

## PROJECT REPORT

*Project Name:*

# Department Management System

*Course No : CSE 612*

*Course Title : Software Development*

*Date of Submission : 24/01/2023*

*Submitted by*

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## **Definition and Introduction:**

- A Department Management System is a type of software that is used to manage the operations and activities of a specific department within an organization. Department management systems in a university can include tasks such as tracking student and staff performance, managing projects and tasks, scheduling meetings and appointments, and maintaining departmental budgets and financial records.

Department management systems can also include tools for communication and collaboration between teachers and students, such as instant messaging and email, as well as document management and storage capabilities.

A department management system is a powerful tool that enables organizations to effectively manage and organize the operations and activities of their department. This system provides a centralized platform for storing and sharing information, managing projects and tasks, and tracking student and staff performance of a department.

The main goal of a department management system is to streamline the operations and activities of a department, making it more efficient and effective. By centralizing information and providing a common platform for communication and collaboration, department management systems can help to improve communication and coordination within the department and across the organization as a whole.

Overall, a department management system helps to streamline the operations and activities of a department, making it more efficient and effective, allowing organizations to achieve their goals more effectively.

## **Objectives:**

The objectives of a department management system in a university may include:

1. **Streamlining operations:** The system can be used to automate and simplify departmental processes, such as course scheduling and registration, budgeting, and user performance evaluations.
2. **Improving communication and collaboration:** The system can provide a centralized platform for communication and collaboration among departmental staff, faculty, and students.
3. **Tracking student progress:** The system can be used to track student progress, including grades, attendance, and academic performance, which can be used to identify areas where students may need additional support.
4. **Managing resources:** The system can be used to manage departmental resources, such as equipment and supplies, and to track and allocate funding for research and other activities.
5. **Generating reports:** The system can be used to generate reports on departmental performance, including financial reports, student progress reports, and research activity reports.

6. **Compliance:** The system can be used to ensure compliance with university policies and regulations and to meet government reporting requirements.

Overall, a department management system in a university can be used to enhance the efficiency and effectiveness of departmental operations, while also helping to improve the student experience and support the university's research and academic goals.

## **Benefits at a glance:**

- User Friendly
- Greater Processing Speed
- Better Accuracy and Improvement Consistency
- Cost-Effective Assistance
- Improved Efficiency
- Provides a Stable System
- Effective Inventory Management

## **Requirements:**

### **Software Requirements:**

- **Operating System:** Windows/Linux(Not for Android)
- **IDE:** Visual Studio Code, Pycharm.
- **Language:**      **Front-end:** HTML, CSS, BOOTSTRAP.  
                          **Back-end:** Python, Django, JQuery, SQLite.

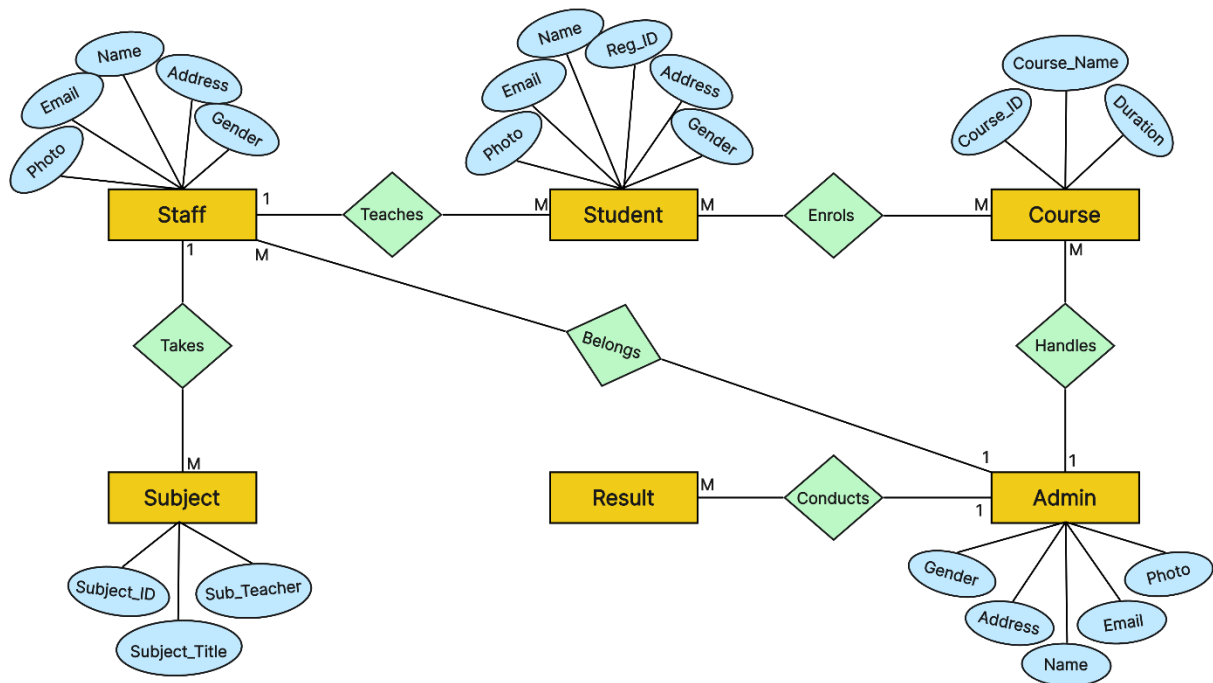
### **Hardware Requirements:**

- **Device:** Laptop/Desktop
- Internet Connection.

