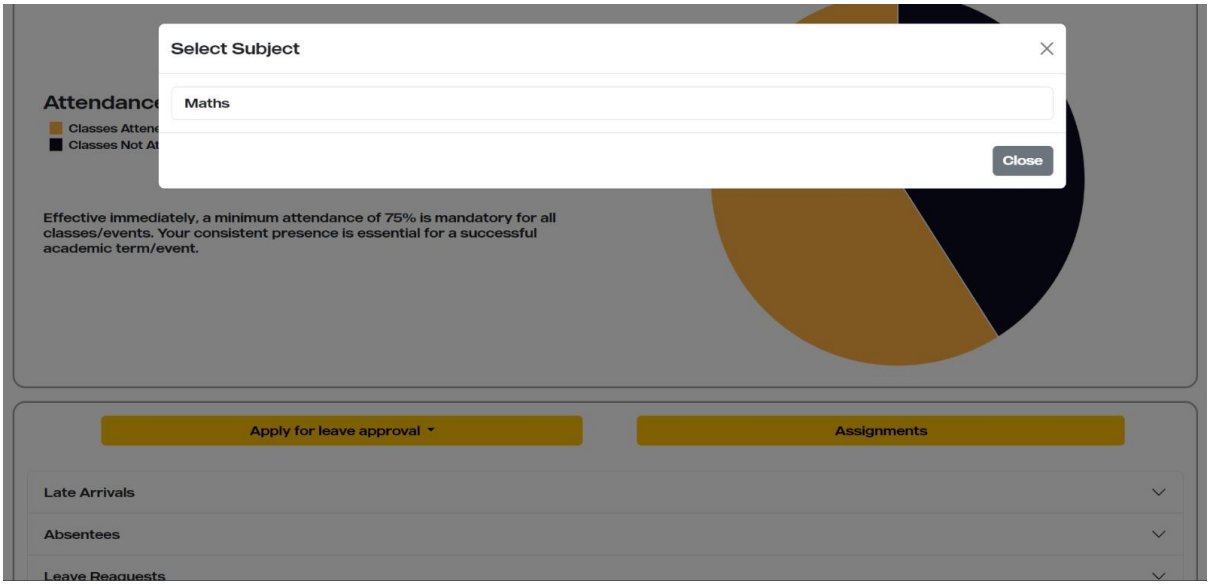

Smart Track
Log in to your Account
Welcome back! Please, enter your information
Email
Password
Remember me
Forgot Password?
Log In
Don't have an account?
Create an account
Efficiency and Accuracy
Automate attendance tracking for reduced manual efforts and minimal errors, ensuring accuracy with RFID technology.
User-Friendly Interface
Our website features an intuitive interface for easy navigation, ensuring a seamless experience for participants, instructors, and administrators.
Enhanced Communication
Streamline communication with features like leave requests, assignment submissions, and late arrival notifications, fostering a connected community.
Data Security
Your data security is our priority. Our system is equipped with robust measures to protect sensitive information.

