User Manual

for

S.M.A.R.T.E.X

Version 2.0

Prepared by

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1.   Introduction

An Automated Entry Exit System (AEES) is a software solution used to track and manage the movement of people in and out of an area. The purpose of the software is to provide real-time monitoring and control of access to a facility, while also collecting data on the comings and goings of individuals. Some benefits of an AEES include increased security and safety by ensuring that only authorized individuals have access to a facility, improved efficiency by automating the process of checking in and out, and the ability to collect data on who is entering and exiting a facility and when.

Product scope is limited to college but can also be used for organization that need to keep the data of employee's entry and exit and their time of entry and exit. But mostly due to the current manual system of entry and exit which is tedious and tiresome, this system is most suitable for the college entry exit as it is clean, fast and easy.

The main objectives of an AEES are to:

- Control access to a facility by managing the flow of people in and out.
- Monitor the comings and goings of individuals in real-time.
- Collect data on who and when is he/she entering and exiting the facility.
- Increase security and safety of the facility.

The project's goal would be to develop an efficient and secure system for regulating movement on and off campus while also keeping the necessary records for future access by authorised users.

As this is a developing document, it is subject to change. It is currently incomplete and will need further modification. As development advances and the system description gets more detailed, requirements may be updated, and new requirements added. The document is intended for requirements engineer, domain expert, developer and project manager, testers, and documentation writers. The rest of the SRS document contains information about product overview, design, implementation and convention, constraints, and Assumptions. This document also contains detailed information about functional and non-functional requirements for the software and the External Interface details. Some acronyms and terms used are as follows:

- Secure: System must allow only the authorised user to make entry or exit from the area.
- Automated: The system must update entry exit detail with minimum interaction from user. Like by just reading the student ID-card, system should make all the necessary entry in the table and allow access to move in or out of the campus.
- AEES: Automated Entry Exit System.
- SMARTEX: Smart Automated Entry Exit System.
- Access control device: We are using bar-code reader or a mobile phone for now.

1.1   Overview

From a product perspective, an Automated Entry Exit System (AEES) is designed to provide secure and efficient access control for a facility. The system typically consists of a variety of components, including access control devices such as barcode readers or biometric scanners, a central control unit for managing access, and software for collecting and analyzing data.

The system interacts with the environment in several ways. At the point of entry, individuals present their credentials, such as an ID card or biometric data, to the access control device. The device then communicates with the central control unit to verify the individual's identity and authorize or deny access. Once access is granted, the

individual can enter the facility. The system also keeps track of the time of entry and exit of individuals.

The main objectives of an AEES are to:

- Control access to a facility by managing the flow of people in and out.

- Monitor the comings and goings of individuals in real-time.

  Collect data on who and when is he/she entering and exiting the facility.

  Increase security and safety of the facility.
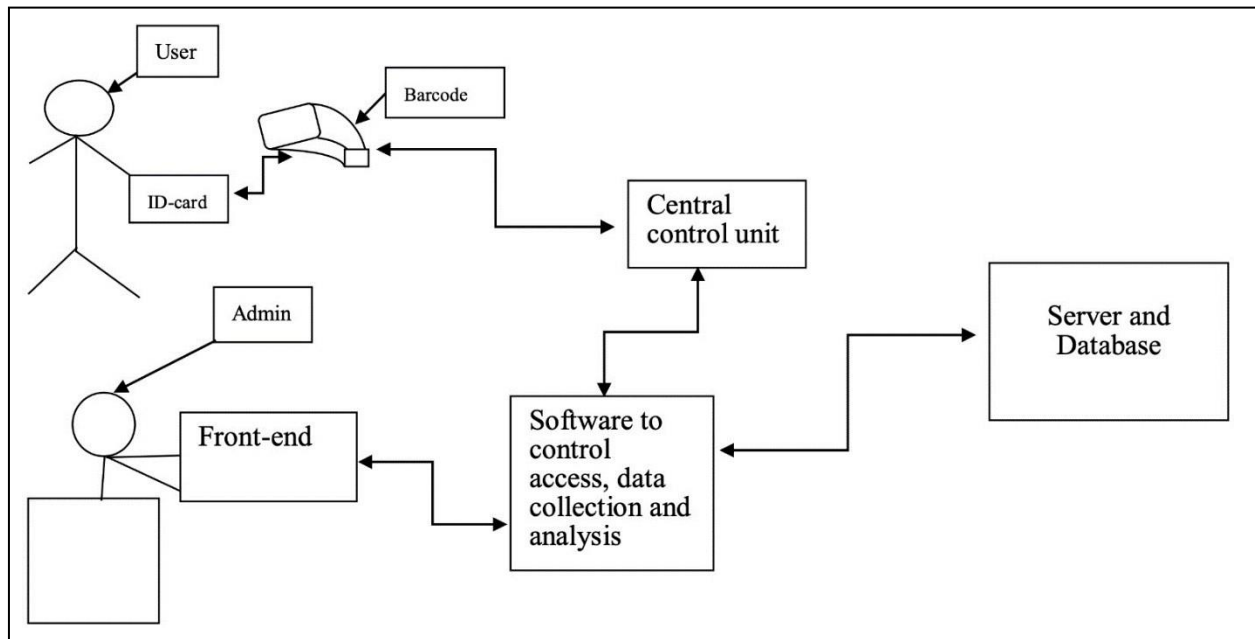
The above diagram simply represents what our software system does and how it does it.