# ER-Diagram

An ER-Diagram (Entity-Relationship Diagram) is a type of diagram that is used to model the data and relationships within a system or organization.

It is a visual representation of entities (or "things") and the relationships between them.



ER-diagrams are commonly used in database design and can help to identify data requirements, understand the relationships between data elements, and model the overall structure of a database. They can also be used to communicate the design of a system to stakeholders and developers, and to identify potential issues or inconsistencies in the data model.

Overall, ER-diagrams provide a simple yet powerful tool for modeling and designing the data and relationships within a system, making it easier to create accurate and efficient databases.

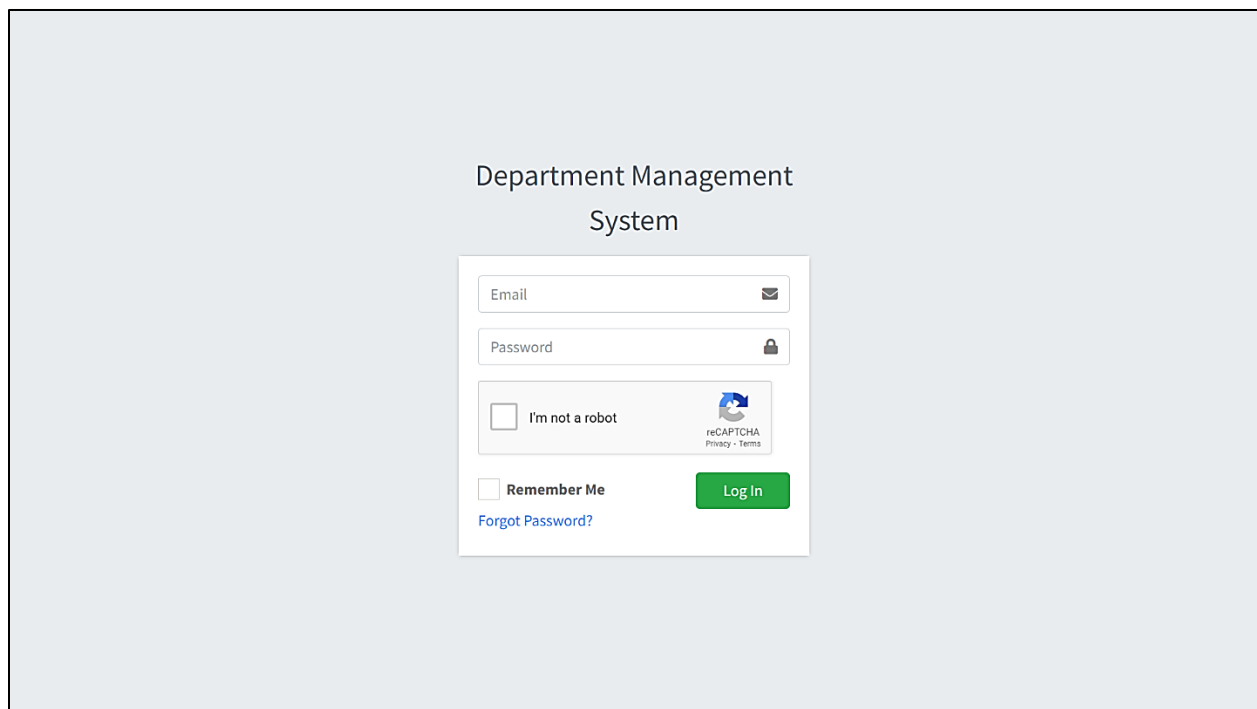
# Functionalities:

## Login System:

A login system is required to provide a way for users to identify themselves and gain access to restricted areas or resources on a website or application. This allows the system to tailor the user's experience, provide personalized content, and enforce security by only allowing authorized users to access sensitive information or perform particular actions. Besides, a login system also allows tracking and monitoring of user activity and enables features such as account recovery and user management.

In our application, We have provided a login system where three types of users can log in according to their own view.

1. **Student Panel Login** (Required Email and Password)
2. **Staff Panel Login** (Required Email and Password)
3. **Admin Panel Login** (Required Email and Password)

The image shows a login interface for the 'Department Management System'. The title is centered at the top. Below it is a white login box containing an 'Email' input field with an envelope icon, a 'Password' input field with a lock icon, a reCAPTCHA 'I'm not a robot' checkbox, a 'Remember Me' checkbox, a 'Forgot Password?' link, and a green 'Log In' button.