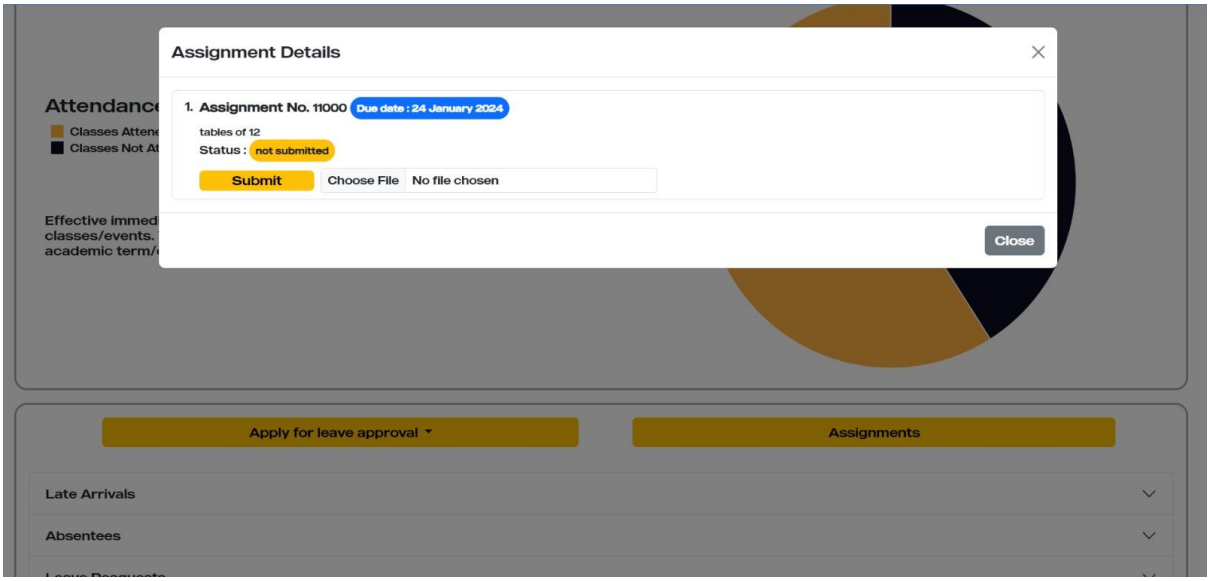

Smart Track
Profile
Logout
Attendance Information
Classes Attenededs
Classes Not Attenededs
Effective immediately, a minimum attendance of 75% is mandatory for all classes/events. Your consistent presence is essential for a successful academic term/event.

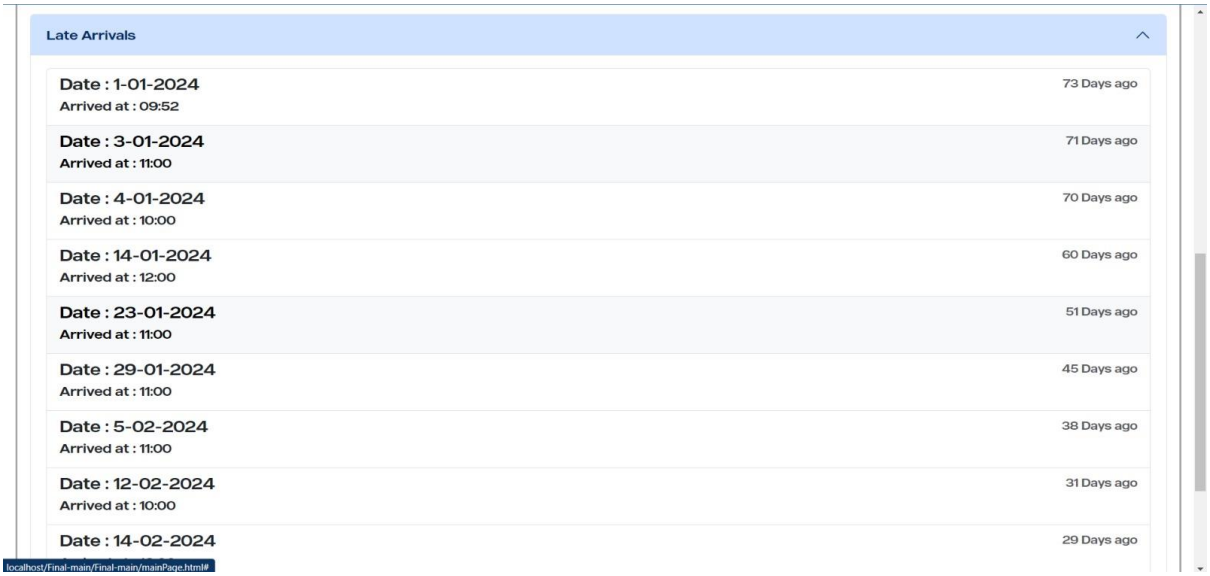

Smart Track
Profile
Logout
Profile
Name: Joel
Class: 3
Student id : 1
email: joel123@gmail.com
Contact : 4545454545
Close
Change password
Attendance Information
Classes Attenededs
Classes Not Attenededs
Effective immediately, a minimum attendance of 75%
classes/events. Your consistent presence is essential for a successful
academic term/event.
Apply for leave approval
Assignments


Smart Track
Profile
Logout
Change Password
Current Email address
joel123@gmail.com
Current Password
Password
New Password
Password
New Confirm Password
Password
Close
Change
Attendance Information
Classes Attenededs
Classes Not Attenededs
Effective immediately, a minimum at
classes/events. Your consistent pre
academic term/event.
Apply for leave approval
Assignments

