Project(AI)

1. Project Title: **College - Automated Session Participant Reporting System (Computer Vision AI)**

2. Project Statement and Outcomes:

1. Develop an automated attendance management system for educational institutions using face detection and recognition technologies. The system will streamline attendance tracking, subject-wise monitoring, and reporting, enhancing administrative efficiency and providing valuable insights into student attendance patterns.
2. The project will deliver an automated attendance system that accurately records student attendance in real time. By leveraging advanced technologies, the system will reduce manual effort for educators, improve administrative efficiency, and enable data-driven decision-making. Overall, the project will modernize attendance tracking practices, leading to a more efficient and effective learning environment in educational institutions.

3. Modules to be Implemented:

- Data Collection, Schema Design Module
- Student-Subject mapping Module
- Face Detection & Recognition Module
- Subject-wise Attendance Marking
- Report Highlights for Management Attention
- Review, Bug Fixes, Documentation

4. Week-wise module implementation and high-level requirements:

Week 1-2: Data Collection, Schema design & Student-Subject mapping Module:

- Collect a dataset of images for each student covering various facial expressions, angles, lighting conditions, etc., to improve accuracy.
- Database integration(like PostgreSQL) to store student information(Name, email, and corresponding face images) and course details.
- Create a table that stores the students, and course timetable details.

Week 3-4: Face Detection & Recognition Module

- Implement a face detection algorithm to locate faces in images.
- Haar cascades or deep learning-based methods like MTCNN can be used.
- Train a face recognition model using the detected faces.
- Develop mechanisms to handle recognition errors and ensure robust performance in diverse conditions.

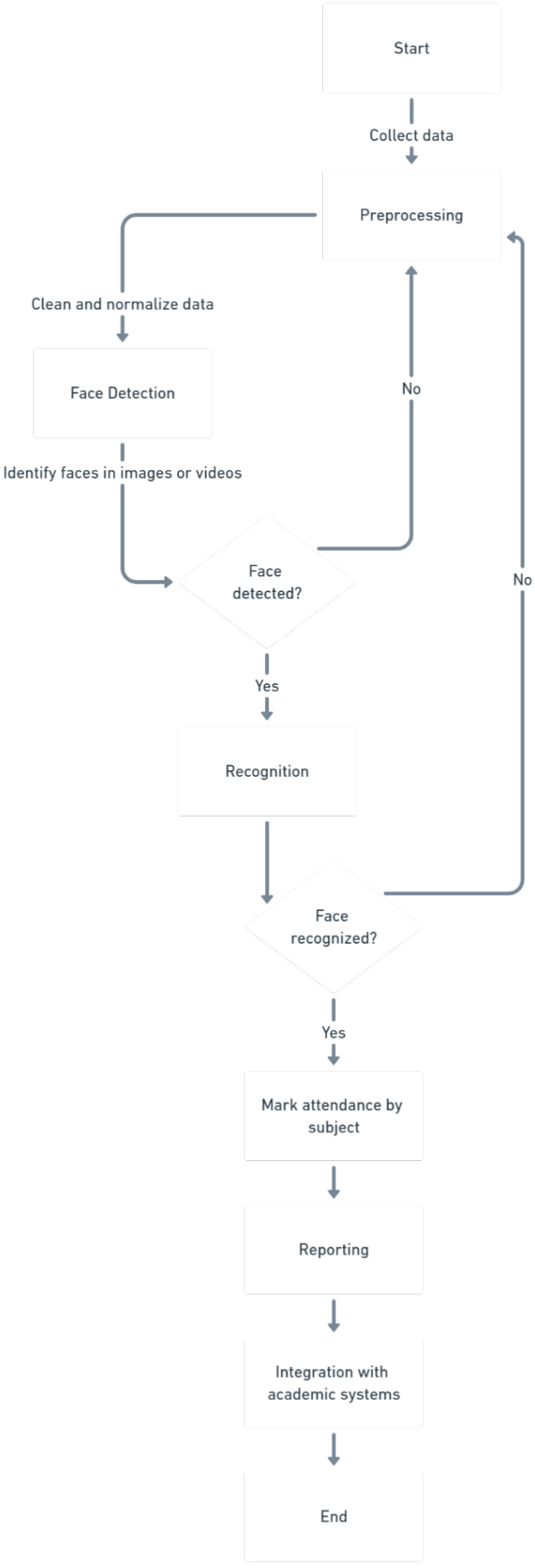
Week 5-6: Subject-wise Attendance Marking & Report Highlights for Management Attention

- Design algorithms to mark attendance based on recognized faces and subject-wise schedules
- Store the attendance details in a table.
- Develop a reporting system to generate subject-wise attendance reports.
- Generate reports daily, weekly and monthly for management.

Week 7-8:Review, Bug Fixes, Documentation

- Conduct a thorough review of the entire system, including functionality, security, and user interface.
- Address any identified bugs or issues and perform necessary fixes.
- Prepare comprehensive documentation covering system architecture, user guides, and technical specifications.

5. Diagrams: Flowchart



6. Output:

A CSV file to be generated representing subject wise attendance of the students.

Daily Report:

A	B	C	D	E	F
Maths	**English**	**Social**	**Science**	**Hindi**	**Computers**
Ayush	Ayush	Ajith	Ayush	Ishwarya	Ayush
Ajith	Ajith	Inam	Ajith	Ajith	Ajith
Inam	Priya	Izaz	Inam	Inam	Inam
Ishwarya	Keerthy	Krishna	Priya	Izaz	Priya
Keerthy	Hari	Ishwarya	Keerthy	Krishna	Keerthy
Izaz	Izaz	Hari	Izaz		Izaz
Krishna	Karthik		Krishna		Krishna
Hari			Karthik		Karthik
			Hari		Ishwarya
					Hari

Monthly Report :

	A	B	C	D	E	F	G	H
1	**Date**	**Maths**	**English**	**Social**	**Scince**	**Hindi**	**Computers**	
2	1-May	23	34	12	34	45	15	
3	2-May	34	56	12	23	45	13	
4	3-May	12	15	17	13	12	11	
5	4-May	25	36	19	30	38	19	
6	5-May	23	34	14	28	26	20	
7								
8								