FYP

# **AttendEase:** Facial Recognition Attendance System


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# Summary



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# Problem Statement



- **Buddy Punching**: Students may falsely mark attendance for absent peers, compromising system integrity.
- **Time-Consuming Roll Calls**: Manual attendance is slow and burdensome, distracting educators from teaching.
- **Disrupted Lessons**: Roll calls interrupt instructional time, reducing class productivity.
- **Inefficiency in Large Crowds**: Current systems struggle with quick and accurate attendance tracking for large groups.

# Objective



The objective of this project is to develop a robust and user-friendly Attendance System using facial recognition through photos and videos

- **It achieve the following objectives mainly**

  - **Enhance Security:** Ensure secure and reliable attendance tracking to prevent misuse.
  - **Simplify Management:** Streamline attendance processes for both educators and institutions.
  - **Support Integration and Scalability:** Design a system that integrates seamlessly with existing frameworks and scales with organizational needs.

# FYP Scope



Our system is designed to revolutionize attendance tracking through the integration of advanced **facial recognition technology**. By leveraging state-of-the-art algorithms for photos and videos, along with deep learning models and precise feature extraction techniques, it ensures accurate and efficient attendance recording.

- **Real-Time Monitoring**: The system processes video streams continuously, updating attendance data instantly, which eliminates delays and provides real-time insights.
- **Seamless Integration**: It integrates effortlessly with existing attendance management systems, enabling faculty to record attendance, review detailed records, and notify parents with ease, fostering better communication and accountability.
- **Comprehensive Analytics**: Administrators gain access to in-depth attendance reports and analytics, allowing them to monitor trends, address absences effectively, and make informed decisions.
- **Automation and Convenience**: By automating the attendance process, the system removes the need for manual methods such as roll calls or ID cards, saving time and minimizing errors.
- **Security and Scalability**: The system implements robust security measures to prevent unauthorized access and ensures accurate identification in varying environments. It is scalable to handle attendance for both small and large groups efficiently.

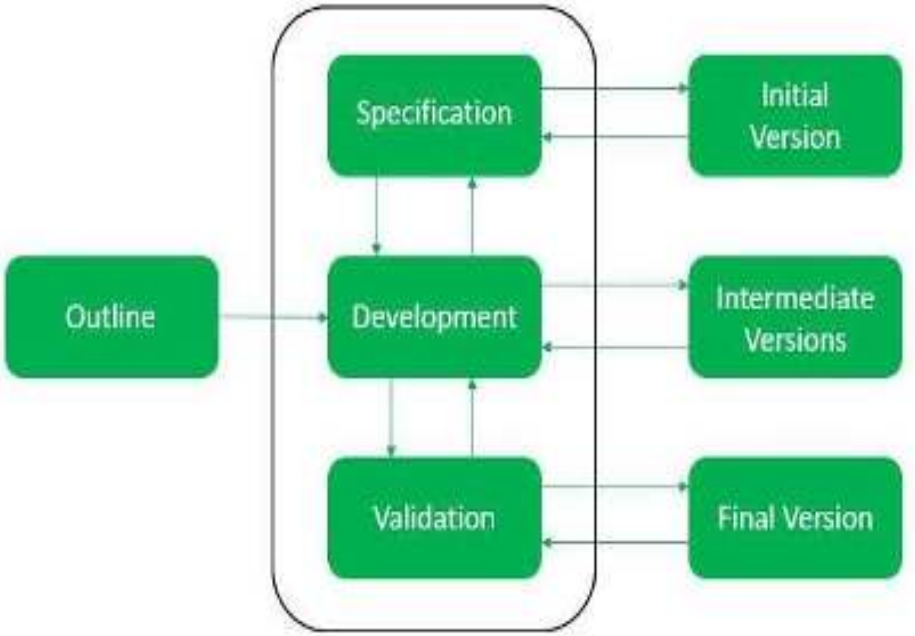
# Our Methodology



## Evolutionary Prototyping

## Key Principles:

- Initial version creation.
- Continuous refinement.
- User-centered design.
- Responsive to user feedback and changing requirements.




## Benefits:

- Rapid iteration and improvement
- Increased user satisfaction.
- Effective adaptation to changing needs.