This User Manual (UM) provides the information necessary for users to effectively use the Campus Entry Exit Automated System (CAEES).

2.   Getting Started

2.1   Cautions & Warnings

The CAEES system is only for use inside IIT Kanpur right now, and as it stores personal information of the students it should be secure, we have taken care of that by making sure that the system only works on IITK intranet, anyone outside the system cannot access it. Also an unauthorized user (not a guard/admin) cannot access the system as every guard and admin have their own login credentials which are only known to them. There are no penalties as such for now.

2.2   Set-up Considerations

The set-up for using the web system is not complex. We simply need a computer device which should be connected to IITK intranet and a scanner device to scan the ID cards. We also need to download the app Barcode to PC in both our scanning device (preferably a mobile phone) and the PC. Website and docs: https://barcodetopc.com/

2.3   User Access Considerations

The current users for the CAEES system are guards and admins, both can only access the system only if their login credentials are correct. The admin has more accessibility to some features like daily stats, guard/admin password change, new guard/admin than the guard.

2.4   Accessing the System

For accessing the system, the guard or admin will require a username and a password which they can set up using the admin dashboard. If they forget the password, they can change it too using the admin dashboard.

2.5   System Organization & Navigation

A general walk through of the system from initiation through exit is as follows:

Installation:

No installation is required for our web software system, it can be directly launched on any computer system by a URL but being a security software, it can of course be accessed by only the authorized personnel, moreover we have designed it such that it will only work when accessed using IITK intranet, outside that the URL will not work.

Logging in:

The CAEES system when launched via the URL, starts with a login window where the admin or guard will put in their credentials to get access to the system.
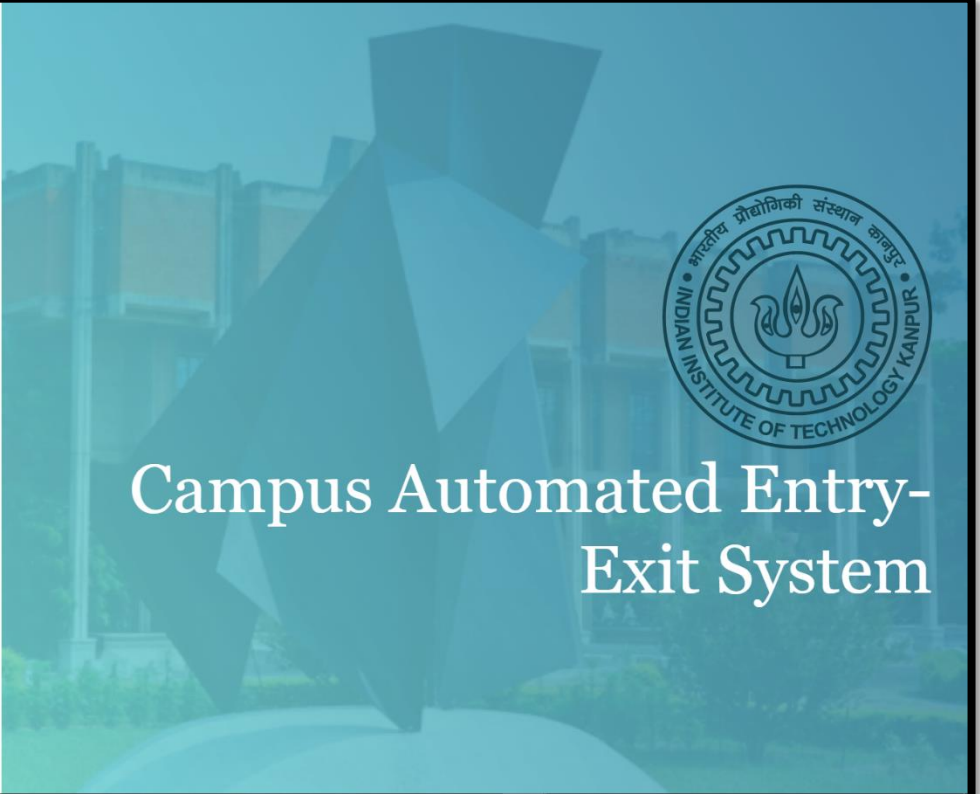
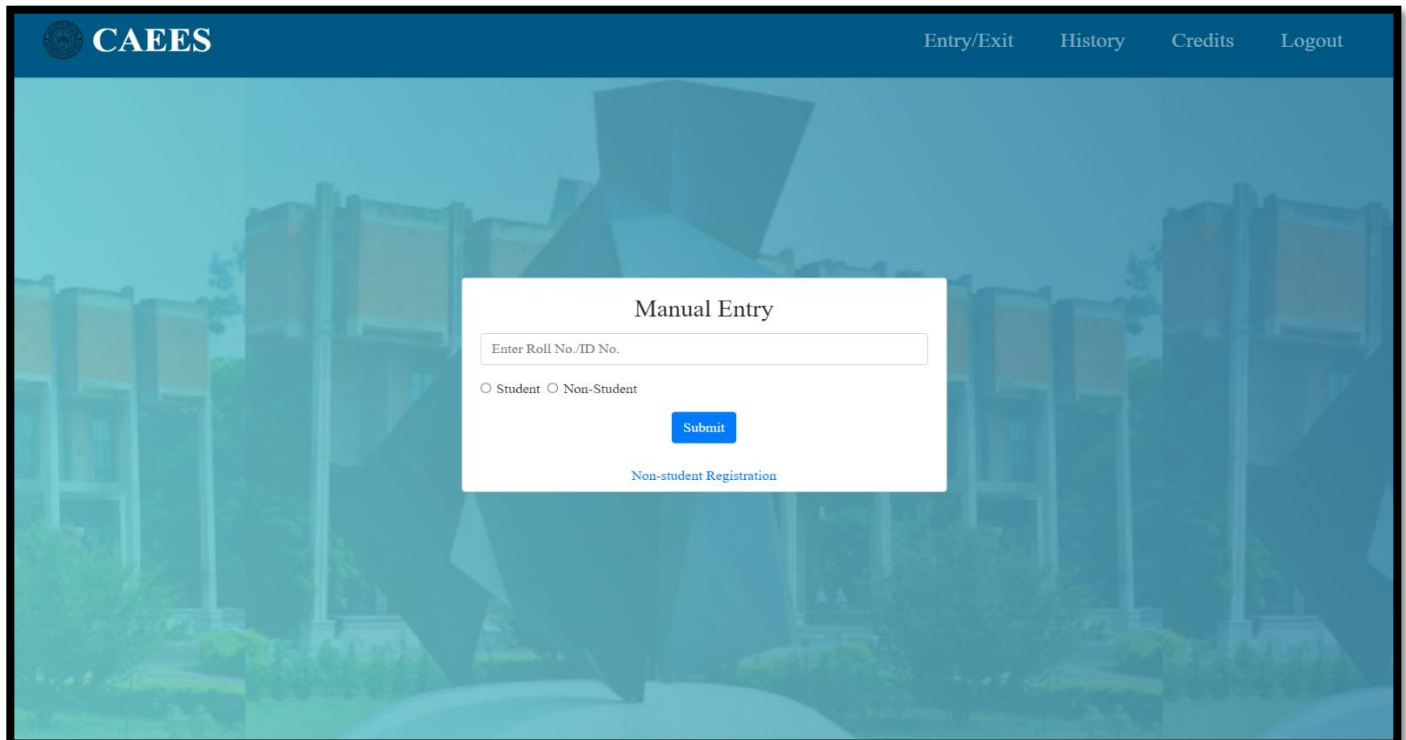## Scan Page:

After successful entry the user will reach a scan page which is essentially the homepage of the system. Except for the login page every other page has a common header with a navigation bar on the right side which has four buttons which lead to different pages of the web software. This page as the name suggests is used for the scanner output and then redirects accordingly when the ID card is scanned. If for some reason the scanner does not work there is a link which leads to a manual entry page where Roll Nos or ID numbers can be entered manually to fetch the information of the people entering or exiting the campus.
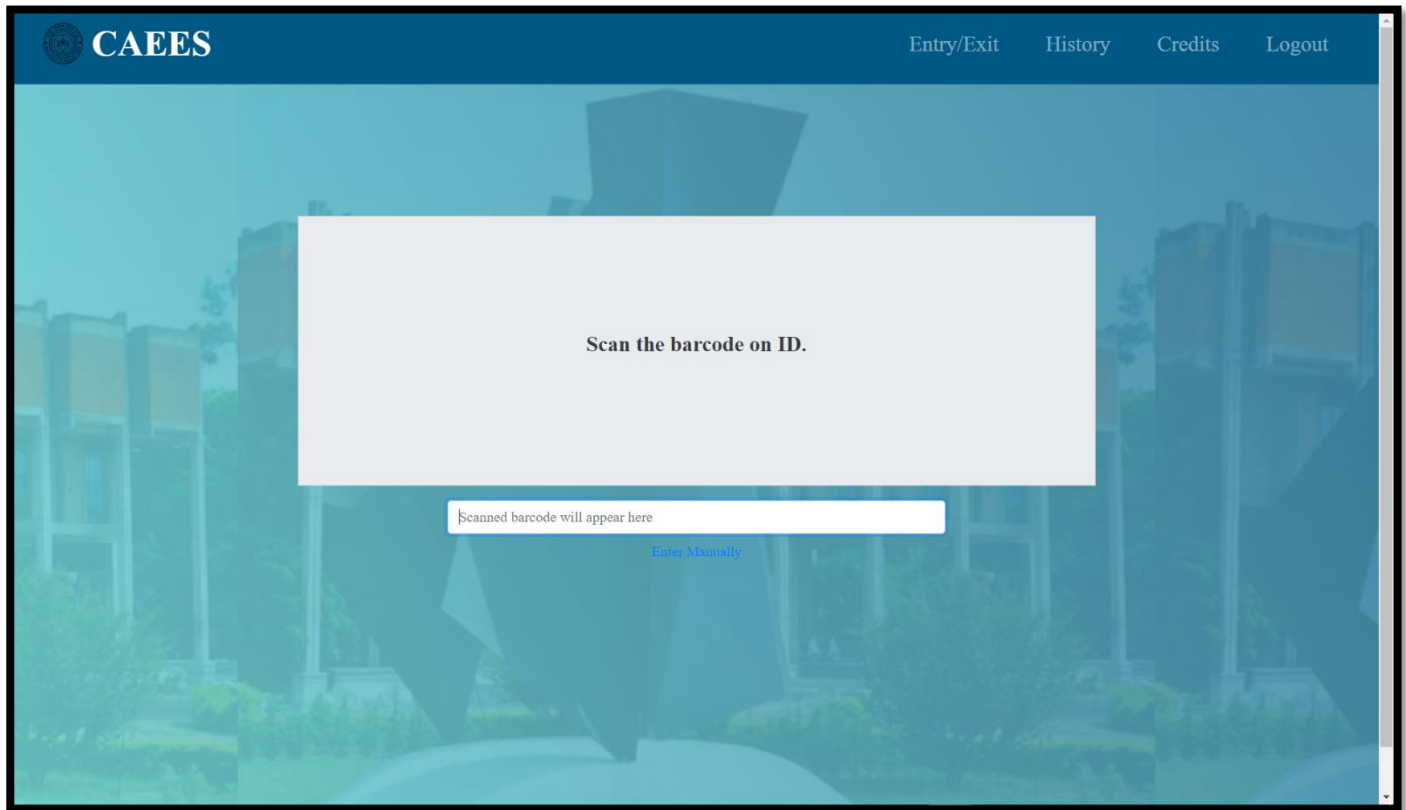
Manual Entry:
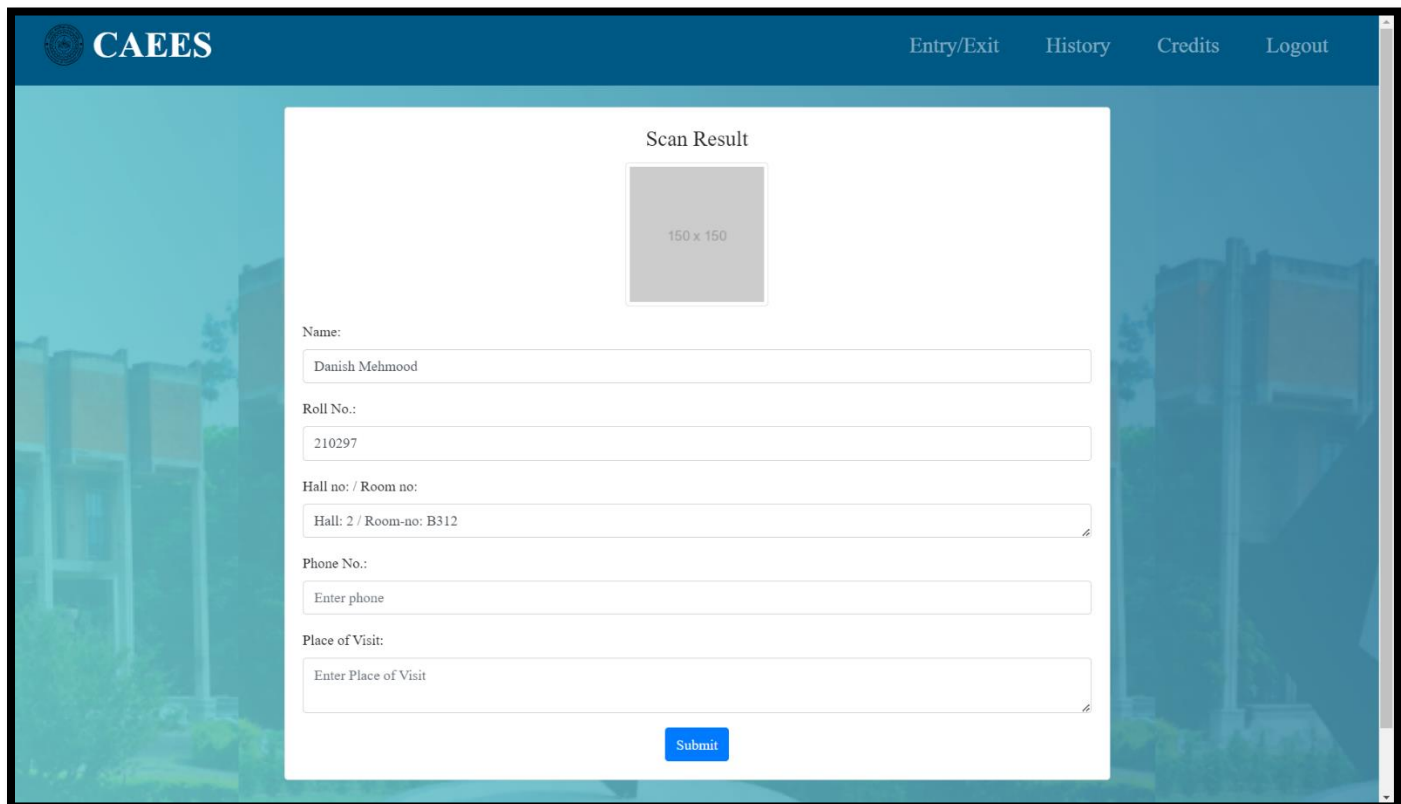
If for some reason the scan does not work, the guard can enter the roll no. or ID number of the person entering or exiting the campus manually.