## Home Page: (From Admin's View)

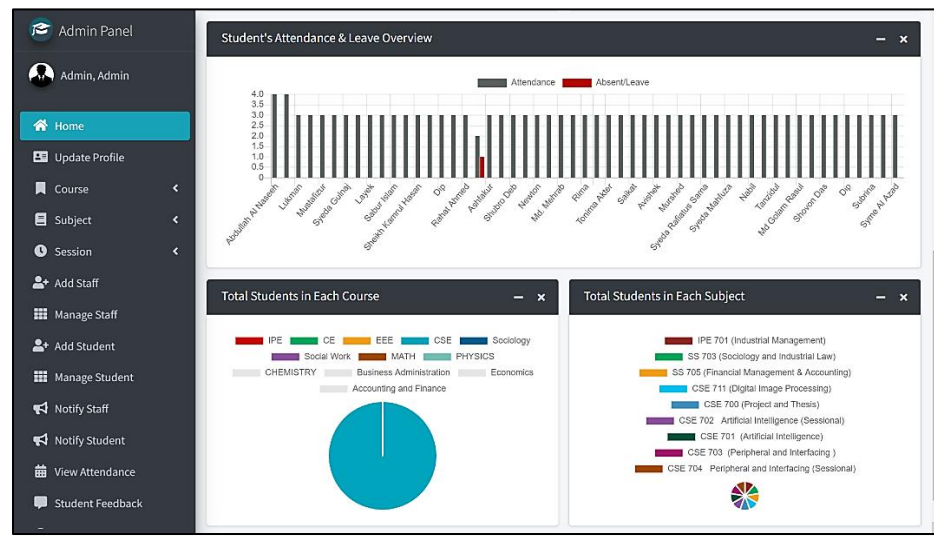
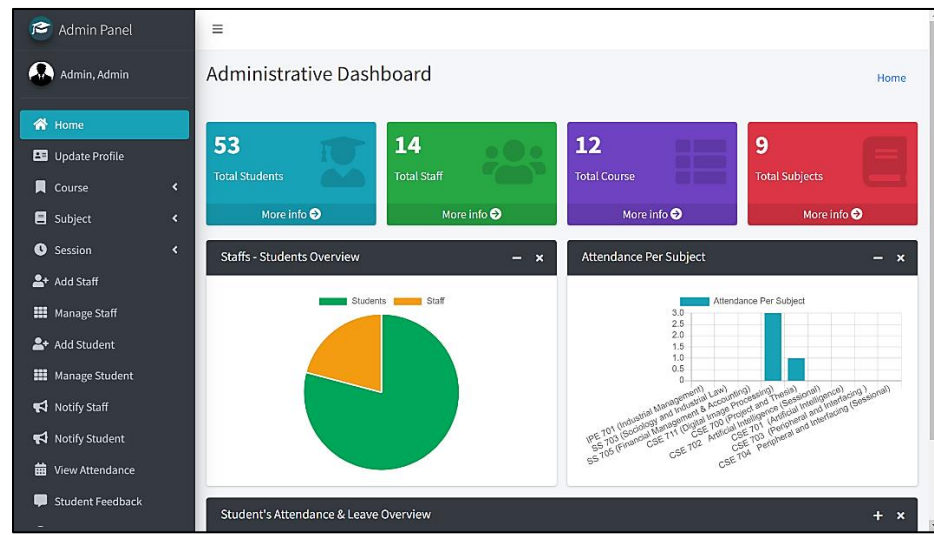
We will now log in to our application using the email and password of the admin to see what facilities we have as an admin.

This is the first page shown to the admin after logging in. The admin can see the overall records of the department like how many students and staff there are in the department at the current time. The number of courses and subjects is also shown to the admin. The admin can update his profile

and manage students, staff, courses, subjects, sessions, etc. from this page which is shown in the sidebar.

And from here the admin will be able to:

- Update Profile, Course-Add Course-Manage Course, Subject-Add Subjects-Manage Subjects, Session-Add Session-Manage Session, Add Staff, Manage Staff, Add Student, Manage Student, Notify Staff, Notify Student, View Attendance, Student Feedback, Staff, Feedback , Student Leave, Staff Leave



**Update Profile:** Here the admin can change or update his profile details like name, email, password, photo, address, etc.

The screenshot shows the 'View/Edit Profile' form in the Admin Panel. The left sidebar contains the following menu items: Admin Panel, Admin, Admin, Home, Update Profile (highlighted), Course, Subject, Session, Add Staff, Manage Staff, Add Student, Manage Student, Notify Staff, Notify Student, View Attendance, Student Feedback, and Staff Feedback. The main content area has a title bar 'View/Edit Profile'. Below it are input fields for 'First name:' (Admin), 'Last name:' (Admin), 'Email:' (admin@gmail.com), 'Gender:' (Male), 'Password:' (masked with \*\*\*\*), 'Profile pic:' (Choose File, No file chosen), and 'Address:' (Administration of the CSE Department,). A green 'Update Profile' button is at the bottom.