# Our Project Plan



# Budget / Costing



- Estimated budget of project major resources

- SSD (Rs. 15,000 x 2 = PKR 30,000 est.)
- Laptop (Rs. 150,000 = PKR 150,000 est.)
- Printing PKR 20,000
- Internet dongle PKR 12000/year est
- Miscellaneous PKR 20,000 est.

- **Total cost PKR 232,000 est.**

# FYP Deliverables



## FYP-2 Evaluation

- Complete Project
- FYP Report
- Test Plan/Test Case
- Compliance Report
- Sign off Sheet

# Literature Review

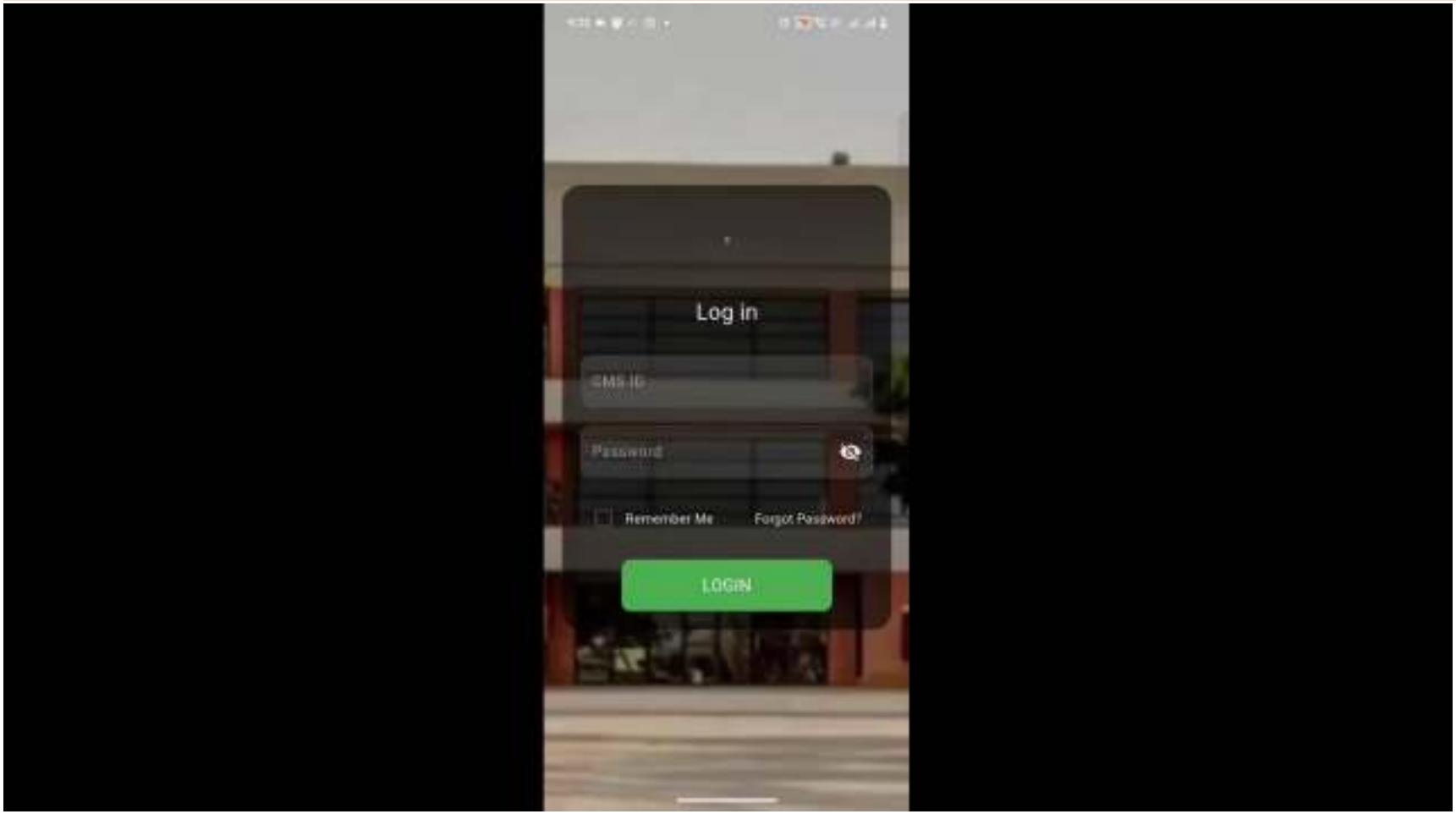


Facial recognition technology has been extensively researched and applied in multiple fields, such as security, healthcare, and education. The literature emphasizes the capability of this technology to automate tasks, boost efficiency, and improve data precision. The following is a summary of pertinent research and developments concerning facial recognition and attendance systems.

- Automated Attendance Systems By Hao Yang and Xiafeng Han (2020)
- Deep Learning In Facial Recognition By P. Sinha et al (2006)
- Challenges In Facial Recognition Systems
- Application In Educational Settings By Wan et al (2019)
- Integration With Existing Systems

# Demo of 100% Of Work





# Test Plan and Test Case



| S. No | **Description** | **Test Engineer** | **Start Date** | **End Date** |
|---|---|---|---|---|
| 1 | Login Screen | M. Umer Saleem | 03-Mar-2025 | 03-Mar-2025 |
| 2 | Dashboard | M. Umer Saleem | 16-Mar-2025 | 16-Mar-2025 |
| 3 | Notifications | M. Umer Saleem | 04-Apr-2025 | 04-Apr-2025 |
| 4 | Attendance Upload Page | M. Umer Saleem | 14-Apr-2025 | 14-Apr-2025 |
| 5 | Attendance View | M. Umer Saleem | 08-May-2025 | 08-May-2025 |
| 6 | View Statistics | M. Umer Saleem | 21-May-2025 | 21-May-2025 |
| 7 | Result Upload page | M. Umer Saleem | 07-Jun-2025 | 07-Jun-2025 |
| 8 | Calendar Page | M. Umer Saleem | 22-June-2025 | 22-June-2025 |

# Test Plan and Test Case



**Test Case # 01**
Test Case Description: To check the Login page verification validity