Success Page:

After successfully scanning, the user reaches to a success page which shows the details of the person exiting/entering the campus. Here the exiting person can put in their place of visit and click on submit.

New non-student registration:

For people who are not students to enter the campus for the first time, they have to register themselves with the system, which will help them in the future for a smoother entry exit.

History Page:

After successful entry/exit the info of the person exiting will be added as a new field in the History table which shows previous entry/exits and in-time will be updated for the person who is entering the campus. Here we can search for any person, filter and sort the table, edit/delete a field as well as add new fields by the various buttons. It also shows the status of a person, if he/she is in or out of the campus.

S.No.	Status	UserID/Roll No./Name	Address/Room No./Hall	Place of Visit	Out Time/Gate	Action	
1	IN	GUID123456781234/Test Name	Test Address	H2/B312	2023/4/18_16:14	Delete	Edit
2	OUT	210755/Abhishek	B313/2	h1	2023/4/18_16:18:25	Delete	Edit
3	OUT	GUID002/Souvik	Hno 20 Road no 1 Kalyanpur Kanpur	Rawatpur	2023/4/17_20:21	Delete	Edit
4	IN	170353/Kumar Gourav Songara	E354/2	Hall 2	2023/4/18_18:16:19	Delete	Edit
5	IN	180337/Kalasariya Kamleshbhai Maganbhai	G209/9	Hall 9	2023/4/15_20:31:57	Delete	Edit
6	IN	180337/Kalasariya Kamleshbhai Maganbhai	G209/9	Hall 9	2023/4/15_20:37:58	Delete	Edit
7	IN	210755/Abhishek	B313/2	H1	2023/4/18_9:16:11	Delete	Edit

Credits page:

This is a team credits page providing info about the team members who contributed in this project. It consists of beautifully designed info cards which have a cool animation when mouse/cursor is hovered upon them.
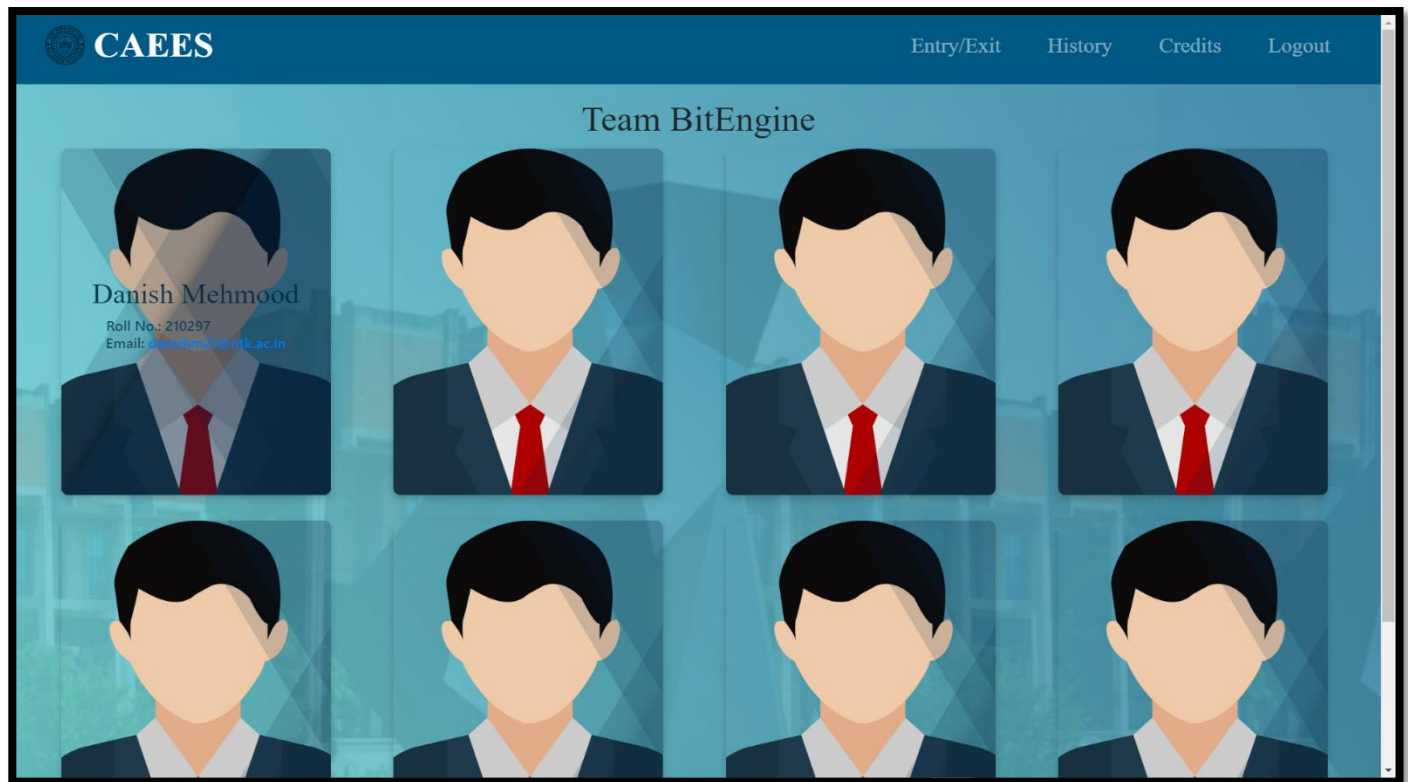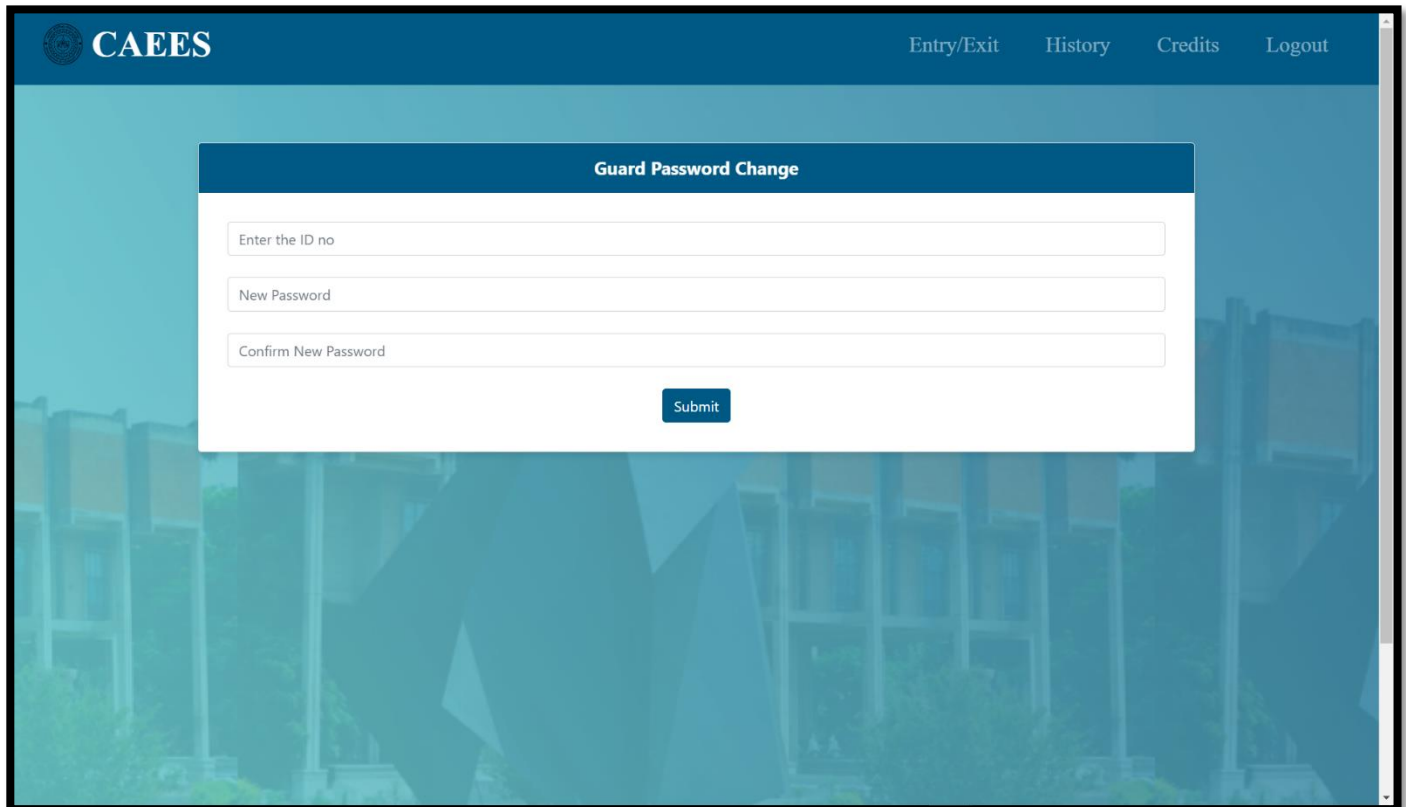
Admin Dashboard:
This is a dashboard for admin only which shows daily stats as well has functionalities like changing guard/admin password or adding new guard/admin.
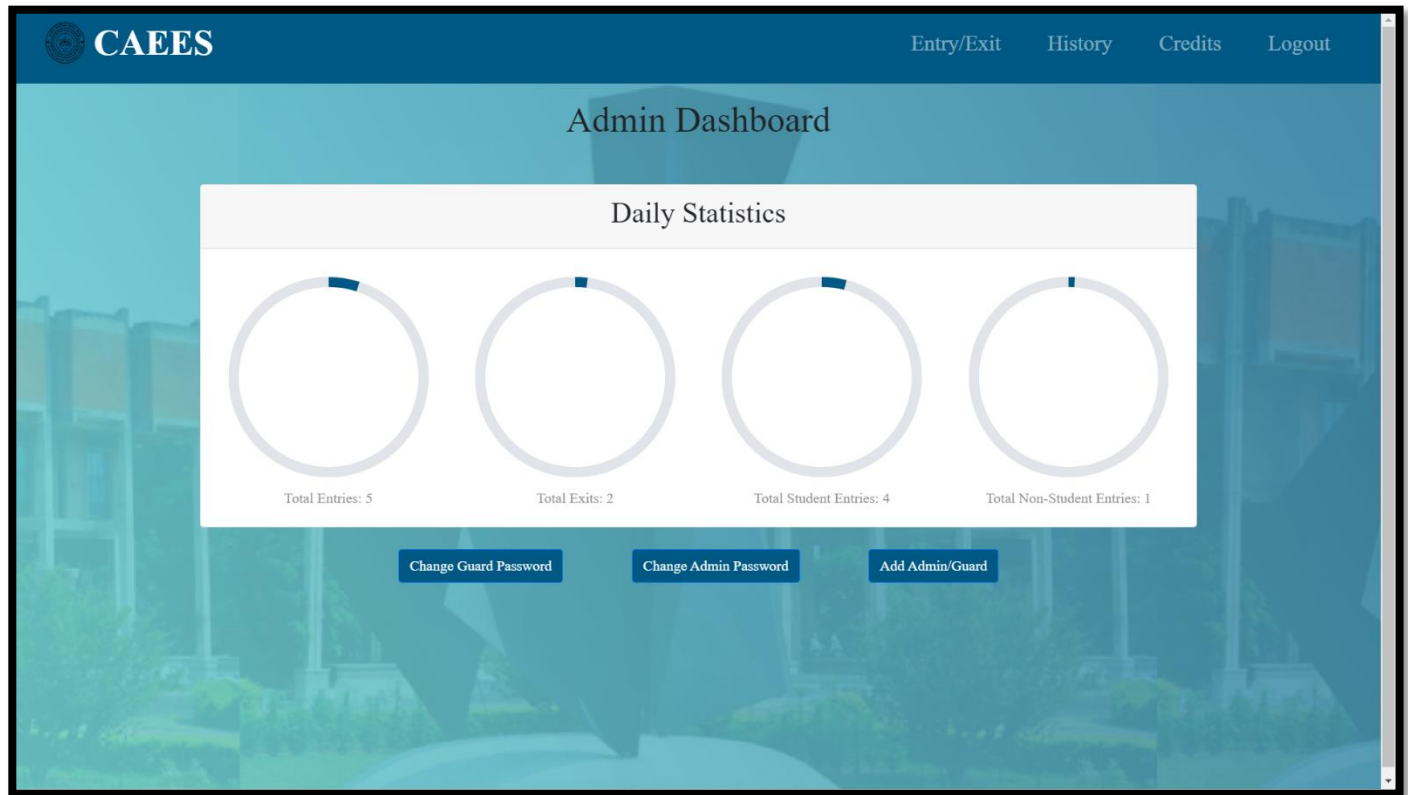
Changing guard/admin password:
This is a admin only functionality that helps change guard/admin password if they forget it.

