

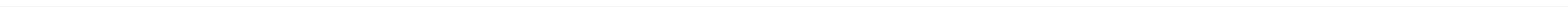
AttendEase

GROUP 5 – VECTOR FOUR

Systems Analysis & Detailed Design

SSYADD1 – SS231

Mr. Jose Eugenio L. Quesada



OUR TEAM MEMBERS



Christian Luis Esguerra



Dr. Manuel Calimlim Jr.



Maria Sophea Balidio

- Designer/Researcher
- Documenter



Suzanne Marie Rosco

- Researcher/Documenter



Moises James Sy

- Developer

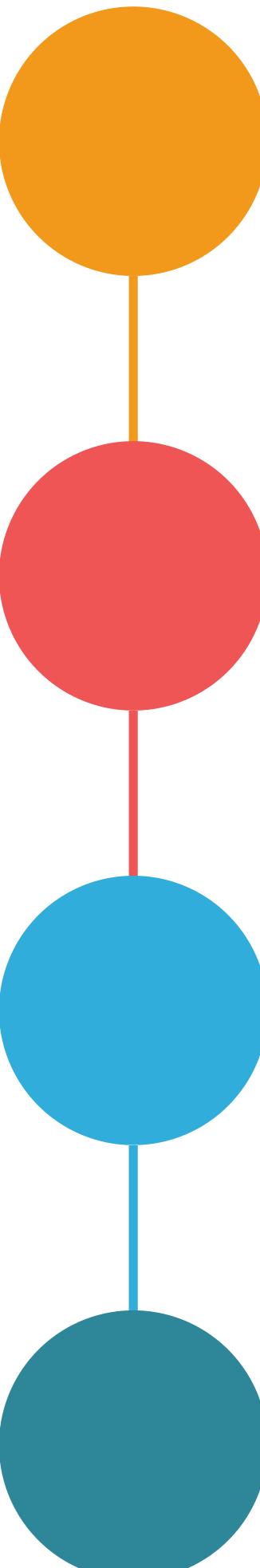


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(5 Stages)

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Introduction

AttendEase is an automated attendance tracking system that uses facial recognition to seamlessly record student presence in real time. By integrating with platforms like Microsoft Teams, it eliminates the need for manual roll calls, reduces errors, and provides professors and administrators with accurate engagement data.

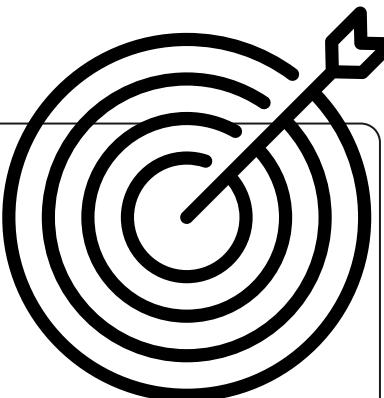


Project Management Docs

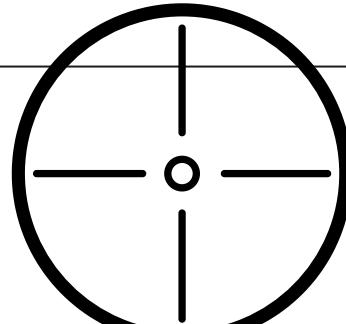
Charter



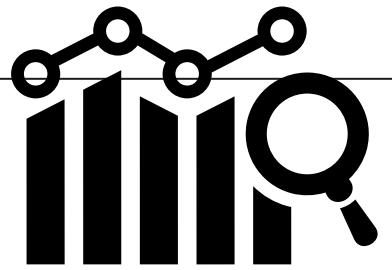
Objectives



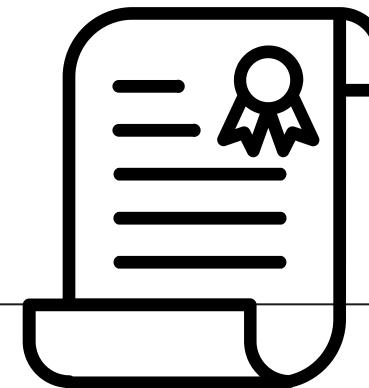
Scope



Stakeholder Analysis



Charter



Purpose:
Description:

Milestones:

Automate APC's attendance tracking

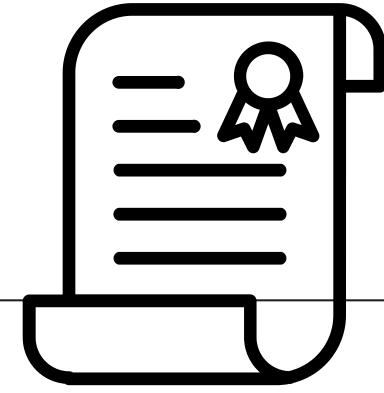
Unified System for HyFlex, w/ Facial Recognition,
Online engagement tracking, centralized dashboard

Y2T3	Planning & Prototype
Y3T1	Teams App
Y3T2	Backend + Dashboard + testing
Y3T3	Pilot & Deployment

Budget:

PHP 1000

Charter



Stakeholders:

- APC Faculty
- Students
- IT Department
- Academic Affairs
- Registrar's Office

Project Manager:

Christian Luis Esguerra

Sponsor:

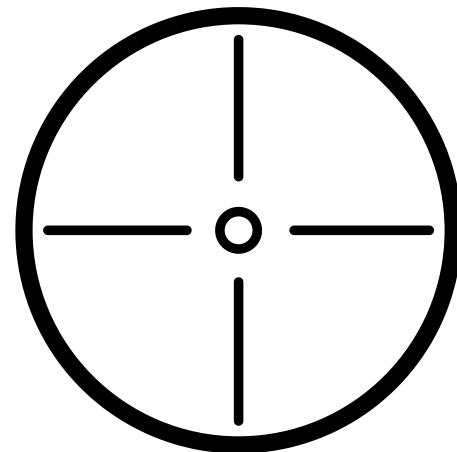
Jose Eugenio Quesada

Objectives



Category	Objective	Measure of Success
Automation & Efficiency	Deploy real-time automated attendance (onsite + online)	Records attendance for a full class with no manual input
Data & Reporting	Create centralized dashboard	Generates consolidated reports within 5 minutes after class
Integration & Compliance	Integrate with cameras + MS Teams, ensure privacy compliance	Works seamlessly in Teams, passes data privacy review
Feature Expansion	Works seamlessly in Teams, passes data privacy review	Tracks attentiveness & activity, not just presence

Scope



Deliverables	AttendEase v1.0.0 Unified Dashboard Final Documentation Report
Success Criteria	More accurate attendance(online + onsite) Less time spent on roll calls Positive feedback Feature complete
Assumptions	Logitech cameras available Teams Graph API + JS APIs stable APC IT support & permissions granted
Constraints	Must be completed by Year 3, Term 3 Dependent on MS Teams platform Strict compliance with biometric privacy rules

Stakeholder Analysis



Faculty

- Want accurate tracking, minimal disruption
- Contribute by testing system usability
- Risk: resistance if system is too complex

Students

- Want quick, transparent check-ins
- Contribute by giving feedback
- Risk: privacy concerns

IT Department

- Want smooth integration with minimal issues
- Contribute by maintaining tech
- Risk: insufficient resources

Stakeholder Analysis



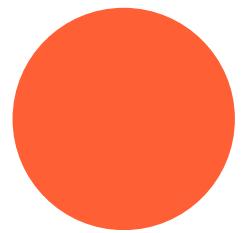
Academic Services Office

- Want policy compliance & reliable monitoring
- Contribute by validating compliance
- Risk: misalignment with official policies

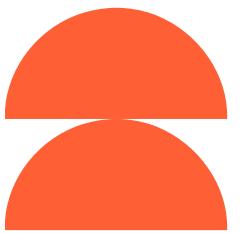
Registrar's Office

- Want accurate official records
- Contribute by using data for reports
- Risk: inaccurate or incomplete reports

Design Thinking



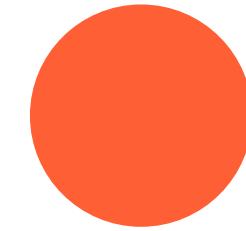
Empathize



Define



Ideate



Empathize

- **Understand** the users and their needs
- Method: **Interviews**

Personas

Persona 1



Jojo Castillo

Company : Asia Pacific College

Department : Information Technology Resource Office

Role : Executive Director

Personality

Introvert



Extrovert

Thinking



Feeling

Sensing



Intuition

Judging



Perceiving

Goals

- Ensure the school uses cost-effective, reliable technology.
- Implement solutions that are sustainable and maintainable by IT staff.
- Stay within allocated budgets.