## **Add Course:**

The admin can add new courses to the department.

The screenshot shows the 'Add Course' form in the Admin Panel. The left sidebar contains the following menu items: Admin Panel, Admin, Admin, Home, Update Profile, Course (highlighted), Add Course (highlighted), Manage Course, Subject, Session, Add Staff, Manage Staff, Add Student, Manage Student, Notify Staff, and Notify Student. The main content area has a title bar 'Add Course' and a 'Home' link. Below it is a form with a 'Name:' input field containing 'EEE'. A green 'Add Course' button is at the bottom. The footer contains the text '© 2023 - Department Management System CSE, SEC.' and 'Version: 1.0'.

## Manage Course:

The admin can edit the details of a course or delete a course from the listed courses.

Admin Panel

Admin, Admin

Home

Update Profile

Course

Add Course

Manage Course

Subject

Session

Add Staff

Manage Staff

Add Student

Manage Student

Notify Staff

Notify Student

Manage Courses

Home

#	Course	Actions
1	IPE	<a href="#">Edit</a> <a href="#">Delete</a>
2	CE	<a href="#">Edit</a> <a href="#">Delete</a>
3	EEE	<a href="#">Edit</a> <a href="#">Delete</a>
4	CSE	<a href="#">Edit</a> <a href="#">Delete</a>
5	Sociology	<a href="#">Edit</a> <a href="#">Delete</a>
6	Social Work	<a href="#">Edit</a> <a href="#">Delete</a>
7	MATH	<a href="#">Edit</a> <a href="#">Delete</a>

## Add Subject:

Admin can add a subject under a course by giving the subject name, corresponding staff name, and course name.

Admin Panel

Admin, Admin

Home

Update Profile

Course

Subject

Add Subject

Manage Subject

Session

Add Staff

Manage Staff

Add Student

Manage Student

Notify Staff

Notify Student

Add Subject

Home

**Name:**

Digital Image Processing

**Staff:**

Nayan Kumar Nath -

**Course:**

CSE

Add Subject

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## Manage Subject:

The admin can edit the details of a subject or delete a subject from the listed subjects.

**Manage Subjects**

#	Subject	Staff	Course	Actions
1	IPE 701 (Industrial Management)	Hasan, Jahid	CSE	<a href="#">Edit</a> <a href="#">Delete</a>
2	SS 703 (Sociology and Industrial Law)	Paul, Krittebas	CSE	<a href="#">Edit</a> <a href="#">Delete</a>
3	SS 705 (Financial Management & Accounting)	Mokta Dhir, Md. Gulam	CSE	<a href="#">Edit</a> <a href="#">Delete</a>
4	CSE 711 (Digital Image Processing)	-, Nayan Kumar Nath	CSE	<a href="#">Edit</a> <a href="#">Delete</a>
5	CSE 700 (Project and Thesis)	Supervisor, Anonymous	CSE	<a href="#">Edit</a> <a href="#">Delete</a>
6	CSE 702 Artificial Intelligence (Sessional)	Hossain, A.K.M. Fakhrul	CSE	<a href="#">Edit</a> <a href="#">Delete</a>
7	CSE 701 (Artificial Intelligence)	Hossain, A.K.M. Fakhrul	CSE	<a href="#">Edit</a> <a href="#">Delete</a>

## Add Session:

A new session can be added by entering the starting year and ending year of the session with the admin.

**Add Session**

**Add Session**

**Start year:**  
dd-....-yyyy

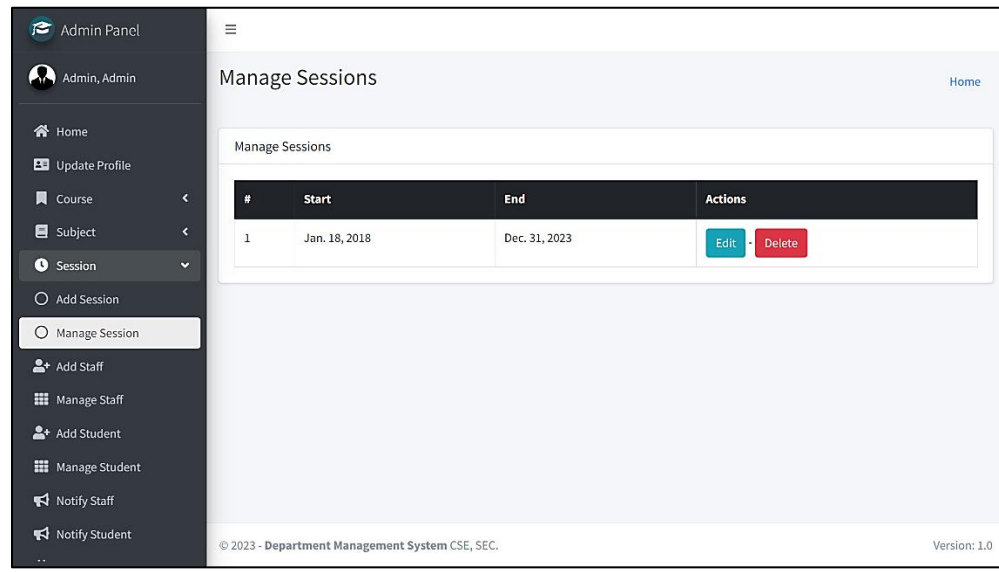
**End year:**  
dd-....-yyyy

[Add Session](#)

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## Manage Session:

The admin can delete or edit any session which exists in the listed session.