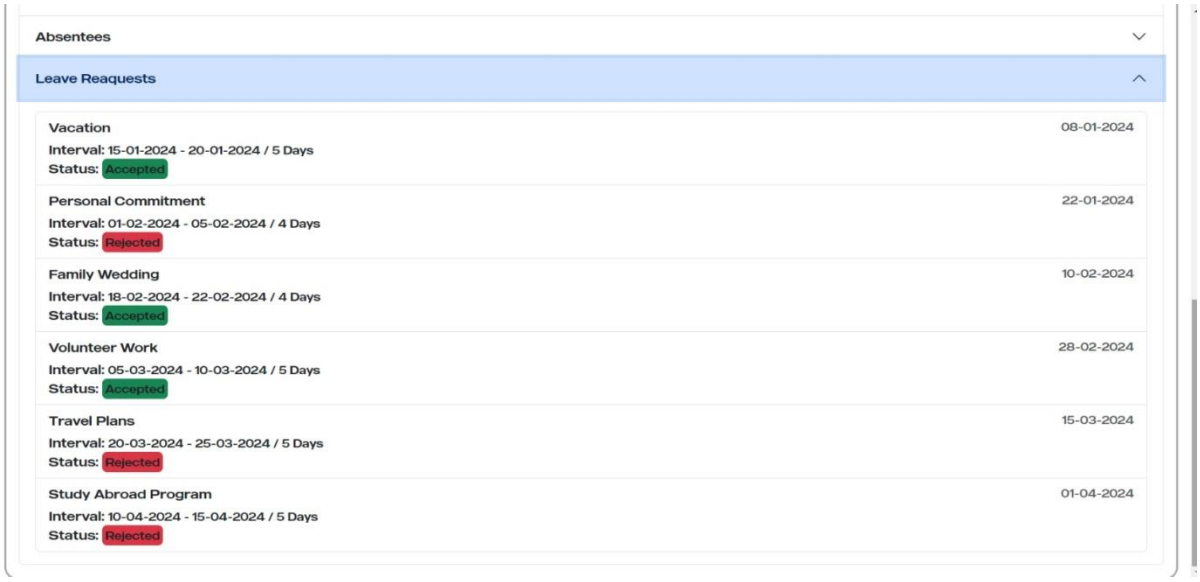

From
dd-mm-yyyy
To
dd-mm-yyyy
Message
Send
ce of 75% is mandatory for all
s essential for a successful
Apply for leave approval
Assignments
Late Arrivals
Absentees
Leave Reaquests

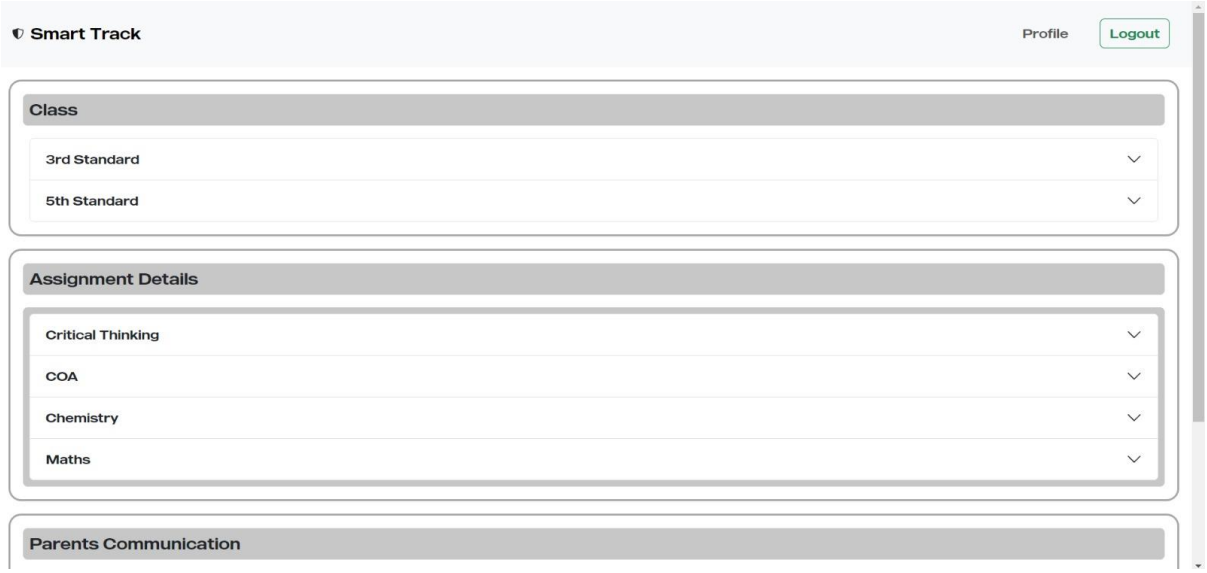

Select Subject
Maths
Close
Effective immediately, a minimum attendance of 75% is mandatory for all
classes/events. Your consistent presence is essential for a successful
academic term/event.
Apply for leave approval
Assignments
Late Arrivals
Absentees
Leave Reaquests