Challenges

- High costs of certain solutions (e.g., RFID).
- Limited manpower and resources to maintain complex systems.
- Risk of adopting technology that may not be feasible long term.

Persona 2



Personality

Introvert

Extrovert

Thinking

Feeling

Sensing

Intuition

Judging

Perceiving

Carl Dominique Bueno

Company : Asia Pacific College

Department : School of Computing and Information Technology

Role : Faculty Member

Goals

- Fast, simple, and reliable attendance checking during classes.
- Minimize classroom disruptions caused by tech.
- Have a system that is easy for both teachers and students to use.

Challenges

- Systems that are too complex or time-consuming.
- Unreliable tech that slows down teaching.
- Privacy concerns with facial recognition

Persona 3



Jo Anne de la Cuesta

Company : Asia Pacific College

Department : Academics Services Office

Role : Executive Director

Personality

Introvert



Extrovert

Thinking



Feeling

Sensing



Intuition

Judging



Perceiving

Goals

- Ensure fairness, transparency, and accuracy in student attendance records.
- Protect student data and privacy.
- Support faculty and administrative workflows efficiently.

Challenges

- Attendance systems that generate disputes or inconsistencies.
- Tools that require extra training or are not user-friendly.
- Privacy/security issues that may cause student/parent complaints.

Persona 4



Personality

Introvert

Extrovert

Thinking

Feeling

Sensing

Intuition

Judging

Perceiving

Kimberly Malate

Company : Asia Pacific College

Department : Registrar's Office

Role :

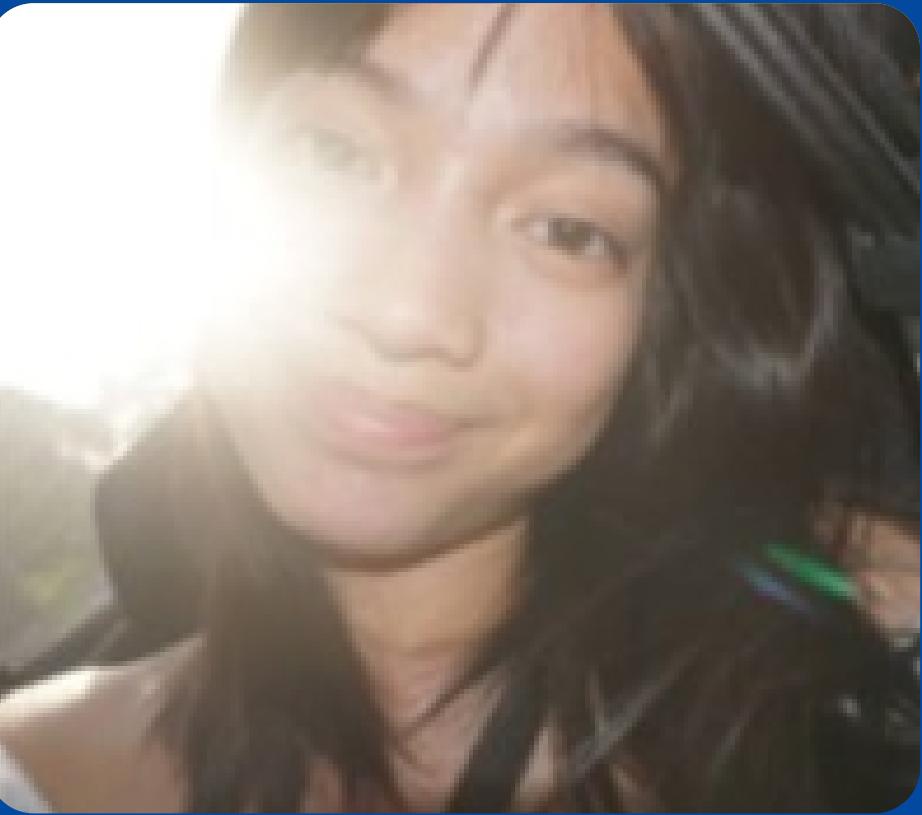
Goals

- Ensure fairness, transparency, and accuracy in student attendance records.
- Protect student data and privacy.
- Support faculty and administrative workflows efficiently.

Challenges

- Attendance systems that generate disputes or inconsistencies.
- Tools that require extra training or are not user-friendly.
- Privacy/security issues that may cause student/parent complaints.

Persona 5



Shandy Alingasa

Company : Asia Pacific College

Department : School of Multimedia Arts

Role : Student

Personality

Introvert



Extrovert

Thinking



Feeling

Sensing



Intuition

Judging



Perceiving

Goals

- Ensure fairness, transparency, and accuracy in student attendance records.
- Protect student data and privacy.
- Support faculty and administrative workflows efficiently.

Challenges

- Attendance systems that generate disputes or inconsistencies.
- Tools that require extra training or are not user-friendly.
- Privacy/security issues that may cause student/parent complaints.

Persona 1



John Santos

Age : 19

Company : Asia Pacific College

Department : School of Computing and Information Technology

Role : Student

Personality

Introvert

Extrovert

Thinking

Feeling

Sensing

Intuition

Judging

Perceiving

Goals

- Attend classes easily without worrying about manual attendance.
- Have a fair record that reflects her actual presence.
- Save time during check-ins.

Challenges

- Long lines or delays caused by faulty attendance systems.
- Mistaken absences due to technical glitches.
- Privacy worries if her personal data is collected without consent.

Persona 2



Jane Reyes

Age : 45

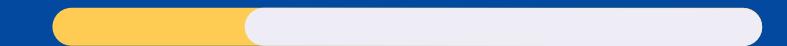
Company : Asia Pacific College

Department : Faculty Member

Location : Instructor

Personality

Introvert



Extrovert

Thinking



Feeling

Sensing



Intuition

Judging



Perceiving

Goals

- Focus on teaching, not on technical issues.
- Use a system that works consistently across all classes.
- Ensure older faculty members can adopt the system without hassle.

Challenges

- Complicated tech that requires training.
- Attendance tools that disrupt the flow of lectures.
- Lack of IT support when problems occur.

Persona 3



Angela Cruz

Age : 28

Company : Asia Pacific College

Department : Academic Services Office

Location : Administrative Assistant

Personality

Introvert

Extrovert

Thinking

Feeling

Sensing

Intuition

Judging

Perceiving

Goals

- Generate attendance reports quickly.
- Reduce manual paperwork.
- Ensure accuracy in records for official use (grades, scholarships, etc.).

Challenges

- Time-consuming manual encoding of attendance.
- Errors that lead to disputes between students and faculty.
- Difficulty consolidating data across multiple sections.

Persona 4



Mark Tan

Age : 48

Company : Asia Pacific College

Department : Academic Services Office

Location : Administrative Assistant

Personality

Introvert

Extrovert

Thinking

Feeling

Sensing

Intuition

Judging

Perceiving

Goals

- Be assured that his child is attending classes.
- Trust that the school has reliable, secure records.
- Ensure the system doesn't compromise student privacy.

Challenges

- Fear of student data being misused.
- Lack of transparency on how attendance is tracked.
- Worries if the system unfairly marks students absent.

Empathy Map

Name: Mr. Carl Bueno

What does he think and feel?

- Wants attendance checking to be quick and simple.
- Values tools that let him focus on teaching, not admin tasks.



What does he hear?

- Feedback from colleagues about past attendance systems being unreliable.
- Concerns from students about fairness and privacy.

What does he see?

- Other teachers struggling with complicated attendance methods.
- Opportunities to simplify classroom processes with better tools.

What does he say and do?

- Recommends QR codes as a practical solution.
- Expresses hesitation about facial recognition due to complexity.
- Supports features like screen monitoring that help with class engagement.

Pain

- Attendance errors leading to disputes.
- Privacy issues with students resisting certain technologies.
- Complex systems that slow down lectures.

Gain

- Faster and fairer attendance recording.
- More teaching time, less admin work.
- Better class management with integrated features (e.g., screen monitoring).

Empathy Map

Name:

Mr. Jojo Castillo

What does he think and feel?

- Focused on feasibility and sustainability.
- Concerned about costs and IT staff workload.
- Wants reliable, long-term solutions.



What does he hear?

- Budget limits from admin.
- Concerns about system complexity.

What does he see?

- APC's manual and slow attendance process.
- Potential improvements with the right investment.

What does he say and do?

- Says facial recognition not feasible.
- Considers RFID but too costly (~2M).
- Open to adding instructor attendance tracking.

Pain

- High expenses
- Complex upkeep
- Limited manpower

Gain

- Affordable, sustainable, maintainable system

Empathy Map

Name: Ms. Jo Anne de la Cuesta

What does she think and feel?