## Add Staff:

The admin can add a staff member by entering the staff's details like his name, email address, Gender, password, profile picture, address, etc.

The screenshot shows the 'Add Staff' form in the Admin Panel. The left sidebar contains the following menu items: Admin Panel, Admin, Admin, Home, Update Profile, Course, Subject, Session, Add Staff (selected), Manage Staff, Add Student, Manage Student, Notify Staff, Notify Student, View Attendance, and Student Feedback. The main content area is titled 'Add Staff' and features a form with the following fields:

- First name:** Nayan Kumar
- Last name:** Nath
- Email:** nayancsesec@sec.ac.bd@gmail.com  
*Email Address Available*
- Gender:** Male
- Password:** \*\*\*\*
- Profile pic:**

## Manage Staff:

Admin can edit or delete the staff details like staff's course, address, etc.

The screenshot shows the 'Manage Staff' page within an Admin Panel. The left sidebar contains navigation links: Admin Panel, Admin, Admin, Home, Update Profile, Course, Subject, Session, Add Staff, **Manage Staff** (highlighted), Add Student, Manage Student, Notify Staff, Notify Student, View Attendance, and Student Feedback. The main content area is titled 'Manage Staff' and features a table with the following data:

#	Full Name	Email	Gender	Course	Avatar	Actions
1	Nayan Kumar Nath -	nayancsesec@sec.ac.bd	M	CSE		<a href="#">Edit</a> <a href="#">Delete</a>
2	Md. Gulam Mokta Dhir	muktadhir@metrouni.edu.bd	M	Business Administration		<a href="#">Edit</a> <a href="#">Delete</a>
3	Jahid Hasan	j.hasan-ipe@sust.edu	M	IPE		<a href="#">Edit</a> <a href="#">Delete</a>
4	Krittebas Paul	krittebas-scw@sust.edu	M	CE		<a href="#">Edit</a> <a href="#">Delete</a>
5	Ashraful Islam Hridoy	ashraful.islam@sec.ac.bd	M	CSE		<a href="#">Edit</a> <a href="#">Delete</a>

## Add Student:

The screenshot shows the 'Add Student' page within an Admin Panel. The left sidebar is identical to the previous screenshot, with 'Add Student' highlighted. The main content area is titled 'Add Student' and contains a form with the following fields:

- First name:**
- Last name:**
- Email:**  *Email Address Available*
- Gender:**
- Password:**
- Profile pic:**

## Manage Student:

The screenshot shows the 'Manage Students' page in an Admin Panel. The left sidebar contains navigation options: Admin Panel, Admin, Admin, Home, Update Profile, Course, Subject, Session, Add Staff, Manage Staff, Add Student, Manage Student (highlighted), Notify Staff, Notify Student, View Attendance, and Student Feedback. The main content area is titled 'Manage Students' and features a table with the following data:

#	Full Name	Email	Gender	Course	Avatar	Actions
1	Abdullah Al Naseeh Chowdhury	bustani@gmail.com	M	CSE		<a href="#">Edit</a> <a href="#">Delete</a>
2	Geerani Pal Shashi	shashi@gmail.com	F	CSE		<a href="#">Edit</a> <a href="#">Delete</a>
3	Lukman Chowdhury	lukman03@gmail.com	M	CSE		<a href="#">Edit</a> <a href="#">Delete</a>
4	Nahyan Habib Khan	nahyan@gmail.com	M	CSE		<a href="#">Edit</a> <a href="#">Delete</a>
5	Mustafizur Rahman	mustafiz@gmail.com	M	CSE		<a href="#">Edit</a> <a href="#">Delete</a>

## Notify Student:

The screenshot shows the 'Notify Student' page in the Admin Panel. A modal dialog titled 'Send Notification' is open, displaying a text input field and two buttons: 'Close' and 'Send Notification'. The background shows the 'Notify Student' page with a table of students and 'Send Notification' buttons for each row.