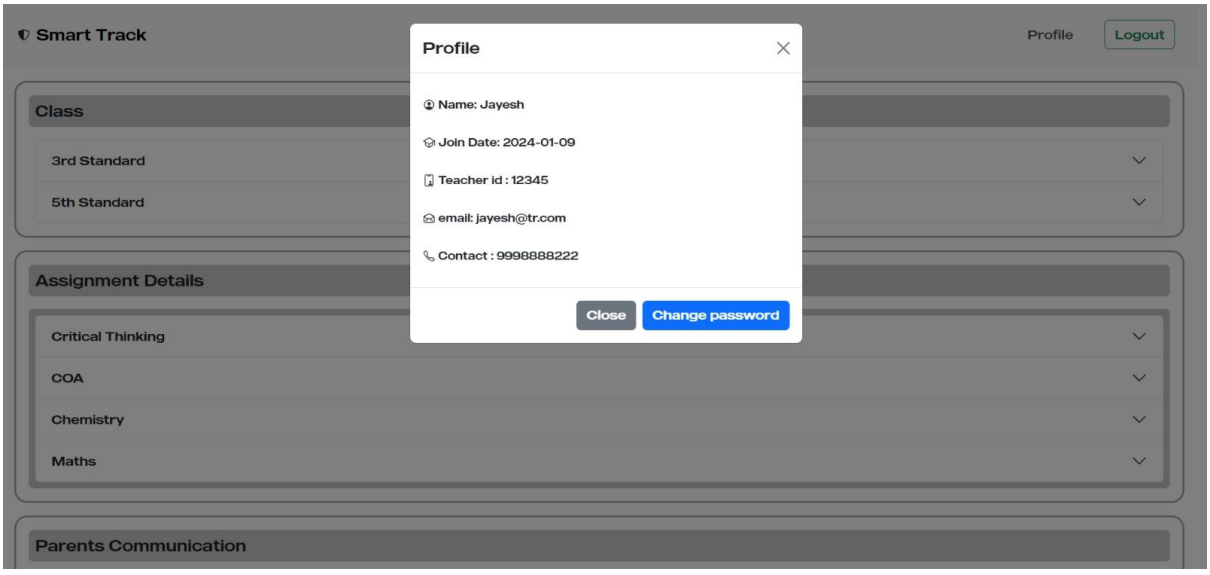

Assignment Details
1. Assignment No. 11000
Due date : 24 January 2024
tables of 12
Status : not submitted
Submit
Choose File
No file chosen
Close
Attendanc
Classes Attene
Classes Not At
Effective immed
classes/events.
academic term/
Apply for leave approval
Assignments
Late Arrivals
Absentees