New Guard/Admin:
This is also an admin only functionality, helps in smooth introduction of new guard/admin into the system.

Logout:

The logout button in the navbar logs the admin or guard out of the software for other person to login with their own credentials.

2.6   Exiting the System

Guards/admins just must click on the logout button and confirm logout to exit the system, the system will then show the login page again for other people to login

3.   Using the System

The Automatic Entry-Exit System is a modern security system designed to enhance the security and simplify student movement across the campus by controlling and monitoring the movement of students automatically. This system is easy to use and requires authorization to access and requires students to present their ID cards at the movement location. This manual will guide you through the steps required to use the system.

3.1   Authorization and Login

Login to the System: To use the Automatic Entry-Exit System, you need to login first. Follow these steps to login

I.   Each authorized security guard will be given a Username and GuardID. Contact your supervisor or administrator to obtain your login credentials.
II. Use your login credentials to login to the system. Your login credentials consist of your Username and GuardID.
III. Fill in the username in the Username Field of the login page. Your username is case-sensitive, so ensure that you enter it correctly.
IV. In the password section, fill in the GuardID. Your GuardID is also case-sensitive, so make sure that you enter it correctly.
V.   The system will grant you access to the entry-exit point if you are authorized to access it. If you are not authorized, the system will deny you access.

3.2   Entry Exit functionality

System for movement: To use the Automatic Entry-Exit System, follow these steps

I)   Scan the Student ID card in the barcode scanner. The barcode scanner will scan the ID card and extract the student's information, including their name, roll number, and photograph. If the scanner does not work, proceed to **step II**.
II)   If the barcode scanner does not work, enter the roll number of the student manually. The system will validate the roll number and extract the student's information, including their name and photograph.
III) The system will display the basic information of the students, including their name, roll number, and photograph. Check the details to ensure that they are correct.
IV)   Fill in the place of visit in the Place of visit section. Enter the name of the location that the student intends to visit.
V)   Press the Submit button to confirm the entry of the student. The system will update the Entry-Exit information of the student in the database.
VI)   The system will redirect you to the history page, where you can add another entry or view the list of exited students.

3.3   Details and History

Using the History Section: To use the History section of the Automatic Entry-Exit System, follow these steps

I. The History section contains information about students who have exited the campus, including their name, roll number, place of visit, and the time at which they exited the campus. This information is stored in the system's database and can be accessed by authorized personnel.
II. If the entry in the database is faulty or needs verification, you can refer to the History section to check the information. The information stored in this section is accurate and can be used as a reference to verify the entry.
III. The admin may choose to edit and update the details of the entry or delete it if required. This can be done by selecting the entry from the list and clicking on the appropriate button. The system will prompt the user to confirm the action before making any changes to the database.

3.4   Adding New Guards and Admins

Using the add new admin: To add new guards or admins to the system, follow these steps:

1. Access the system's login page with your admin credentials.
2. Once you are logged in, navigate to the "Add New Admin/Guard" page.
3. Fill out the HTML form provided with the new user's details, including their name, contact information, and other relevant information.
4. Once you have entered all the necessary details, click the "Submit" button.
5. The system will then verify the new user's details and generate a unique user ID for them.
6. Once the user ID has been generated, it will be displayed on the screen, along with a confirmation message that the new user has been successfully added to the system.

Note: Only users with admin credentials can add new guards or admins to the system. If you do not have admin credentials, please contact your system administrator for assistance.

This feature allows you to easily add new guards or admins to your system, helping you to manage your security operations more efficiently. If you have any questions or concerns about this feature, please contact your system administrator for assistance.