#	Full Name	Email	Gender	Course	Avatar	Action
1	Chowdhury, Abdullah Al Naseeh	bustani@gmail.com	M	CSE		<a href="#">Send Notification</a>
2	Shashi, Geerani Pal	shashi@gmail.com	F	CSE		<a href="#">Send Notification</a>
3	Chowdhury, Lukman	lukman03@gmail.com	M	CSE		<a href="#">Send Notification</a>
4	Khan, Nahyan Habib	nahyan@gmail.com	M	CSE		<a href="#">Send Notification</a>
5	Rahman, Mustafizur	mustafiz@gmail.com	M	CSE		<a href="#">Send Notification</a>

## View Attendance:

The screenshot shows the 'View Attendance' page in the Admin Panel. It includes filters for Subject (CSE 711 (Digital Image Processing)), Session (From 2018-01-18 to 2023-12-31), and Attendance Date (2023-01-24). There are buttons for 'Fetch Attendance' and 'Fetch Students'. Below, the 'Student Attendance' section displays a grid of student names and their attendance status (Present):

Student Name	Status
Abdullah Al Naseeh Chowdhury	Present
Geerani Pal Shashi	Present
Lukman Chowdhury	Present
Nahyan Habib Khan	Present
Mustafizur Rahman	Present
Mahin Muntasir	Present
Syeda Gulnail Akther	Present
Shaon Roy	Present
Layek Ahmed	Present

## Student Feedback:

Admin Panel

Admin, Admin

Home

Update Profile

Course

Subject

Session

Add Staff

Manage Staff

Add Student

Manage Student

Notify Staff

Notify Student

View Attendance

Student Feedback

Student Feedback Messages

Home

Student Feedback Messages

#	Student	Session	Message	Sent On	Replied On	Action
1	Nafiz Nahid	From 2018-01-18 to 2023-12-31	Hi I am Nafiz , 12th Batch.	Jan. 22, 2023, 1:23 p.m.	Jan. 22, 2023, 2:51 p.m.	okay ...Take care!

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## Staff Feedback:

Admin Panel

Admin, Admin

Home

Update Profile

Course

Subject

Session

Add Staff

Manage Staff

Add Student

Manage Student

Notify Staff

Notify Student

View Attendance

Student Feedback

Staff Feedback Messages

Home

Staff Feedback Messages

#	Staff	Course	Message	Sent On	Replied On	Action
1	Nayan Kumar Nath -	CSE	Congratulation to everyone on the new Platform! ❤️	Jan. 23, 2023, 6:49 a.m.	Pending Response	Reply

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## Staff Leave:

Admin Panel

Course

Subject

Session

Add Staff

Manage Staff

Add Student

Manage Student

Notify Staff

Notify Student

View Attendance

Student Feedback

Staff Leave

Student Leave

Logout

Leave Applications From Staff

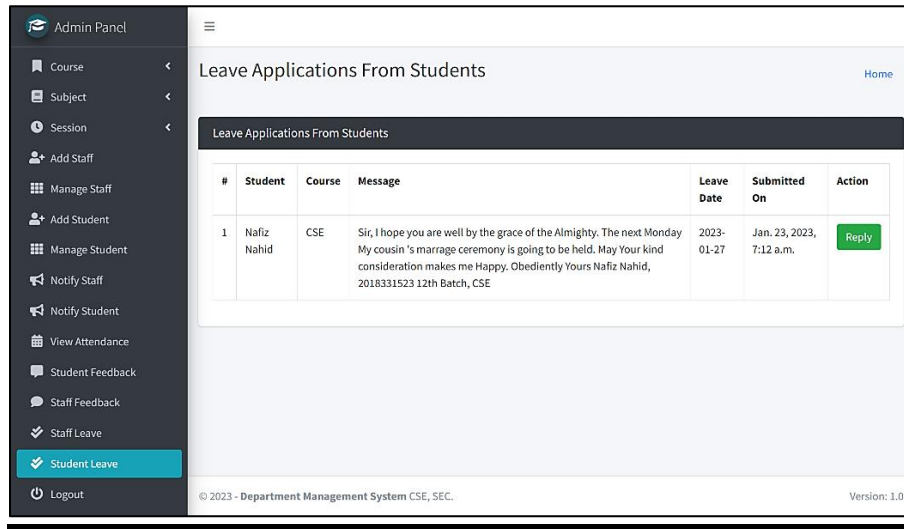
Home

Leave Applications From Staff

#	Staff	Course	Message	Leave Date	Submitted On	Action
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## Student Leave:



Leave Applications From Students						
Leave Applications From Students						
#	Student	Course	Message	Leave Date	Submitted On	Action
1	Nafiz Nahid	CSE	Sir, I hope you are well by the grace of the Almighty. The next Monday My cousin 's marriage ceremony is going to be held. May Your kind consideration makes me Happy. Obediently Yours Nafiz Nahid, 2018331523 12th Batch, CSE	2023-01-27	Jan. 23, 2023, 7:12 a.m.	<a href="#">Reply</a>