- Values fairness, accuracy, and privacy.
- Wants to minimize disputes in records.
- Focused on smooth academic processes.

What does she hear?

- Student complaints about errors.
- Faculty issues with reports and delays.

What does she see?

- Errors in manual encoding.
- Time wasted on data consolidation.
- Disputes over attendance records.



What does she say and do?

- Pushes for accurate and transparent records.
- Advocates systems that support both students and faculty.
- Prefers tools that simplify reporting.

Pain

- Inaccurate reports
- Privacy risks
- Inefficient processes

Gain

- Transparent and fair attendance records
- Accurate reports for academic use
- User-friendly, trusted system

Empathy Map

Name: Mr. Kimberly Malate

What does he think and feel?

- Wants attendance checking to be quick and simple.
- Values tools that let him focus on teaching, not admin tasks.



What does he hear?

- Complaints about delays in record updates.
- Feedback from students and faculty.
- Admin reminders on accuracy and deadlines.

What does he see?

- Errors in manual submissions.
- Delays in absence reporting.
- Paper-based records piling up.

What does he say and do?

- Emphasizes the need for reliable reports.
- Double-checks attendance data.
- Coordinates with Academic Services Office.

Pain

- Inconsistent data flow.
- Manual checking wastes time.
- No immediate resolution tracking.

Gain

- Automated, error-free reports.
- Faster processing of records.
- Real-time updates from the system.

Empathy Map

Name:

Ms. Shandy Alingasa

What does he think and feel?

- Wants fairness in attendance marking.
- Stressed about mistakes in records.
- Values transparency.



What does he hear?

- Peers complain about misrecorded attendance.
- Reminders from professors about attendance rules.
- Updates from student groups.

What does he see?

- Delays in attendance validation.
- Professors manually tracking absences.
- Unclear process for fixing errors.

What does he say and do?

- Asks professors to confirm attendance.
- Cross-checks own records.
- Reports mistakes when found.

Pain

- Errors not immediately corrected.
- Lack of visibility in attendance records.
- Stress over academic standing due to mistakes.

Gain

- Access to personal attendance logs.
- Assurance of accurate records.
- Quick correction of issues.

PAIN - GAIN ANALYSIS

PAIN

- Limited IT staff/resources
- Complex systems disrupt classes
- Disputes, privacy concerns, lack of transparency

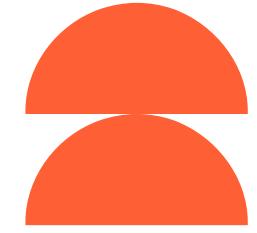
GAIN

- Affordable, sustainable system
- Easy to use, low maintenance
- Faster attendance, less disruption
- Automated reports, less admin work
- Accurate, fair, and trusted records

ANALYSIS

System must be:

- Simple
- Low-cost
- Accurate
- Transparent



Define

- Clearly **articulate** the problem
- **Synthesize** user insights
- Creation of **Clustered Ideas**
- Reimagine **How-Might-We** questions

Clustered Problems

Classroom/Teaching Problems:

- Manual process prone to delays and errors.
- Attendance checking consumes class time.
- Checking attendance before and after the class.
- Students can easily leave/cut in the middle of the class.

Technical Problems:

- Separate Onsite & Online Attendance Process.
- Lack of centralized data for online attendance records.
- Not all students are seen with the existing camera in classrooms.
- Limited to only existing hardware.

Administrative Problems:

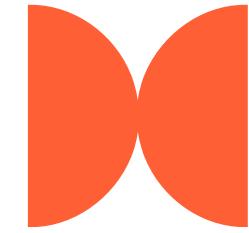
- Difficulty consolidating data across classes.
- Time-consuming manual encoding.
- Difficult to know if a student is consistently not attending classes unless reported by Professor.
- The Academic Services Office is not immediately notified of student absences, preventing timely intervention and outcome visibility.

Problem Statements:

1. Accurate Record Keeping Despite Technical Limitations
2. Efficient Time Management for Attendance
3. Tracking Student Engagement
4. Non-Disruptive System During Lectures
5. Centralization of Attendance Data
6. Streamlining the Attendance Process
7. Using Data to Improve Engagement
8. Quick and Efficient Student Check-In
9. Notifying about Consistent Absences

How-Might-We Questions:

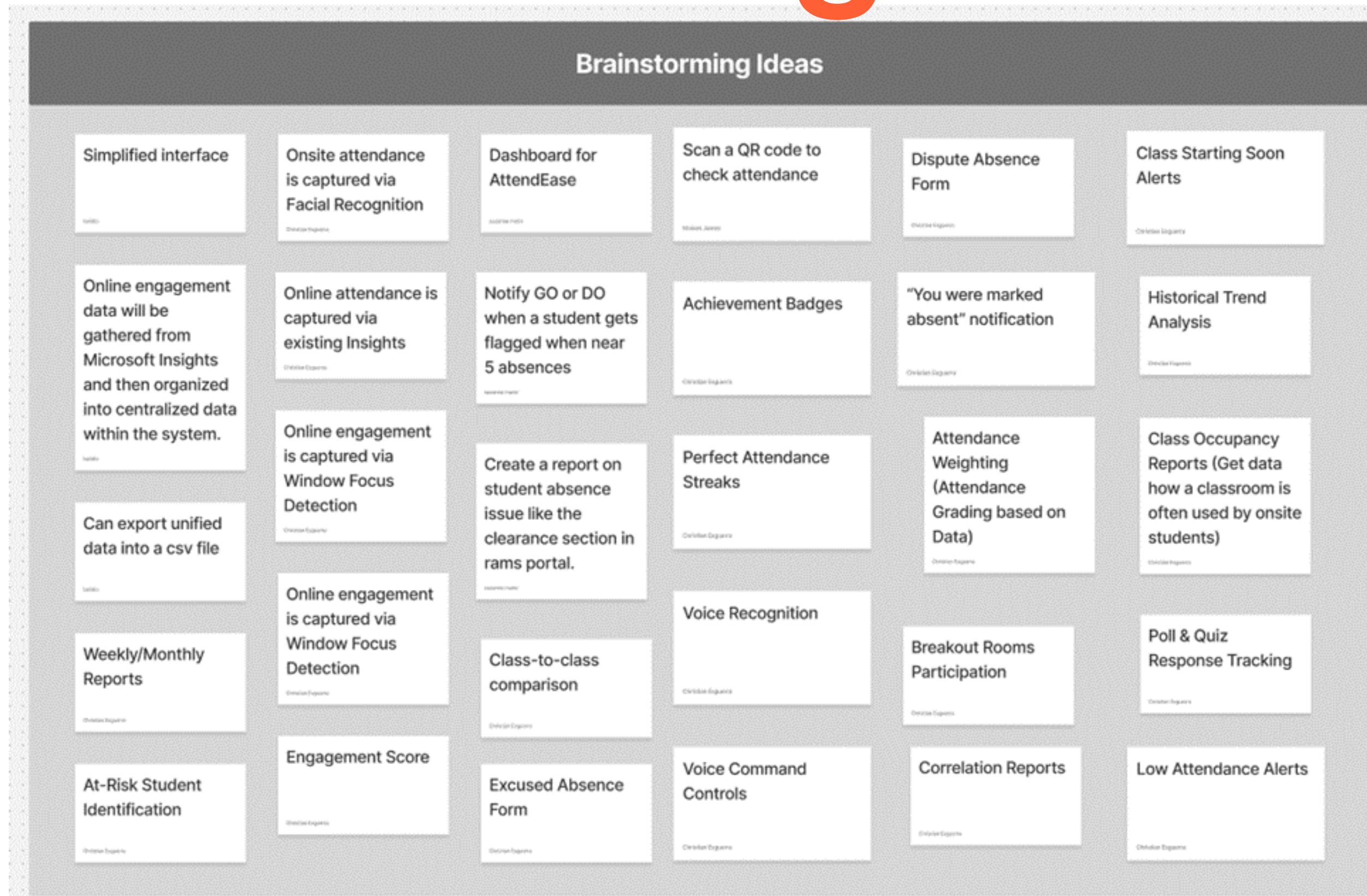
1. How might we ensure accurate and reliable records despite technical limitations?
2. How might we improve the use of time for attendance?
3. How might we capture student engagement (onsite/online)?
4. How might we make the system simple and non-disruptive during lectures?
5. How might we improve the centralization of attendance data?
6. How might we streamline the attendance process?
7. How might we use these data to improve student engagement?
8. How might we allow students to check in quickly without delays?
9. How might we notify offices (such as Academic Services) about consistent student absences?