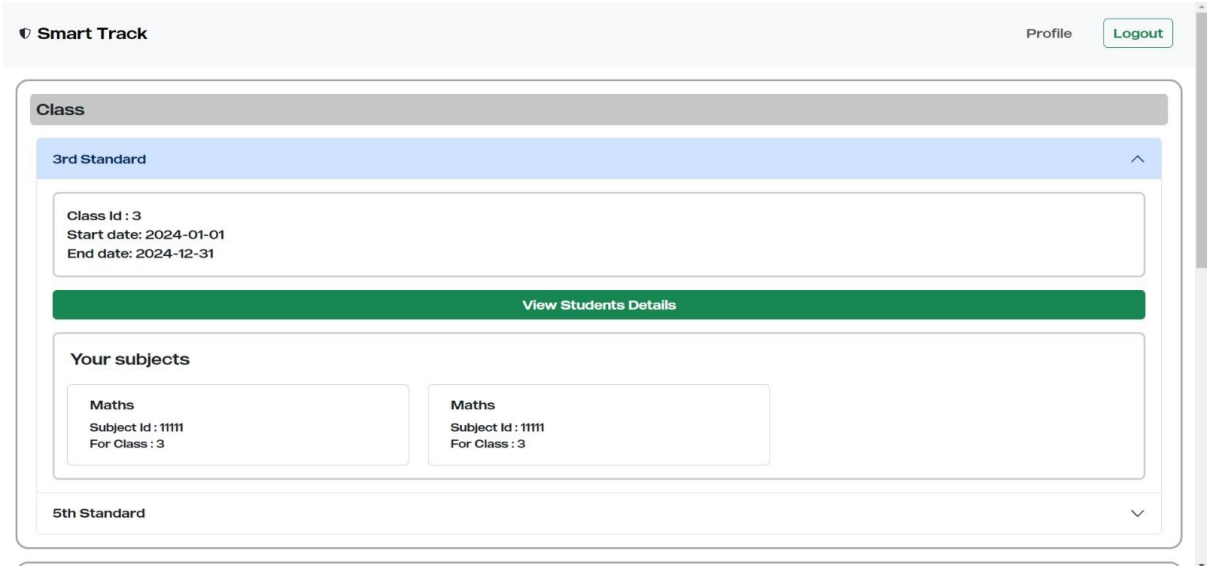

Late Arrivals
Date : 1-01-2024
Arrived at : 09:52
73 Days ago
Date : 3-01-2024
Arrived at : 11:00
71 Days ago
Date : 4-01-2024
Arrived at : 10:00
70 Days ago
Date : 14-01-2024
Arrived at : 12:00
60 Days ago
Date : 23-01-2024
Arrived at : 11:00
51 Days ago
Date : 29-01-2024
Arrived at : 11:00
45 Days ago
Date : 5-02-2024
Arrived at : 11:00
38 Days ago
Date : 12-02-2024
Arrived at : 10:00
31 Days ago
Date : 14-02-2024
29 Days ago
localhost/Final-main/Final-main/mainPage.html#

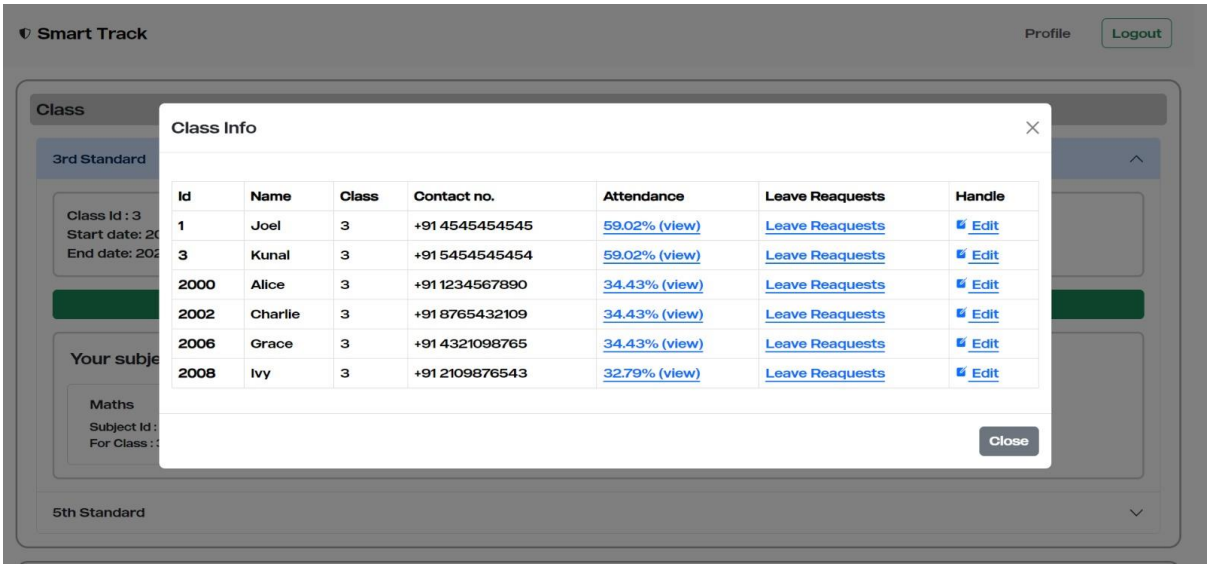

Absentees
Date : 2-01-2024
Not Requested
72 Days ago
Date : 18-01-2024
Requested And Approved
56 Days ago
Date : 19-01-2024
Requested And Approved
55 Days ago
Date : 20-01-2024
Requested And Approved
54 Days ago
Date : 21-01-2024
Not Requested
53 Days ago
Date : 22-01-2024
Not Requested
52 Days ago
Date : 24-01-2024
Not Requested
50 Days ago
Date : 26-01-2024
Not Requested
48 Days ago
Date : 31-01-2024
Not Requested
43 Days ago
Date : 2-02-2024
Requested But Rejected
41 Days ago


