GALGOTIAS UNIVERSITY

(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

GUVI HCL

CAMPUS SYNC

Unified Campus Management System

TEAM MEMBERS

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JSP • Servlets • MySQL • Java

R1UC3D4C

CONTENTS OF THIS PROJECT

1. Efficient Campus Operations

A well-organized campus management system is essential for educational institutions to handle academic and administrative tasks smoothly. It ensures faster communication, accurate record-keeping, and a more systematic workflow across departments.

2. Automation and Accuracy in Academics

A digital solution like CampusSync reduces manual workload, minimizes errors, and improves the quality of services provided to students and faculty. It enhances academic efficiency by automating attendance, assignments, and user management.

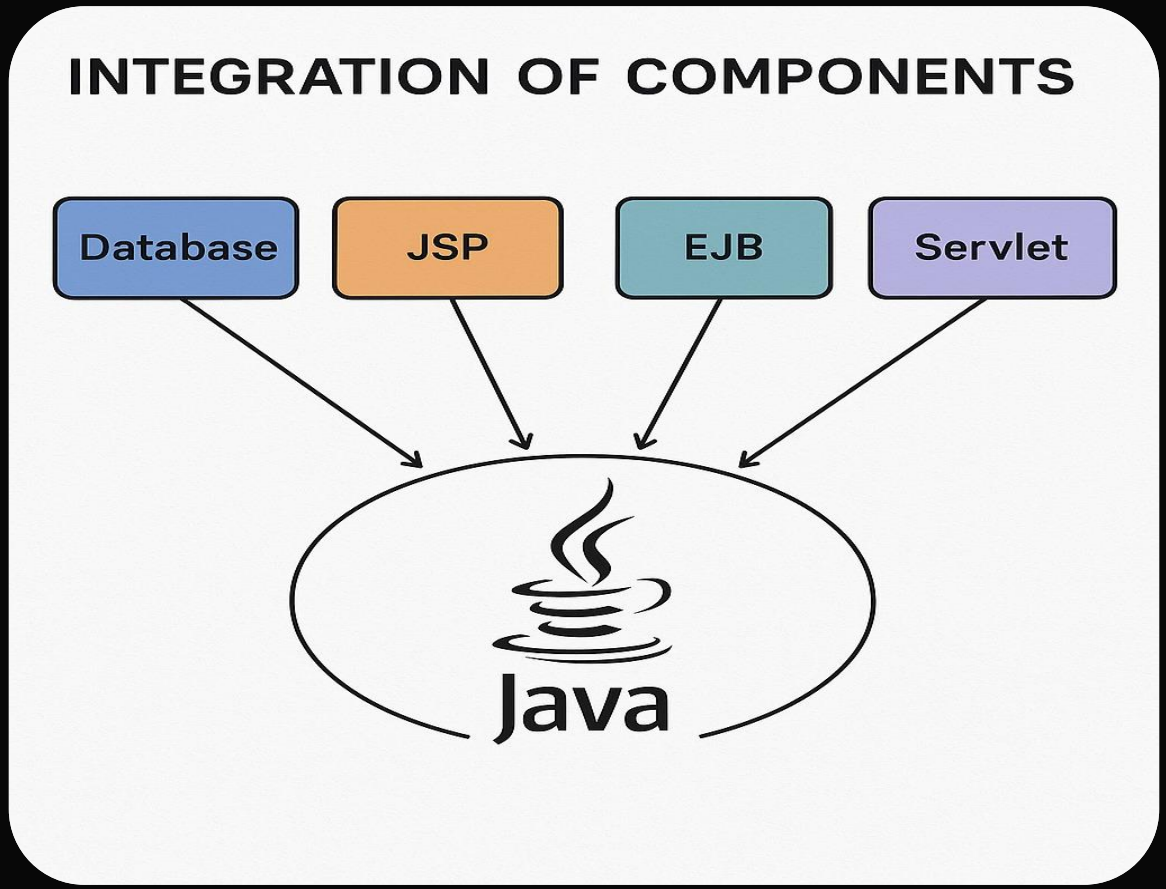
3. Technological Advancement in Education

Our project, CampusSync, is developed using Java, Servlets, JSP, JDBC, and MySQL to simplify daily campus activities. The system makes academic operations faster, more accurate, and more reliable, addressing the growing need for digital tools in modern education.

4. Future-Ready Campus System

A computerized campus management platform prepares institutions for future needs by supporting scalability, advanced integrations, and expansion of new modules. It ensures long-term usability and helps institutions stay updated with evolving educational technologies.