Ideate

- Generate a range of **possible solutions**
- Platform: **FigJam, Microsoft Teams**
- Method: **Brainstorming, Crazy 8, Post-it**
- Filtered the best ideas using **DVF**

Brainstorming Session



Crazy 8's

Esguerra

dashboard - professor
TIME - 1:23 PM
select class
get attendance data

current class - TEST1
onsite live
onsite list
online list

Classes Export as CSV
test1 mm/dd/yy attendance
test2 mm/dd/yy attendance
test3 mm/dd/yy attendance
test4 mm/dd/yy attendance
test5 mm/dd/yy attendance
test6 mm/dd/yy attendance

after class report

dashboard - student
terms and conditions
continue
no face yet
name section
make sure to copy the image
add face to system
update information
Please have a straight face only.
SCAN COMPLETE!
back to dashboard

Balidio

Rosco

Log in/Register
Dashboard
Check Attendance for this day
Scan Complete
student | date | time | Status
camera uses facial recognition
Go back to dashboard

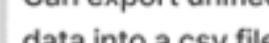
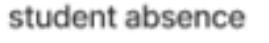
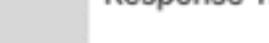
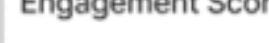
starts for class
attendance
Email Go/DO
Redirect link

dated/
WEEK
MONTH
open facial recognition
Recognition on-going

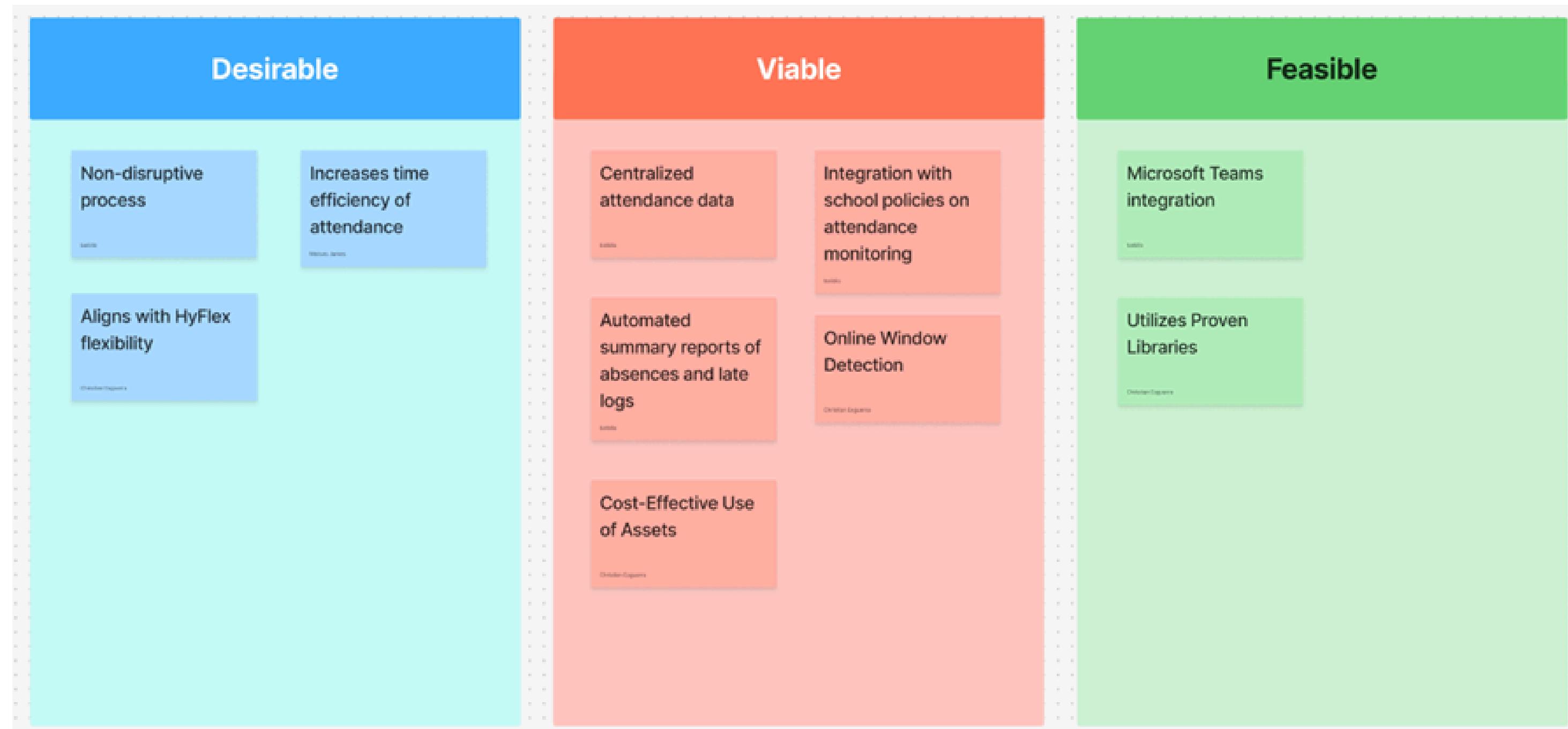
Professor

Post-it Voting

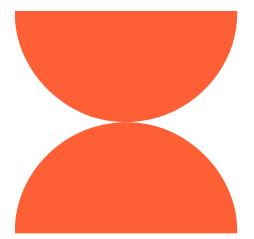
Post-It Voting

Simplified interface 	Onsite attendance is captured via Facial Recognition  Christian Espinoza	Dashboard for AttendEase  Autumn Morris	Scan a QR code to check attendance  Milton James	Dispute Absence Form  Christian Espinoza	Class Starting Soon Alerts  Christian Espinoza
Online engagement data will be gathered from Microsoft Insights and then organized into centralized data within the system.  Autumn Morris	Online attendance is captured via existing Insights  Christian Espinoza	Notify GO or DO when a student gets flagged when near 5 absences  Autumn Morris	Achievement Badges  Christian Espinoza	"You were marked absent" notification  Christian Espinoza	Historical Trend Analysis  Christian Espinoza
Can export unified data into a csv file  Autumn Morris	Online engagement is captured via Window Focus Detection  Christian Espinoza	Create a report on student absence issue like the clearance section in rams portal.  Autumn Morris	Perfect Attendance Streaks  Christian Espinoza	Attendance Weighting (Attendance Grading based on Data)  Christian Espinoza	Class Occupancy Reports (Get data how a classroom is often used by onsite students)  Christian Espinoza
Weekly/Monthly Reports  Christian Espinoza	Class-to-class comparison  Christian Espinoza	Voice Recognition  Christian Espinoza	Breakout Rooms Participation  Christian Espinoza	Poll & Quiz Response Tracking  Christian Espinoza	
At-Risk Student Identification  Christian Espinoza	Engagement Score  Christian Espinoza	Excused Absence Form  Christian Espinoza	Voice Command Controls  Christian Espinoza	Correlation Reports  Christian Espinoza	Low Attendance Alerts  Christian Espinoza