## Home Page: (From Student's View)

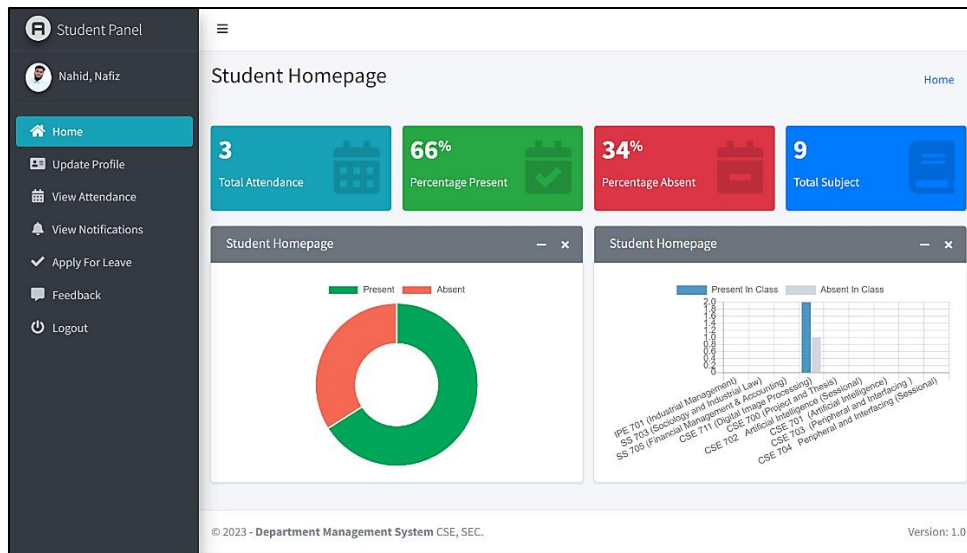
We will now log in to our application using the email and password of a student to see what facilities we have as a student.

After a student login to our application our home page will look like below screenshot.  
What can a student benefit from here and what can he do?

As we can see - a student can know about his overall academic performance from here. For example, he will know his attendance in a particular subject as well as the percentage of attendance, and his total number of subjects in the current semester.

And from here a student will be able to:

- Update Profile
- View Attendance
- View Notifications
- Apply for Leave
- Feedback
- Logout



## Update Profile:

In this section, a student can edit or update his profile details like name, email, password, photo, address etc.

The View/Edit Profile form contains the following fields:

- First name:** Nafiz
- Last name:** Nahid
- Email:** nafiz@gmail.com
- Gender:** Male
- Password:** [Masked]
- Profile pic:** Choose File (No file chosen)
- Address:**
  - Present Address: Boys Hostel, Bonghabondhu Hall, 109 No. Room, Sylhet Engineering College, Sylhet.
  - Permanent Address: Bagerhat, Khulna
  - REG NO: 2018331523
  - BG: A+

## View Attendance:

On this page, the student can see how many days he/she was present or absent in a particular subject in a particular duration. If he is present on a particular day it will show in a "green" box with the date of that day otherwise it will show in a "red" box.

Student Panel

Nahid, Nafiz

Home

Update Profile

**View Attendance**

View Notifications

Apply For Leave

Feedback

Logout

View Attendance

Home

Select Subject

CSE 711 (Digital Image Processing)

Start Date

22-Jan-2023

End Date

28-Jan-2023

Fetch Attendance Data

2023-01-24 Present

2023-01-25 Present

2023-01-26 Absent

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## View Notification:

This is the notification section. The student can view any message which is delivered by the admin.

Student Panel

Nahid, Nafiz

Home

Update Profile

View Attendance

**View Notifications**

Apply For Leave

Feedback

Logout

View Notifications

Home

#	Date	Message
1	Jan. 23, 2023, 7 a.m.	Why were you absent from Nayan Kumar Nath Sir's class on the last 26th? Submit an application please. Thank you.

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## Apply for leave:

In this section, the student can apply to the admin for leave for any specific reason and after that, the admin will consider the matter and send the acceptance notification of the application.

The screenshot shows a web application interface for a student dashboard. On the left is a dark sidebar with a 'Student Panel' header and a list of navigation items: Home, Update Profile, View Attendance, View Notifications, Apply For Leave (highlighted with a checkmark), Feedback, and Logout. The main content area is titled 'Apply for leave' and contains a form. The form has a 'Date:' field with the value '27-Jan-2023' and a 'Message:' text area containing a sample message. Below the message area is a green 'Apply For Leave' button. At the bottom, there is a 'Leave History' section with a table header: ID, Date, Message, and Status.

**Apply for leave**

**Date:**

27-Jan-2023

**Message:**

Sir,  
I hope you are well by the grace of the Almighty. The next Monday My cousin 's marrage ceremony is going to be held.  
May Your kind consideration makes me Happy.  
Obediently Yours  
Nafiz Nahid,  
2018331523  
12th Batch, CSE

**Apply For Leave**

**Leave History**

ID	Date	Message	Status
----	------	---------	--------

## Student feedback:

The student can give his feedback to the administration.

The screenshot shows a web application interface for a student dashboard. On the left is a dark sidebar with a 'Student Panel' header and a list of navigation items: Home, Update Profile, View Attendance, View Notifications, Apply For Leave, Feedback (highlighted with a checkmark), and Logout. The main content area is titled 'Student Feedback' and contains a form. The form has a 'Feedback:' text area with the value 'Thank you Sir'. Below the text area is a green 'Submit Feedback' button. At the bottom, there is a 'Student Feedback' section with a table header: ID, Feedback, Reply, and Created At. The table contains one row of data.