Implementation



SYSTEM ARCHITECTURE & CORE TECHNOLOGIES

01
CLIENT
User requests via browser

02
JSP
View renders request data

03
SERVLET
Controller processes input

04
DAO
Data access operations

05
DATABASE
Persistent storage

06
KPI OVERVIEW
Retention Rate

INSTALL MYSQL

MySQL Installer 8.0.44

Note: MySQL 8.0 is the final series with MySQL Installer. As of MySQL 8.1, use a MySQL product's MSI or Zip archive for installation. MySQL Server 8.1 and higher also bundle MySQL Configurator, a tool that helps configure MySQL Server.

Select Version:

8.0.44

Select Operating System:

Microsoft Windows

Windows (x86, 32-bit), MSI Installer	8.0.44	2.1M	Download
(mysql-installer-web-community-8.0.44.0.msi)	MD5: f48ab9b8c2db55ee39ddf534d4581676 | Signature		
Windows (x86, 32-bit), MSI Installer	8.0.44	558.3M	Download
(mysql-installer-community-8.0.44.0.msi)	MD5: 338dce4ac543dfc280664c857d265e3e | Signature		

We suggest that you use the MD5 checksums and GnuPG signatures to verify the integrity of the packages you download.

INSTALL TOMCAT

9.0.112

Please see the README file for packaging information. It explains what every distribution contains.

Binary Distributions

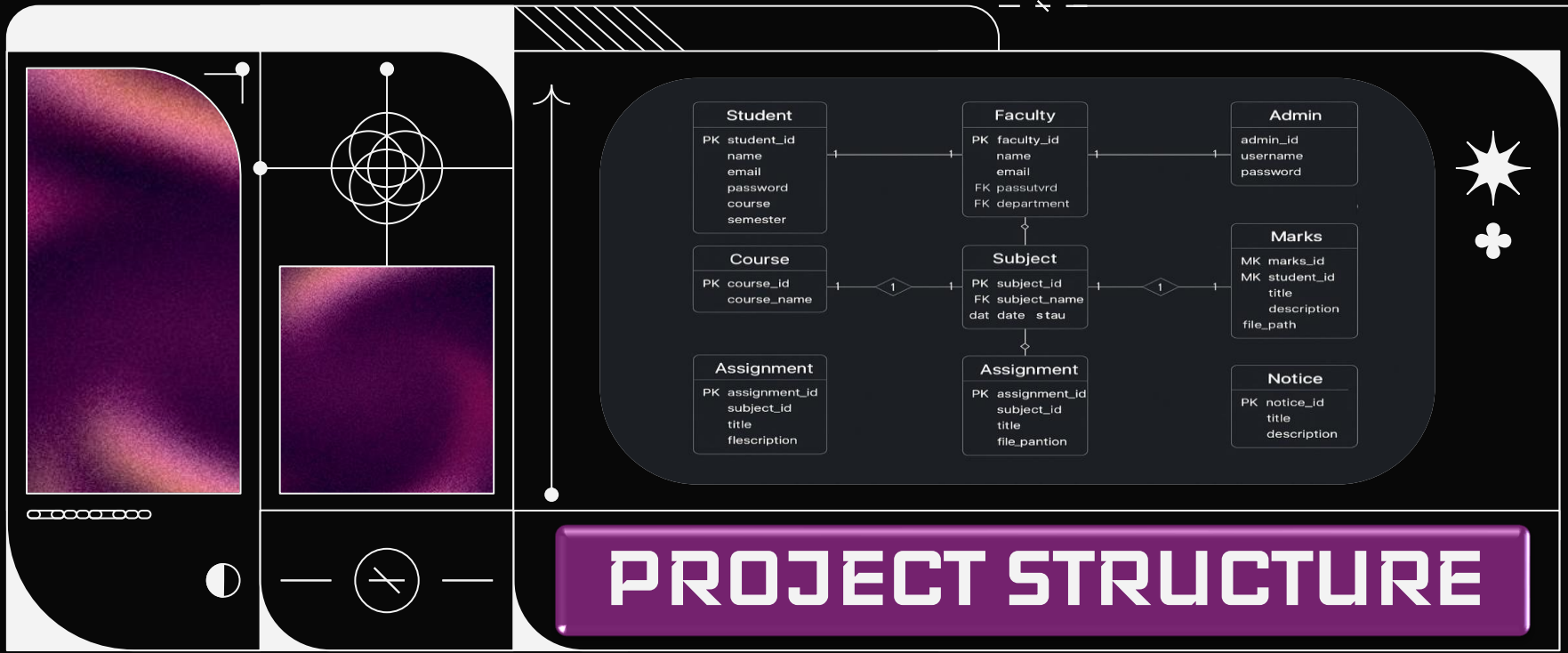
- Core:
  - zip (pgp, sha512)
  - tar.gz (pgp, sha512)
  - 32-bit Windows zip (pgp, sha512)
  - 64-bit Windows zip (pgp, sha512)
  - 32-bit/64-bit Windows Service Installer (pgp, sha512)
- Full documentation:
  - tar.gz (pgp, sha512)
- Deployer:
  - zip (pgp, sha512)
  - tar.gz (pgp, sha512)
- Embedded:
  - tar.gz (pgp, sha512)
  - zip (pgp, sha512)