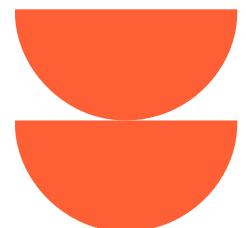
Desirable, Feasible, Viable



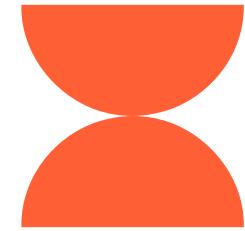
Design Thinking



Prototype



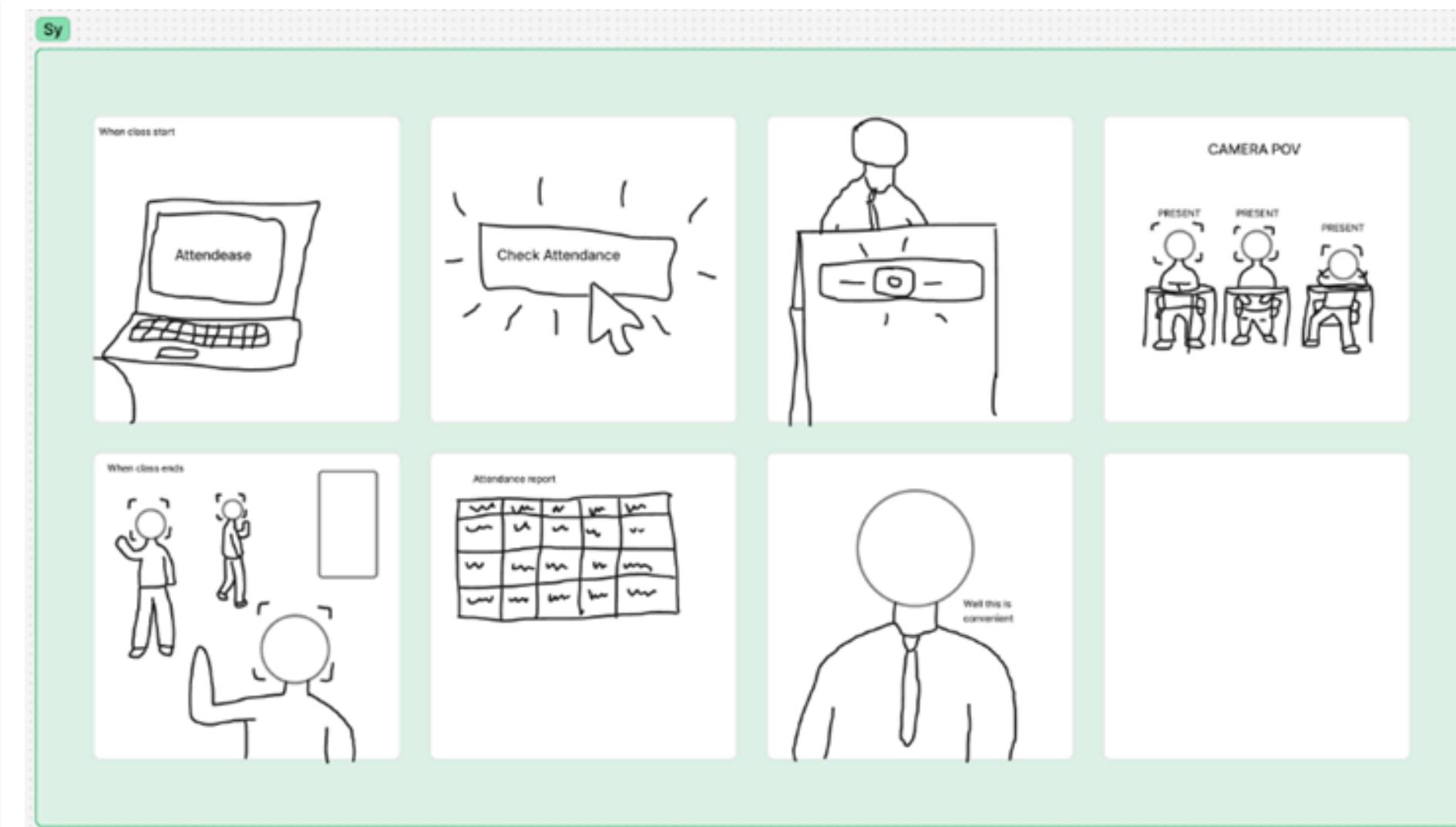
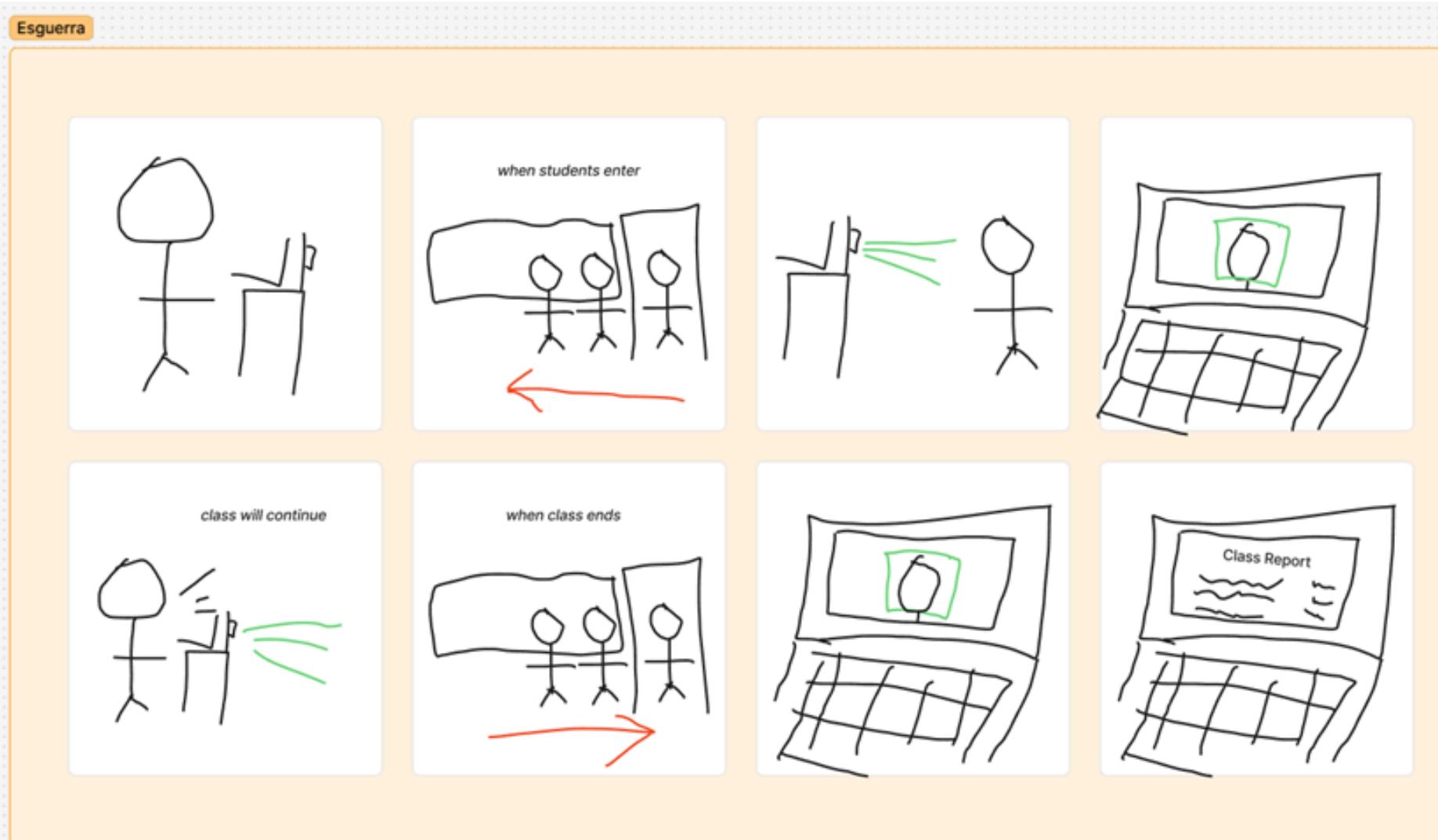
Test



Prototype

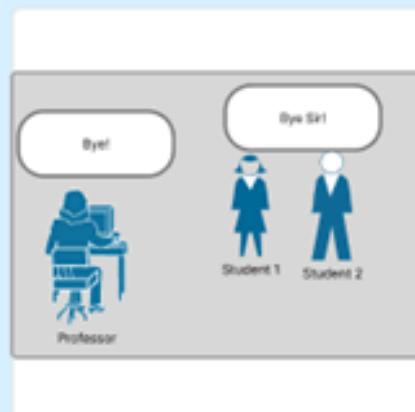
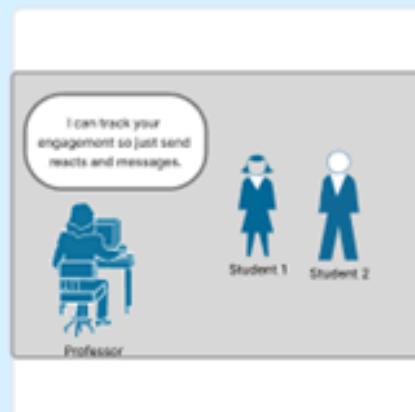
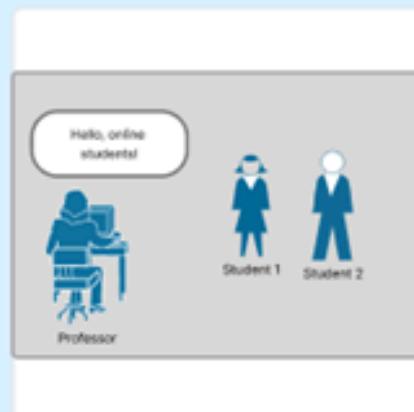
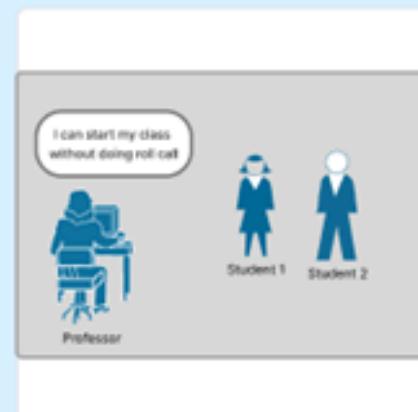
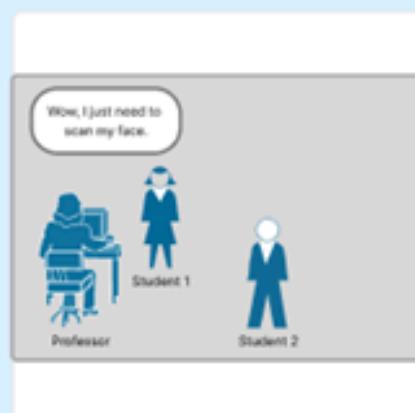
- Ideas to **prototype**
- User Interaction in **storyboard**
- **Low fidelity wireframe** for each interface
- Interactive **prototype** in Figma