Absentees
Leave Reaquests
Vacation
08-01-2024
Interval: 15-01-2024 - 20-01-2024 / 5 Days
Status: Accepted
Personal Commitment
22-01-2024
Interval: 01-02-2024 - 05-02-2024 / 4 Days
Status: Rejected
Family Wedding
10-02-2024
Interval: 18-02-2024 - 22-02-2024 / 4 Days
Status: Accepted
Volunteer Work
28-02-2024
Interval: 05-03-2024 - 10-03-2024 / 5 Days
Status: Accepted
Travel Plans
15-03-2024
Interval: 20-03-2024 - 25-03-2024 / 5 Days
Status: Rejected
Study Abroad Program
01-04-2024
Interval: 10-04-2024 - 15-04-2024 / 5 Days
Status: Rejected

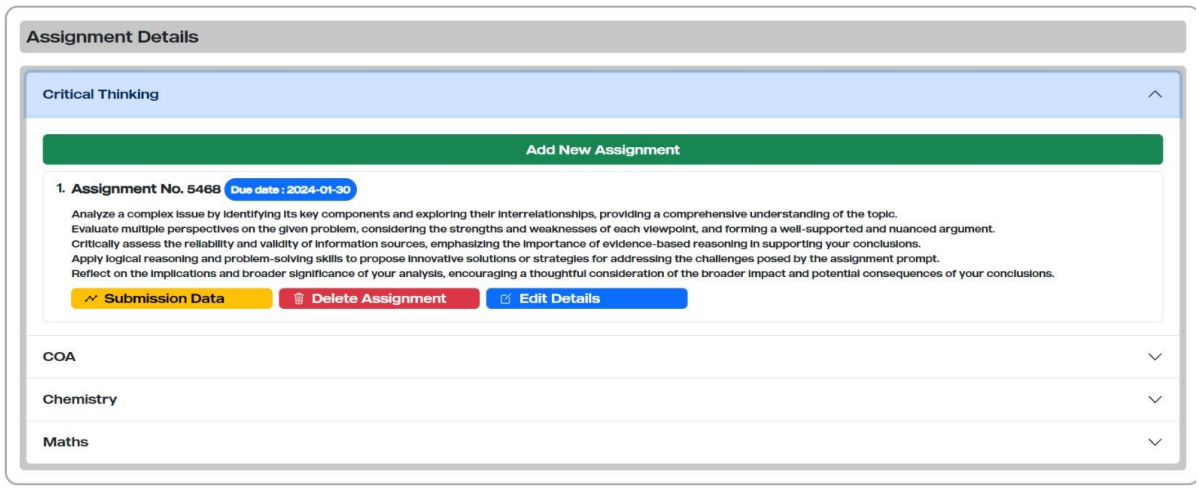

Smart Track
Profile
Logout
Class
3rd Standard
5th Standard
Assignment Details
Critical Thinking
COA
Chemistry
Maths
Parents Communication