Source Code Distributions

- tar.gz (pgp, sha512)
- zip (pgp, sha512)

USE CASE OVERVIEW: ROLE-BASED INTERACTIONS

CampusSync caters to distinct user roles, providing tailored functionalities for administrators, faculty, and students.


Student
PK student_id
name
email
password
course
semester
Faculty
PK faculty_id
name
email
FK passutvrd
FK department
Admin
admin_id
username
password
Course
PK course_id
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Notice
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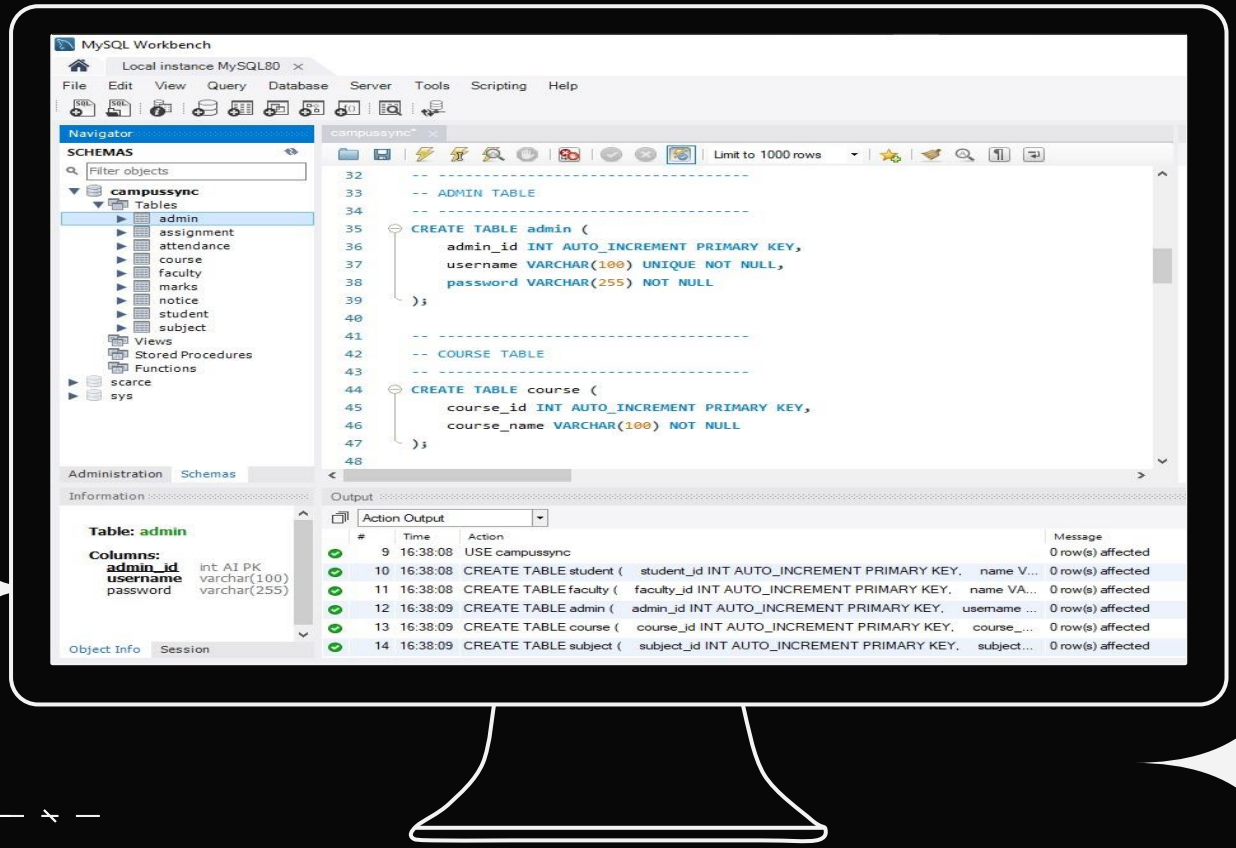
title
description
PROJECT STRUCTURE