Storyboard

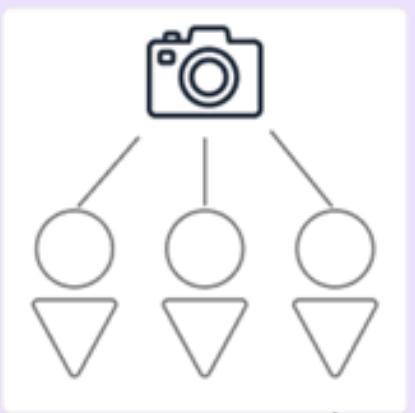
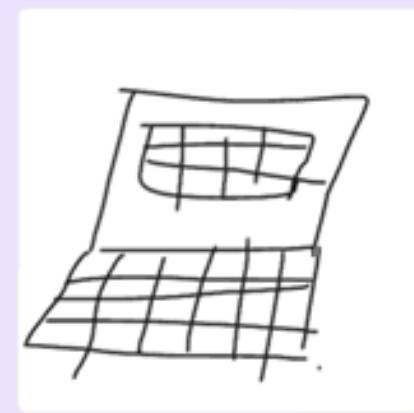


Storyboard

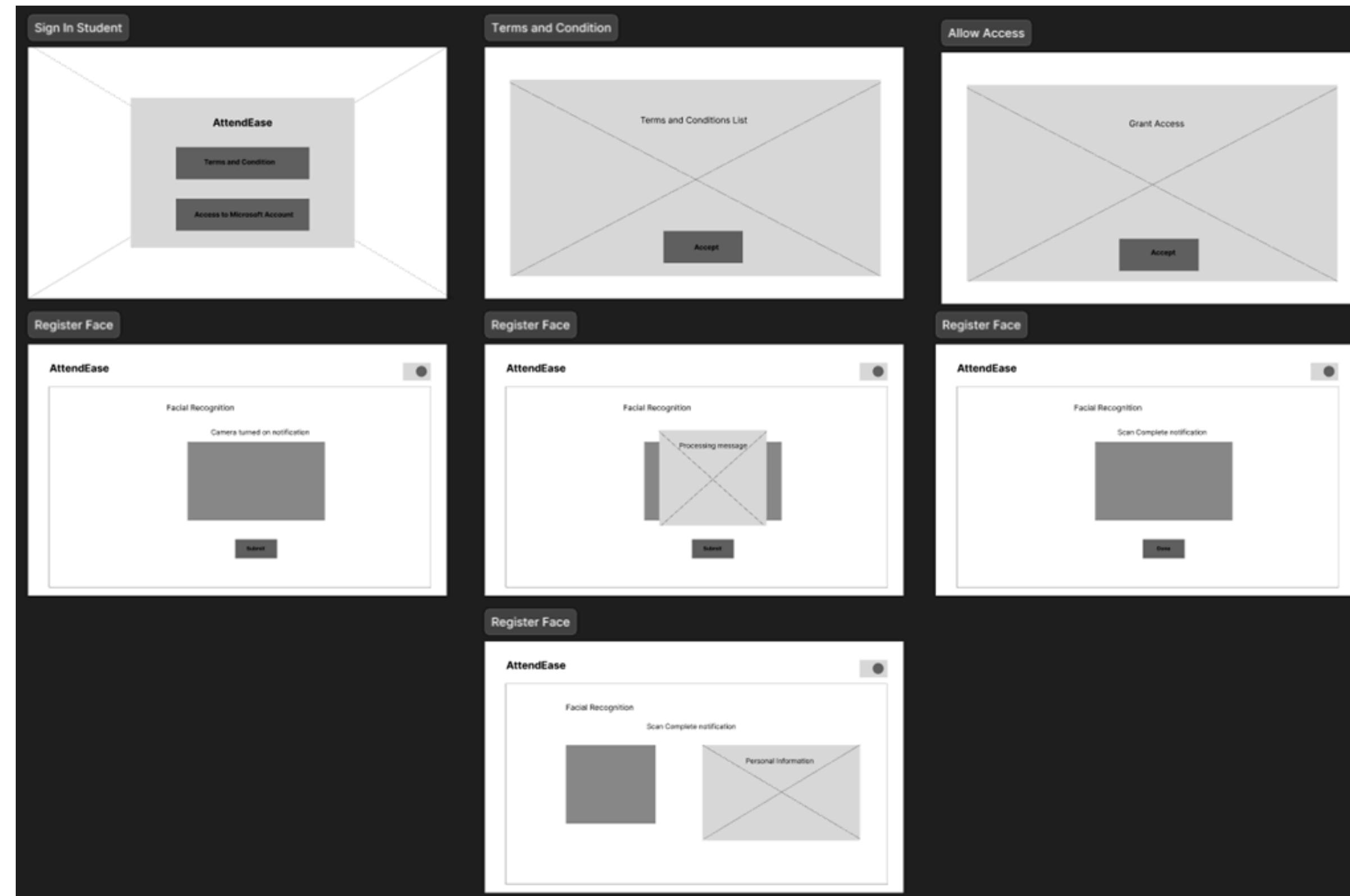
Balidio



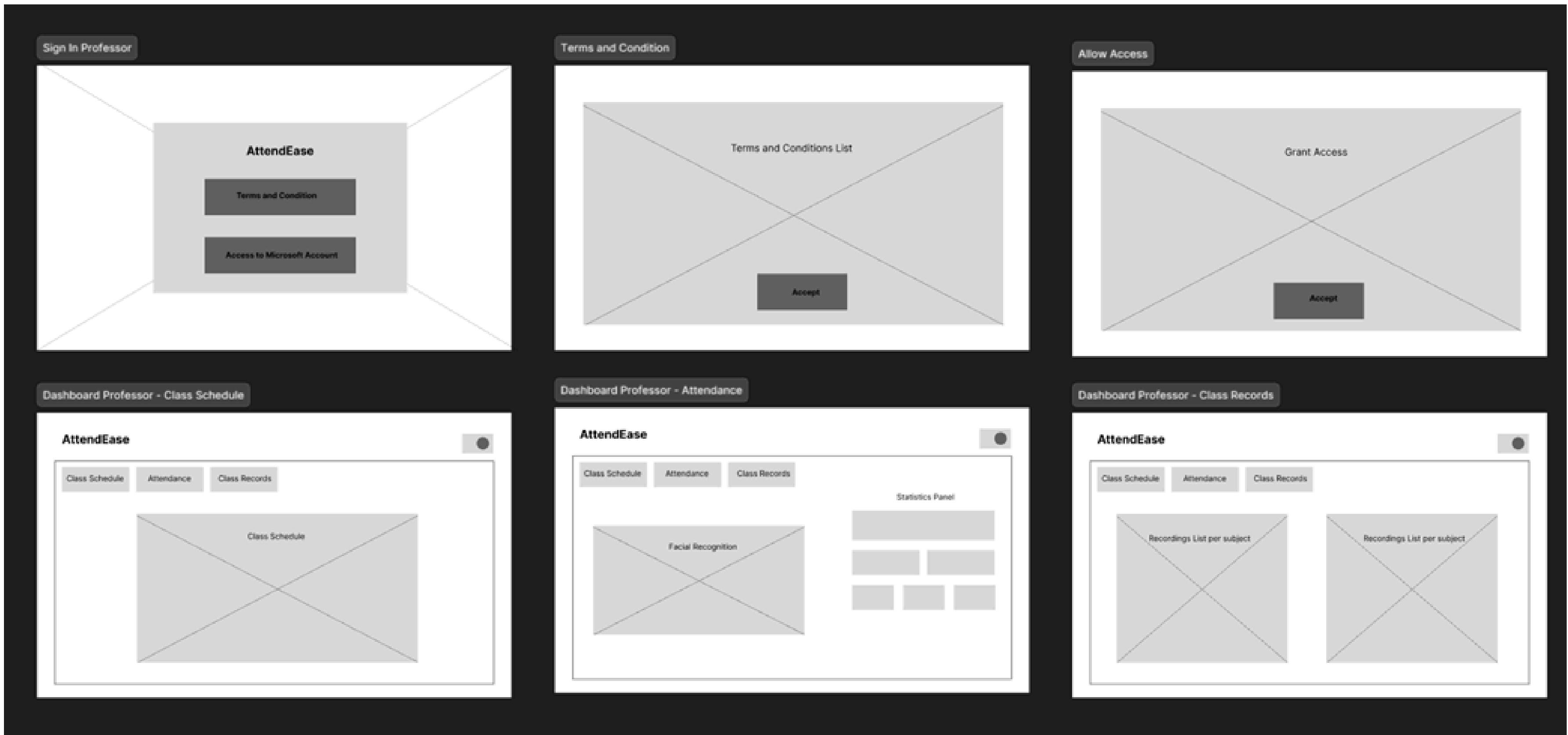
Rosco



Wireframe - Student Interface

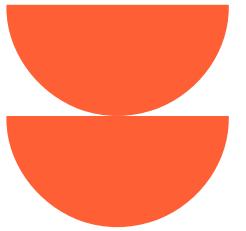


Wireframe - Professor Interface



Prototype

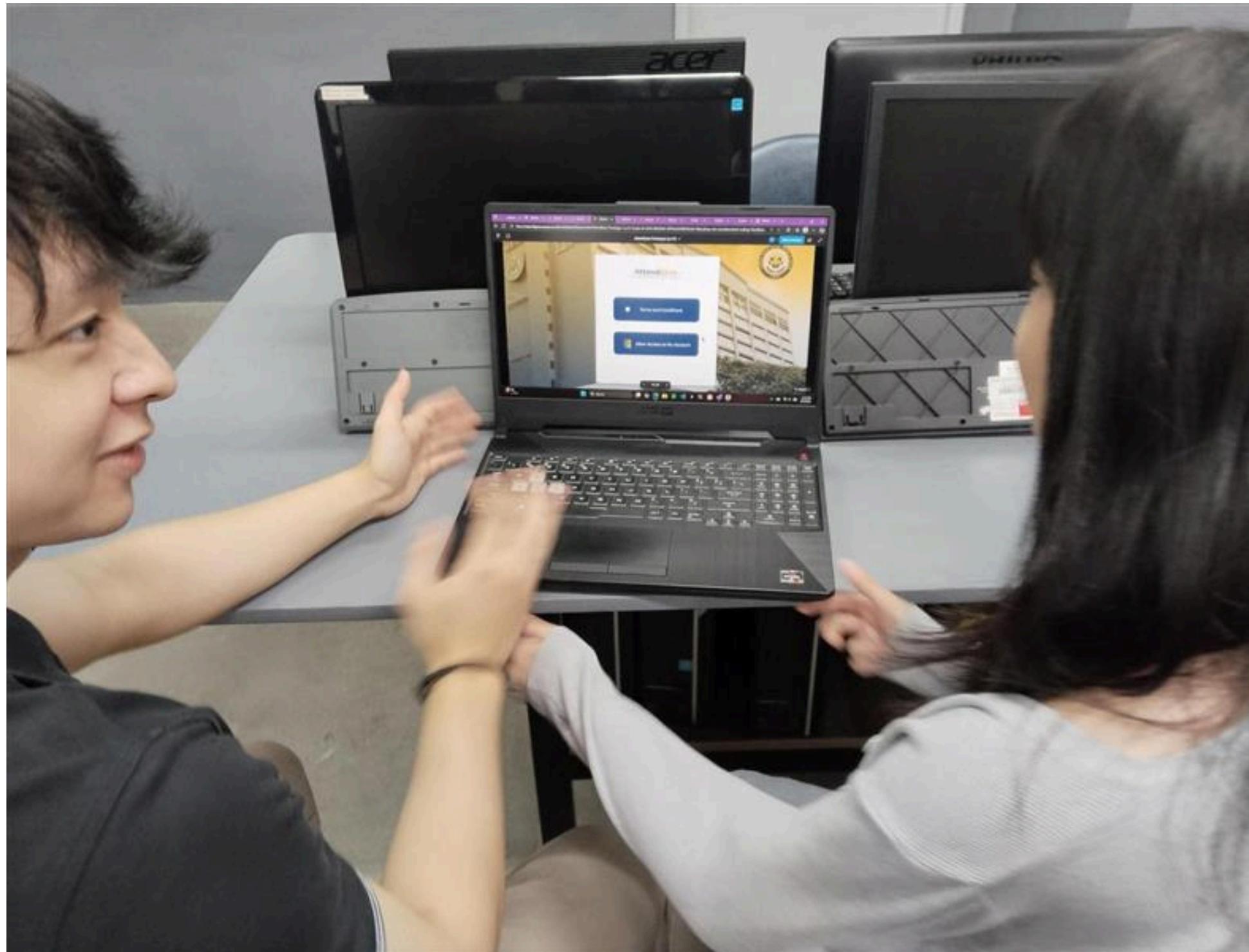
Figma Board



Test

- Stakeholder's **interaction** with prototype
- Feedback **acquired**

Feedback:



- Solution is **promising**
- Feedback will **guide refinements**

Dataflow Diagrams

01

Context Level

Overview of the System

02

Level 1

Subprocess of main processes

03

Level 2

Broken-down further subprocesses

Level 0 Diagram

Central Process:

- AttendEase System