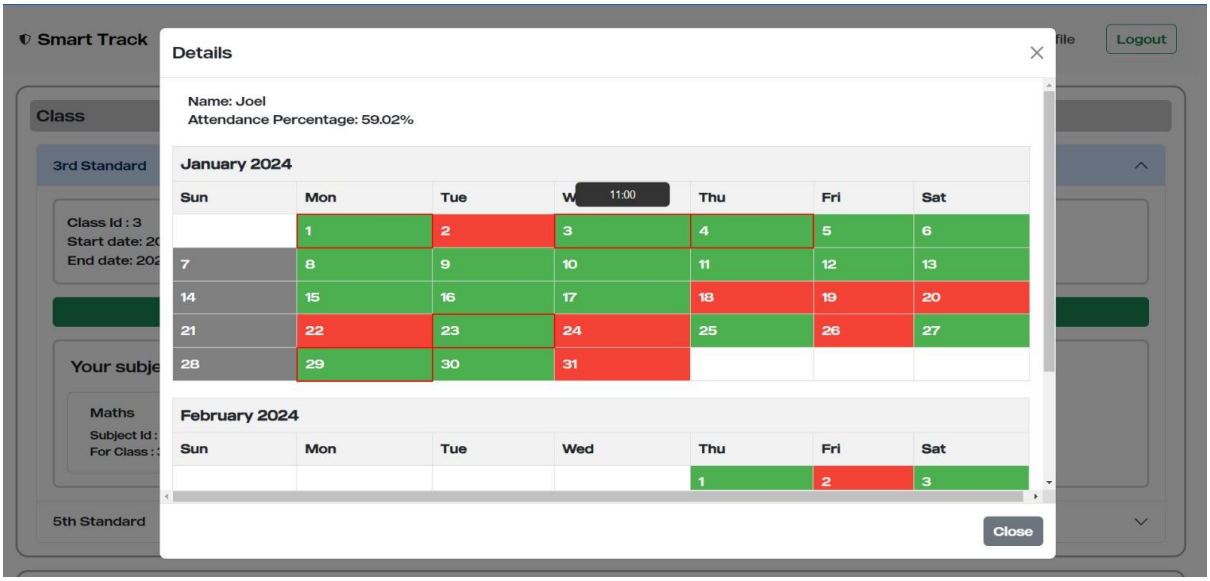

Smart Track
Profile
Logout
Profile
Name: Jayesh
Join Date: 2024-01-09
Teacher id : 12345
email: jayesh@tr.com
Contact : 9998888222
Close
Change password
Class
3rd Standard
5th Standard
Assignment Details
Critical Thinking
COA
Chemistry
Maths
Parents Communication

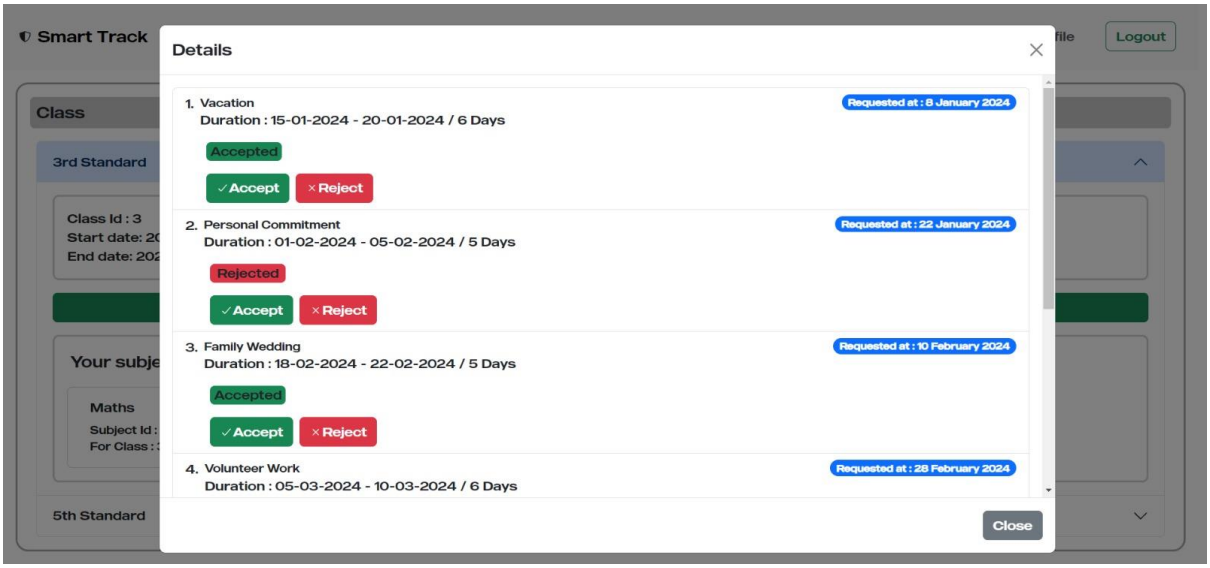

Smart Track
Profile
Logout
Class
3rd Standard
Class Id : 3
Start date: 2024-01-01
End date: 2024-12-31
View Students Details
Your subjects
Maths
Subject Id : 11111
For Class : 3
Maths
Subject Id : 11111
For Class : 3
5th Standard