CREATE A MYSQL TABLE

The MySQL tables in the CampusSync system have been carefully designed and structured to ensure smooth execution of all academic and administrative operations. These tables efficiently store and manage essential information such as student records, faculty details, attendance logs, assignment data, and administrator credentials.



IMPLEMENT JDBC CONNECTIVITY

```
// JDBC URL - use serverTimezone to avoid timezone warnings
    private static final String URL = String.format(
        "jdbc:mysql://%s:%s/%s?useSSL=false&allowPublicKeyRetrieval=true&serverTimez
        one=UTC",
            HOST, PORT, DBNAME);
```

– J D B C (Java Database Connectivity)

CampusSync uses J D B C (Java Database Connectivity) to connect Java Servlets with the MySQL database.
JDBC enables the application to store, retrieve, update, and manage academic data such as students, faculty, assignments, attendance, and admin details.

DEVELOP MODEL AND DAO CLASSES FOR DATABASE OPERATIONS

The Data Access Object (DAO) is a design pattern used to separate low-level database operations from high-level business logic.
In CampusSync, DAO acts as a bridge between Java Servlets and the MySQL database.

CampusSync

Venus is the second planet from the Sun

FacultyDAO

Uploading assignments, managing attendance

AdminDAO

Login authentication, user management

AttendanceDAO

Storing and retrieving attendance

StudentDAO

Fetching student details, attendance, assignments

AssignmentDAO

Handling assignment uploads/list

DAO LAYER WORKFLOW IN CAMPUSSYNC

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
KEY ACTION 1	Servlet receives request	DAO creates a Prepared Statement	DAO maps data to Java Model class
KEY ACTION 2	Servlet calls the appropriate DAO method	DAO executes SQL query Result Set returned to DAO	DAO returns model to Servlet and forwards data to JSP

STRUCTURED DATA MANAGEMENT

The DAO layer abstracts database operations, providing separation of concerns and enhancing maintainability.

Manages faculty, student, and notice data.

AdminDAO

Facilitates fetching attendance, marks, and assignment details for students.

StudentDAO

Handles attendance, marks, and assignment submissions.