External Entities:

- Student
- Professor
- System Administrator
- MS Teams

Inputs to AttendEase System:

- From Student:

- Login Credentials
- Facial Image Data
- Onsite Presence (via Camera)

- From Professor:
 - Login Credentials
 - Class Session Initiation
 - Report Generation Requests
- From System Administrator:
 - Login Credentials
 - User Account Data
 - Course Configuration Data
- From MS Teams:
 - SSO Authentication Token
 - Meeting Participant Data
 - Chat/Voice Activity Data

Outputs from AttendEase System:

- To Student:

- Authentication Status
- Profile Registration Confirmation

- To Professor:

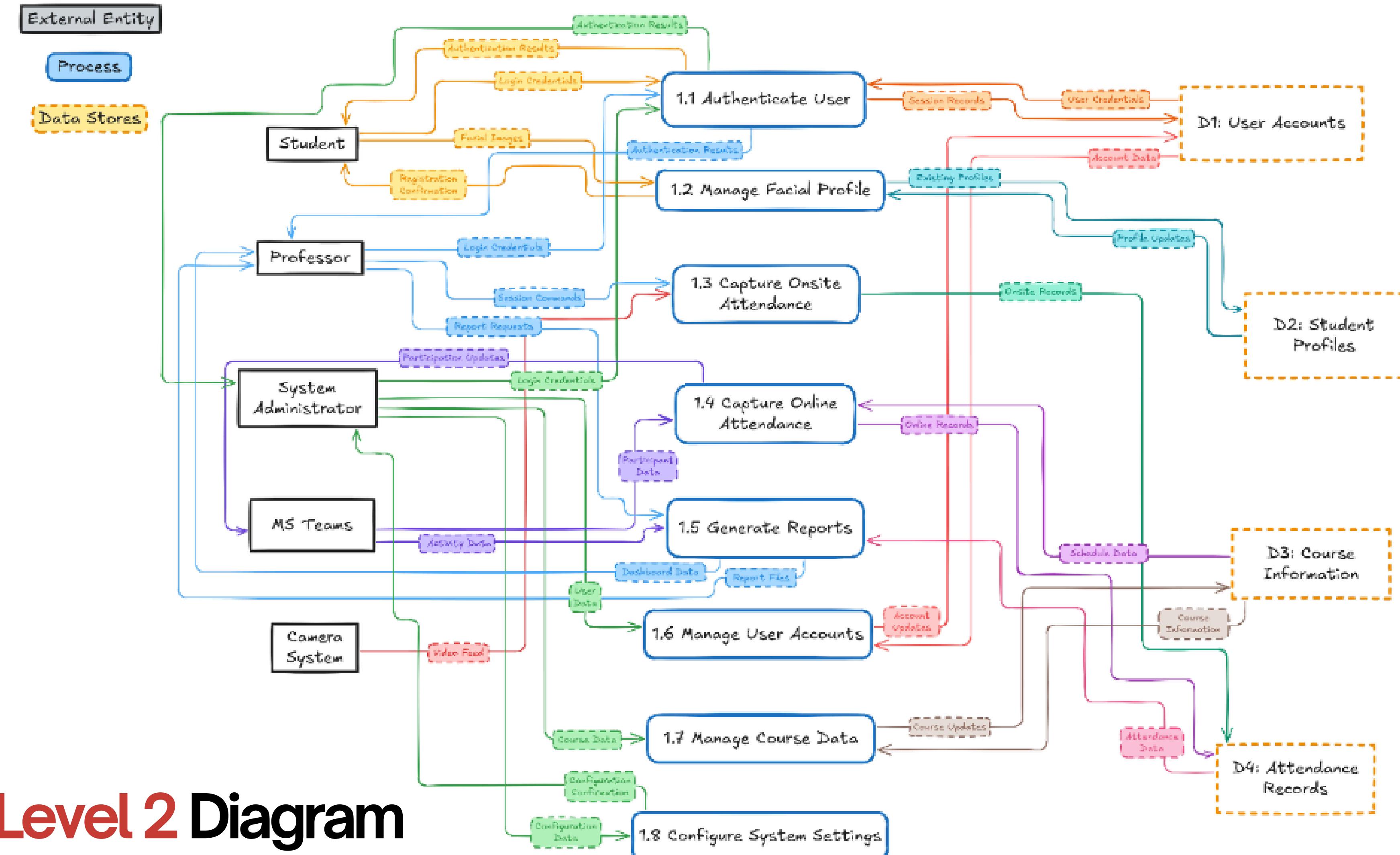
- Real-time Attendance Dashboard
- Attendance Reports
- Class Session Status