Smart Track
Profile
Logout
Class
3rd Standard
Class Id : 3
Start date: 20
End date: 202
Your subje
Maths
Subject Id :
For Class :
5th Standard
Class Info
Id
Name
Class
Contact no.
Attendance
Leave Reaquests
Handle
1
Joel
3
+91 4545454545
59.02% (view)
Leave Reaquests
Edit
3
Kunal
3
+91 5454545454
59.02% (view)
Leave Reaquests
Edit
2000
Alice
3
+91 1234567890
34.43% (view)
Leave Reaquests
Edit
2002
Charlie
3
+91 8765432109
34.43% (view)
Leave Reaquests
Edit
2006
Grace
3
+91 4321098765
34.43% (view)
Leave Reaquests
Edit
2008
Ivy
3
+91 2109876543
32.79% (view)
Leave Reaquests
Edit
Close


5th Standard


Assignment Details
Critical Thinking
Add New Assignment
1. Assignment No. 5468
Due date : 2024-01-30
Analyze a complex issue by identifying its key components and exploring their interrelationships, providing a comprehensive understanding of the topic.
Evaluate multiple perspectives on the given problem, considering the strengths and weaknesses of each viewpoint, and forming a well-supported and nuanced argument.
Critically assess the reliability and validity of information sources, emphasizing the importance of evidence-based reasoning in supporting your conclusions.
Apply logical reasoning and problem-solving skills to propose innovative solutions or strategies for addressing the challenges posed by the assignment prompt.
Reflect on the implications and broader significance of your analysis, encouraging a thoughtful consideration of the broader impact and potential consequences of your conclusions.
Submission Data
Delete Assignment
Edit Details
COA
Chemistry
Maths


Smart Track
Logout
Class
3rd Standard
Class Id : 3
Start date: 2
End date: 202
Your subje
Maths
Subject Id :
For Class :
5th Standard
Details
Name: Joel
Attendance Percentage: 59.02%
January 2024
Sun Mon Tue W Thu Fri Sat
11:00
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31
February 2024
Sun Mon Tue Wed Thu Fri Sat
1 2 3
Close


Smart Track
Logout
Class
3rd Standard
Class Id : 3
Start date: 2
End date: 202
Your subje
Maths
Subject Id :
For Class :
5th Standard
Details
1. Vacation
Duration : 15-01-2024 - 20-01-2024 / 6 Days
Requested at : 8 January 2024
Accepted
✓Accept
×Reject
2. Personal Commitment
Duration : 01-02-2024 - 05-02-2024 / 5 Days
Requested at : 22 January 2024
Rejected
✓Accept
×Reject
3. Family Wedding
Duration : 18-02-2024 - 22-02-2024 / 5 Days
Requested at : 10 February 2024
Accepted
✓Accept
×Reject
4. Volunteer Work
Duration : 05-03-2024 - 10-03-2024 / 6 Days
Requested at : 28 February 2024
Close


Smart Track
Logout
Class
3rd Standard
Class Id : 3
Start date: 2
End date: 202
Your subje
Maths
Subject Id : 11111
For Class : 3
Maths
Subject Id : 11111
For Class : 3
5th Standard
Details
Id 1
Id is not editable*
Name Joel
Mobile 4545454545
Class 3
3rd Standard (ID:3)
Submit
Close

GANTT CHART

TASK NAME	START DATE	END DATE	DURATION
"Arduino Student Attendance Tracker"	16/07/2023	10/03/2024	238
Analysis	19/07/2023	13/08/2023	25
Scope of the project	19/07/2023	13/08/2023	25
Software Requirement Specification	19/07/2023	13/08/2023	25
Feasibility Study	19/07/2023	13/08/2023	25
Analysis Complete	19/07/2023	13/08/2023	25
Design	17/09/2023	30/09/2023	13
ERD	18/09/2023	28/09/2023	10
Activity Diagram	20/09/2023	27/09/2023	7
Use Case Diagram	20/09/2023	27/09/2023	7
Complete	27/09/2023	30/09/2023	3
Implementation	15/10/2023	22/01/2024	99
User Interface	15/10/2023	17/10/2023	2
Coding	05/11/2023	22/11/2023	17
Database	07/11/2023	26/11/2023	19
Hardware Assembly	04/01/2024	11/01/2024	7
Software Setup	16/01/2024	22/01/2024	6
Testing	10/02/2024	08/03/2024	27
Unit Testing	15/02/2024	21/02/2024	6
Validation Testing	23/02/2024	27/02/2024	4
Integration Testing	23/02/2024	27/02/2024	4
Arduino Response	26/02/2024	08/03/2024	11