FacultyDAO

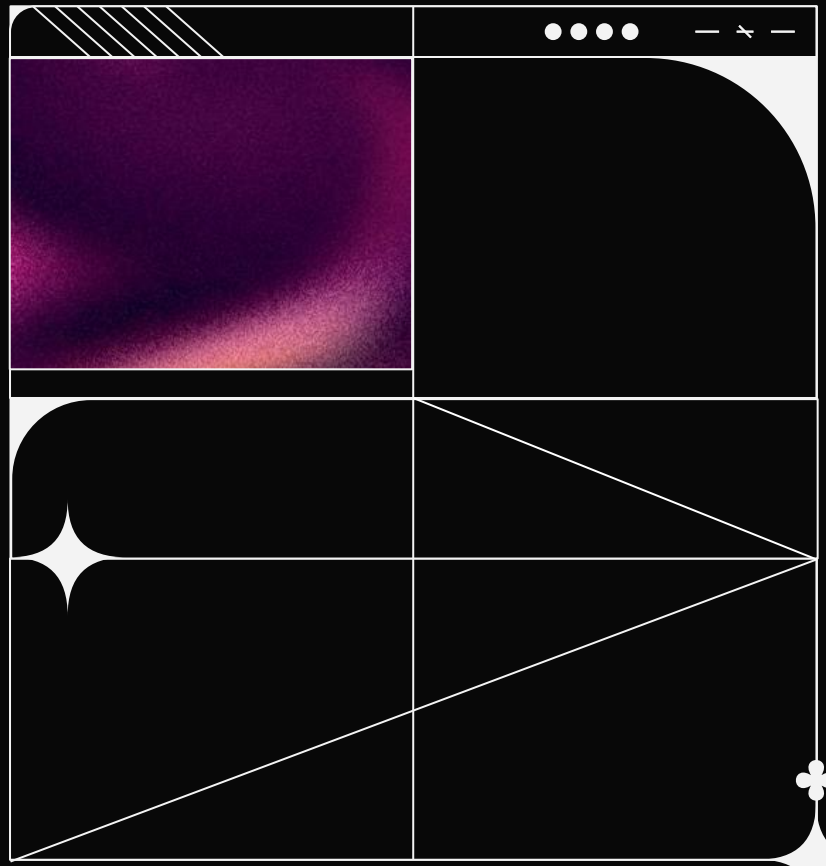
SERVLETS & WEB INTEGRATION

Servlets act as the backbone of CampusSync. They handle all incoming user requests, process business logic, communicate with the database, and send responses to the JSP pages.

A SERVLET PERFORMS:

- Request handling (GET/POST)
- Input validation
- Role-based functionalities
- Database interaction via DAO
- Session management
- Forwarding results to JSP

This makes Servlets the controller layer of the MVC architecture.



MAJOR SERVLETS USED IN CAMPUSSYNC

MAIN TERM

STUDENT SERVLET 1

- Performs login authentication
- Validates user credentials
- Creates sessions for each role (Student, Faculty, Admin)

FACULTY SERVLET 2

- Displays student dashboard
- Fetches attendance records
- Shows assignments

ADMIN SERVLET 3

- Allows faculty to upload assignments
- Mark attendance

SUB TERM

AUTH SERVLET 4

- Performs login authentication
- Validates user credentials
- Creates sessions for each role (Student, Faculty, Admin)

ATTENDANCE SERVLET 5

- Records attendance
- Stores data into the attendance table

ASSIGNMENT SERVLET 6

- Uploads assignments
- Retrieves assignment list

These servlets collectively support all major functionality of CampusSync.

REQUEST HANDLING (DOGET & DOPOST)

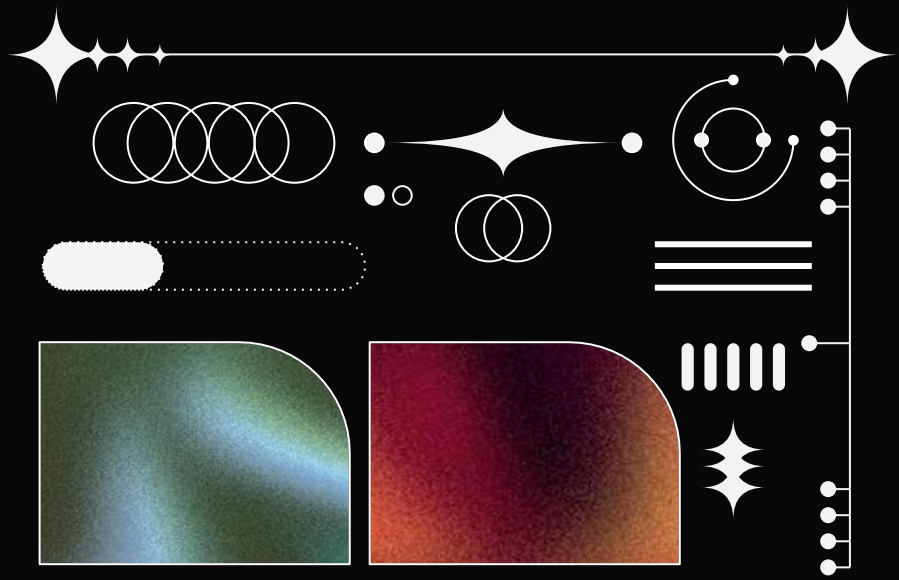
CampusSync uses both:

- **doGet()** → To fetch data or display pages
- **doPost()** → To submit forms like login, assignments, or attendance

EXAMPLE:

```
protected void doPost(HttpServletRequest
request, HttpServletResponse response)
      throws ServletException, IOException {

   String email = request.getParameter("email");
   String password =
request.getParameter("password");
}
```



UI DESIGN AND AESTHETICS

1. PROFESSIONAL ACADEMIC-THEMED BACKGROUND

A clean, subtle campus-themed background (such as classroom, college silhouette, or abstract blue academic gradient) enhances the professional look of the application.
It immediately gives users a university environment feel, making the platform visually relevant and engaging.

