Problem statement:  
  
  
Problem Statement ID: 25016

Problem Statement Title: Automated Student Attendance Monitoring and Analytics System for Colleges

\*Description \*

Problem Description: Attendance tracking in most colleges is still done manually, usually through roll calls or paper registers. This consumes valuable teaching time and often leads to errors such as incorrect entries or proxy attendance. In larger classes, the issue becomes even harder to manage.

Additionally, faculty and administrators lack easy access to attendance insights, making it difficult to identify students at risk or to track patterns in engagement. As education undergoes digital transformation, continuing to rely on outdated systems creates unnecessary inefficiencies and delays.

There is a clear need for a solution that not only automates attendance but also provides analytics for better academic planning. Such a system should be user-friendly, reliable, and work seamlessly in both in-person and online settings.

Impact / Why this problem needs to be solved

• Saves valuable teaching time otherwise wasted on manual attendance.

• Reduces errors and eliminates the problem of proxy attendance.

• Provides actionable insights for faculty to identify disengaged or struggling students.

• Enhances transparency and accountability in academic processes.

• Supports digital transformation of higher education institutions.

Expected Outcomes

• Automated attendance system using QR codes, biometrics, or facial recognition.

• Cloud-based dashboard for administrators and faculty to review attendance records.

• Analytics to identify attendance trends and student engagement levels.

• Compatibility with both offline and online classes.

Relevant Stakeholders / Beneficiaries

• Students

• Faculty and academic administrators

• College management bodies

• Education departments and policymakers

Organization: Government of Punjab

Department: Department of Higher Education

Category: Software

Theme: Smart Education  
  
  
  
Important Links:

1.flowchart : <https://lucid.app/lucidchart/68cfc92d-ab5c-4c1b-8382-1c818ecd3300/edit?viewport_loc=-481%2C-900%2C4532%2C2027%2C0_0&invitationId=inv_428dfe71-dfb3-4997-8831-84982207f286>  
  
  
  
  
  
Issues and queries to resolve.  
  
  
(student app)  
1.how to do geo location fencing  
2.face id verification seamlessly  
3.how to manage dynamic class code  
  
  
(Teacher app)  
1.  
2.  
3.

(web application)  
1.do we need this in initial state of the project