**Student Feedback**

**Feedback:**

Thank you Sir

**Submit Feedback**

**Student Feedback**

ID	Feedback	Reply	Created At
1	Hi I am Nafiz , 12th Batch.	okay ....Take care!	Jan. 22, 2023, 1:23 p.m.

# Staff Panel (Demo):

Staff Panel

Nayan Kumar Nath

Home

Update Profile

Add Result

Edit Result

Take Attendance

View/Update Attendance

View Notifications

Apply For Leave

Feedback

Logout

Staff Panel - Nayan Kumar Nath- (CSE)

Home

53

Total Students

3

Total Attendance Taken

0

Total Leave Applied

1

Total Subjects

Staff Panel - Nayan Kumar Nath- (CSE)

Attendance

Leave

Staff Panel - Nayan Kumar Nath- (CSE)

Attendance Per Subject

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Staff Panel

Nayan Kumar Nath

Home

Update Profile

Add Result

Edit Result

Take Attendance

View/Update Attendance

View Notifications

Apply For Leave

Feedback

Logout

View/Update Profile

Home

View/Update Profile

First name:

Nayan Kumar Nath

Last name:

-

Email:

nayansec@sec.ac.bd

Gender:

Male

Password:

....

Profile pic:

Choose File No file chosen

Staff Panel

Nayan Kumar Nath

Home

Update Profile

Add Result

Edit Result

Take Attendance

View/Update Attendance

View Notifications

Apply For Leave

Feedback

Logout

Take Attendance

Home

Take Attendance

Subject

CSE 711 (Digital Image Processing)

Session Year

From 2018-01-18 to 2023-12-31

Fetch Students

Attendance Date

dd----yyyy

☒ Chowdhury Abdullah Al Naseeh

☒ Rahman Mustafizur

☒ Ahmed Layek

☒ Omur Sheikh Kamrul Hasan

☒ Chowdhury Rahat Ahmed

☒ Nath Shubro Deb

☒ Hossain Md. Mehrab

☒ Pinki Tonima Akter

☒ Shashi Geerbani Pal

☒ Muntasir Mahin

☒ Joyed Jabir Al Hadi

☒ Rahman Khalilur

☒ Nahid Nafiz

☒ Ahmed Tufael

☒ Islam Mohona

☒ Datta Amiyo Kumar

☒ Chowdhury Lukman

☒ Akther Syeda Gulnaj

☒ Limon Sabur Islam

☒ Dhar Dip

☒ Rahman Ashfakur

☒ Das Newton

☒ Dey Rima

☒ Talukdar Saikat

☒ Khan Nahiyon Habib

☒ Roy Shaon

☒ Rashid Md. Muminur

☒ Chowdhury Saifur Rahman

☒ Rahman Hasanur

☒ Kamruzzaman Md.

☒ Onni Taskin Sultana

☒ Ahmed Imtiaj

## **Future Work:**

The future work for a department management system of a university may include:

1. **Integration with other systems:** The system could be integrated with other systems used by the university, such as student information systems, human resources systems, and financial management systems, to create a seamless and efficient workflow.
2. **Data analytics:** The system could be enhanced with advanced data analytics capabilities to provide insights into departmental performance and to support data-driven decision making.
3. **Automation:** The system could be further automated to reduce the need for manual data entry and to improve the accuracy and speed of processes.
4. **Self-service portals:** The system could include self-service portals for students and faculty to access information, make requests, and update their records, which can help to reduce administrative overhead and improve the user experience.
5. **Mobile compatibility:** The system could be developed to be mobile compatible, which would allow users to access the system from anywhere and at any time, using smartphones or tablets.
6. **Use of AI/ML:** The system could be enhanced with Artificial Intelligence (AI) and Machine Learning (ML) to improve decision making, increase efficiency and personalization of student experience.
7. **Cloud-based deployment:** The system could be deployed as a cloud-based solution, which would allow for easy access and scalability, and reduce the need for on-premise infrastructure.
8. **Cybersecurity:** The system could be enhanced with advanced security features to protect sensitive data and prevent unauthorized access.

Overall, the future work for a department management system of a university could be focused on making the system more efficient, user-friendly, and secure, while also leveraging advanced technologies to improve decision making and the overall student experience.

## **Conclusion:**

In conclusion, a department management system is an essential tool for managing and organizing the operations and activities of a department within a university. The system provides a centralized platform for storing and sharing information, managing projects and tasks, and tracking employee performance. It can also be used to track student progress, enhance student engagement, facilitate research, and manage resources. By streamlining operations and improving communication and collaboration, a department management system can help to improve the efficiency and effectiveness of departmental operations, while also helping to improve the student experience and support the university's research and academic goals. The future of department management systems in a university could involve advanced technologies such as **AI/ML** and cloud-based deployment to improve decision making and the overall student experience.