- To System Administrator:

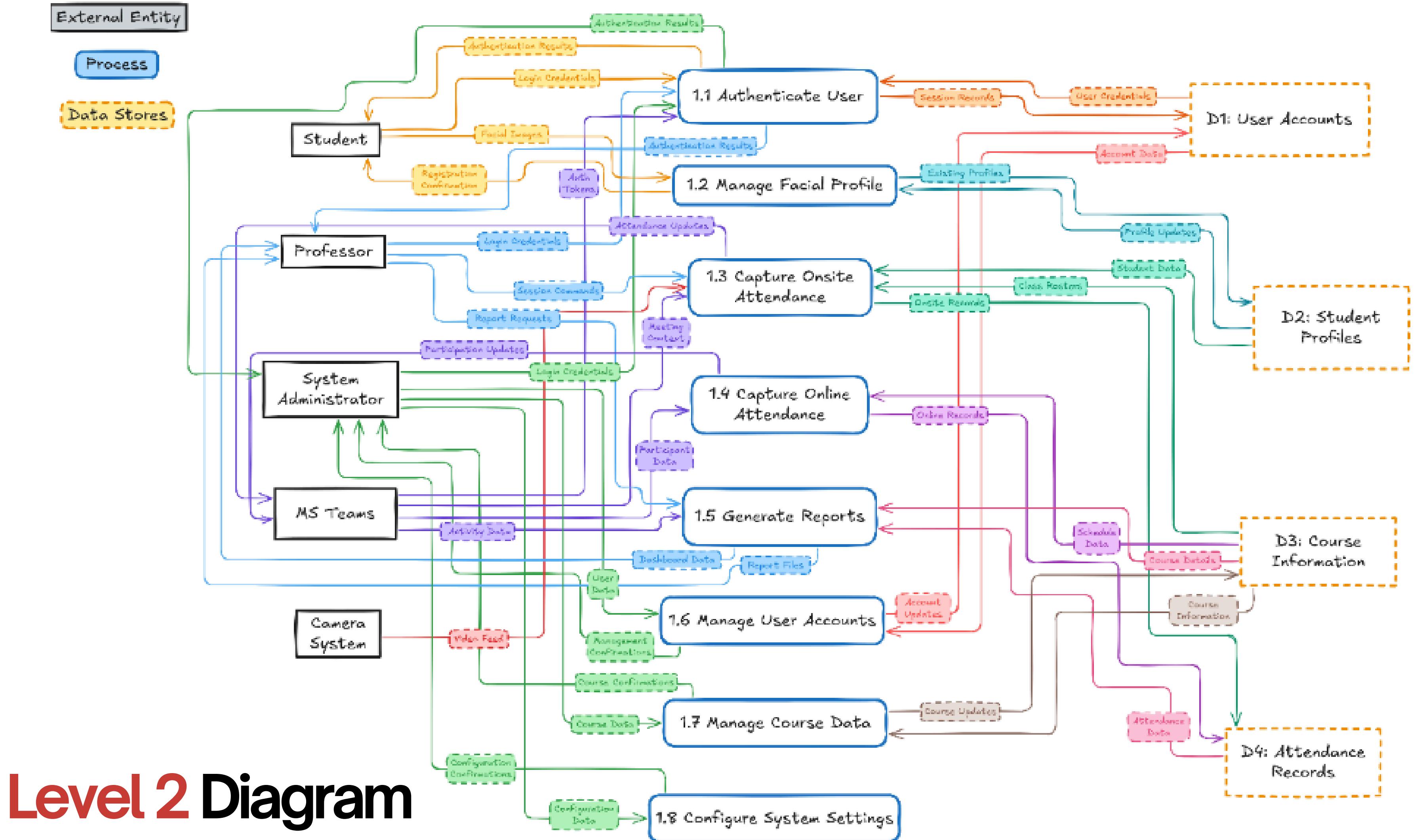
- System Logs
- User Management Confirmations

- To MS Teams:

- App Integration Data
- Attendance Summary Data

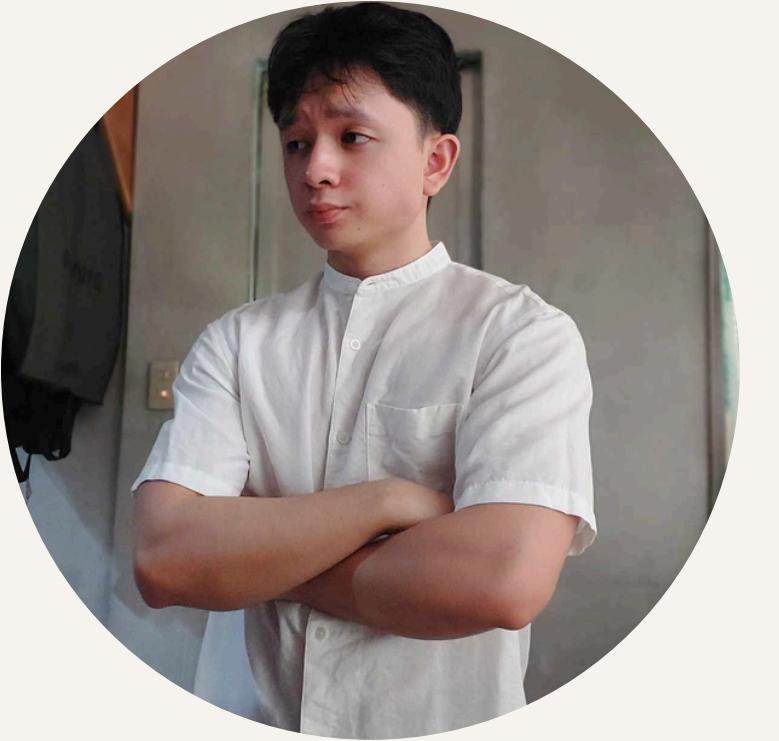


Level 2 Diagram



Openproject Outputs

https://openproject2025.apc.edu.ph/projects/apc-2025-2026-t1-ss231-g05-vector-four-apc-attendease/work_packages?query_id=446



Individual Contribution

Documentation:

- CH2 Docs Revisions
- Dataflow Diagrams Level 0 - Level 2
- FigJam Boards

Christian Luis Esguerra



Maria Sophea Balidio

Individual Contribution

Documented:

- Stakeholder Analysis
- Revisions of PM CH2 documents
- Stage 1 : Empathize
- Stage 2: Define
- Stage 3: Ideate
- Stage 4: Prototype
- Stage 5: Test

Presented:

- Objectives
- Define



Suzanne Marie Rosco

Individual Contribution

PM:

- Charter
- Stakeholder Analysis
-

Design Thinking:

- Stage 1: Empathize - interview with personas
- Stage 2: Define Conclusion
- Stage 3: Ideate participated in boards
- Stage 4: Prototype - participated in storyboard, wireframe lo-fi

Presentation:

- Presenter: PM Charter, Design Thinking Ideate
- PPT



Individual Contribution

PM:

- Scope

Design Thinking:

- Stage 3: Ideate participated in boards
- Stage 4: Prototype - participated in storyboard

Moises James Sy

THANK YOU!