2. CLEAN AND MODERN TYPOGRAPHY

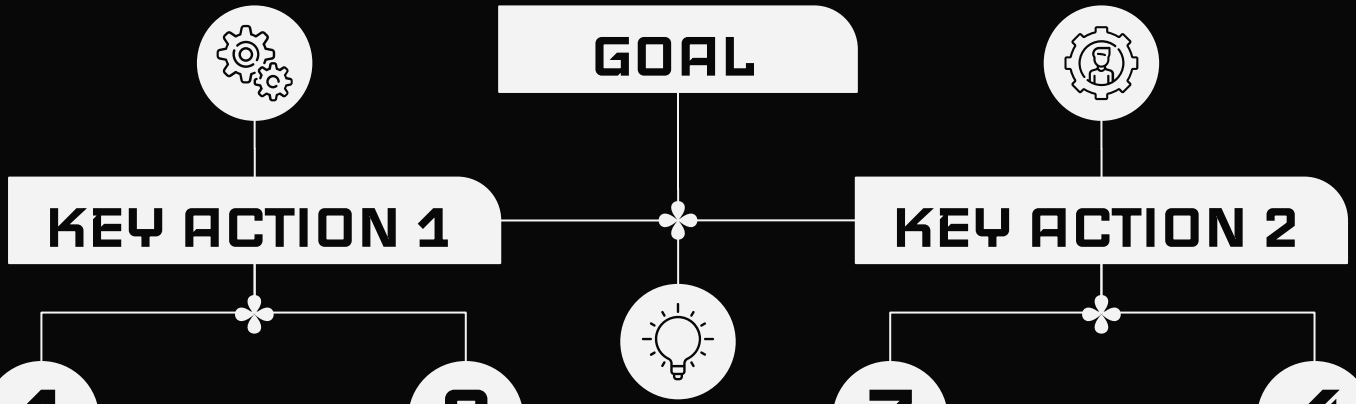
Headings are displayed using bold, modern sans-serif fonts (like Poppins or Roboto), ensuring excellent readability.
Subheadings and body text use lighter font weights, maintaining a visual hierarchy across all screens.

3. REALISTIC CAMPUS MANAGEMENT FEEL

- Just like a real university portal:
- Dashboard greetings
- Quick stats cards
- Profile icon
- Logout button

all create a realistic, professional academic management experience.

UI COMPONENT ALIGNMENT



Consistent Layout Structure

The UI follows a clean two-section layout:
- Left Side Navigation Panel (fixed)
- Right Side Content Area (dynamic)

Perfect Horizontal Alignment

All dashboard cards (Faculty, Students, Subjects) are perfectly aligned in a straight row with:
- Equal spacing
- Equal card size
- Identical padding

Vertical Alignment for Flow

Sections like Upcoming Classes are vertically aligned
Heading Table Rows &Columns
This ensures smooth flow from top to bottom.

Icon + Text Alignment

Each menu item has:
- Left-aligned icon
- Right-aligned
- between all items

This improves clarity and visual grouping.

RESPONSIVENESS AND ACCESSIBILITY

1 Flexible Grid-Based Layout

The UI follows a **flexible grid structure**, allowing elements like dashboards, tables, and cards to resize and realign naturally.

2 Accessibility For All Users

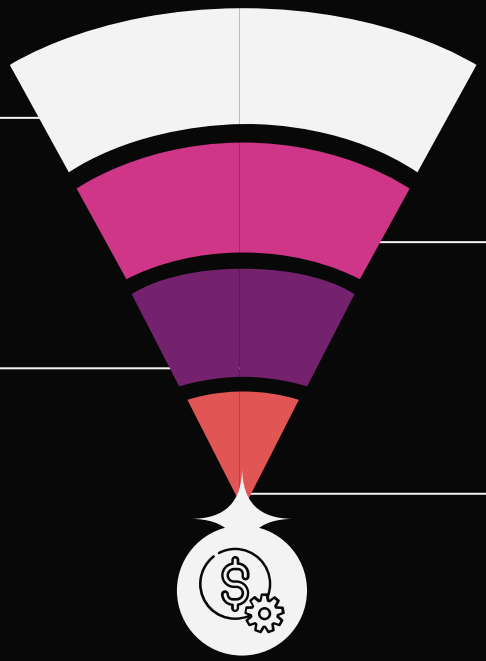
The interface uses:
Clear labels
High-contrast colors
Large clickable buttons .

3 Mobile-Friendly Navigation

Even though CampusSync is primarily desktop-oriented, the UI ensures that core pages.

4 Keyboard-Friendly UI

This improves usability for users who rely on keyboard input instead of a mouse.




THANK YOU