3.5   Adding New General User

Add new user : To add new general users to the system, follow these steps:

1. Access the system's login page with your admin/guard credentials.
2. Once you are logged in, navigate to the "Add New User" page.
3. Fill out the HTML form provided with the new user's details, including their name, contact information, and Aadhaar number.
4. Once you have entered all the necessary details, click the "Submit" button.
5. The system use the new user's Aadhaar number and other details provided in the form.

6. Once the details have been verified, the system will generate a unique user ID for the new general user.
7. The new user ID will be displayed on the screen, along with a confirmation message that the new user has been successfully added to the system.

Note: Only users with admin and guard credentials can add new general users to the system. If you do not have valid credentials, please contact your system administrator for assistance.

3.6   Change Password

Changing Admin and Guard Passwords:

To change the password for an admin or guard account, follow these steps:

1. Log in to the system with your current credentials.
2. Once you are logged in, navigate to the "Change Password" page.
3. Enter your current password, followed by your new password, in the provided fields.
4. Confirm your new password by re-entering it in the confirmation field.
5. Click the "Submit" button to save your new password.
6. If your password change was successful, you will receive a confirmation message on the screen.

Note: It is important to choose a strong and secure password for your account to ensure the safety and security of your data. Avoid using common or easily guessable passwords.

4.   Troubleshooting & Support

This section provides information on how to recover from errors and the procedures or steps to follow when an error condition is encountered. The section is organized into sub-sections as follows:

4.1   Error Messages

The following are common error messages that a user may encounter/face when using this system. The list is not exhaustive, and additional error messages may be added in future versions of this system:

1. **"Invalid admin id or password":** This error message will display when the admin will enter an incorrect/not valid admin id or password. The corrective action is for the admin to re-enter their admin id and password, ensuring that they are entered correctly.

2. **"Server not found":** This error message is displayed when the server hosting the system is not accessible. The likely cause of this error is that the server is down, or there is a network issue. The corrective action is to wait for a few moments and try again later.

3. **"Data not found":** This error message is displayed when the system cannot find the data that the admin/user has requested. The likely cause of this error is that the data has been deleted/edited. The corrective action is for the admin to check if the data is available and ensure that they have entered the correct required data.

4. **"Student not found":** This error message is displayed when the admin enters an incorrect/ invalid roll number. The corrective action is for the admin to re-enter their correct roll number.

5. **"Information not found":** This error message is displayed when bar code reads input wrongly. The corrective action is for the admin to try manual entry.

6. **"Invalid guard id or password":** This error message will display when the guard will enter an incorrect/not valid guard id or password. The corrective action is for the admin to re-enter their guard id and password, ensuring that they are entered correctly.

7. **"Password not matched":** This error message will display when admin or guard will try to change his password and he will enter the new password and confirm password (new password different from confirm password).

8. **"Data not updated":** This error message will display when guard will try to change the data of user in history page, but he/she will request the such data which will not available on server. The corrective action is for guard to re-press the edit button and after that re-request with correct input values in form in update entry-exit page.

9. **"Data not deleted":** This error message might be display when guard will try to delete the required row of history data of particular day, but due to some error like network error, server error guard would not be able to do this. The corrective action is for guard to re-try the delete button.

10. **"Invalid Roll No./Id":** If student or non-student enters incorrect roll no./id or roll no./id is not available in database then he/she can get this error message. The corrective action for user is to fill the add user form first and then try to login.

11. **"Failed to add new admin/guard":** This error message can be display when admin or guard try to add itself first time. Reasons of this error message can be poor internet, unexpected inputs etc. The corrective action is for guard or admin to re-enter his/her information into new admin form.

4.2   Support

If you encounter an error, any technical problem or have a question about the system, please contact our support team at the phone number (given below in the table). You can also email us at our email address (given below in the table). Our support team is available 24/7 to solve your issues.

Table 1 - Support Points of Contact

Contact	Organization	Phone	Email	Role
Danish Mehmood	*BitEngine*	*7006002061*	*danishm21@iitk.ac.in*	*Developer*
Rikesh Sharma	*BitEngine*	*6204423497*	*rikesh@iitk.ac.in*	*Developer*
Ajeet Meena	*BitEngine*	*9027552954*	*ajeetm21@iitk.ac.in*	*Developer*
Kumar Gourav	*BitEngine*	*8770250993*	*songara@iitk.ac.in*	*Developer*
Anuj Kumar	*BitEngine*	*7726997331*	*kanuj20@iitk.ac.in*	*Developer*
Avinash Saini	*BitEngine*	*9680770784*	*avinashs20@iitk.ac.in*	*Developer*
Lohit P Talavar	*BitEngine*	*7676347072*	*lohitpt21@iitk.ac.in*	*Developer*
Pratiksha Dawane	*BitEngine*	*7058795251*	*ppdawane21@iitk.ac.in*	*Developer*

To report a problem with the system, please provide the following information to our support team:

1. Your username, roll number and contact detail.

2. A description of the problem and the error message (if possible).

3. The steps you took before encountering the problem.

4. Any relevant proofs like screenshots or error logs.

Our support team will investigate the issue and provide you with a resolution as soon as possible.

Appendix A: Glossary

The following table provides definitions for terms used in this document that may be unfamiliar to readers of the document.

Table 2 - Glossary

Acronym	Term	Definition
S.M.A.R.T.E.X	Smart Entry Exit	It's the name of the software system
CAEES	Campus Automated Entry Exit System	The name of the SMARTEX system for Campus
UM	User Manual	This document