**Test Case # 02**
Test Case Description: To check attendance updation

**Test Case # 03**
Test Case Description: To check email generation

**Test Case # 04**
Test Case Description: To check if the dynamic analytical graph responds to updation in the attendance

**Test Case # 05**
Test Case Description: To Check saved attendance

**Test Case # 06**
Test Case Description: To check the Calendar Page

# Reference




- Mishra, R., & Jain, V. (2020). Face Recognition Based Attendance Management System. ResearchGate. www.researchgate,net'publication/341876647_Face_Recognition_based_Attendance_Management_System
- Gupta, V., & Kashyap, M. (2024). Smart Attendance System Using Face Recognition. International Journal of Research Publication and Reviews (IJRPR), Vol. 5, Issue ijrpr.com/uploads/V5ISSUE3/IJRPR23389.pdf
- Kumar, R., & Singh, M. (2023). Face Recognition Attendance System Using Artificial Intelligence. Quest Journals - Journal of Software Engineering and Simulation, Vol. 5, Issue 2, pp. 18-29. www.questjournals.org/jses/papers/Vol5-issue-2/DO5021829.pdf
- Trivedi, N., & Tripathi, R. (2020). Face Recognition-Based Automated Attendance System. Semantics Scholar. www.semanticscholar.org/paper/Face-Recognition-Based-Automated-Attendance-System-Trivedi-Tripathi
- Sharma, N., & Rahman, M. (2024). Facial Recognition in Modern Atendance Systems: A Technological Review. SSRN. www.papers.ssrn.com/sol3/papers.cfm?abstract_id-4833698
- Raj, A., Patel, H. (2021). Face Recognition-Based Attendance System. International Journal of Engineering Research & Technology (1JERT), Vol. 9, Issue 6. https://www.ijert.org/research/face-recognition-based-attendance-system-JERTV91S060615.pdf
- Fatima, S., & Khan, A. (2024). AI-Driven Face Recognition for Classroom Attendance. International Journal for Multidisciplinary Research (FMR), Vol. 6, Issue 2 www.ijfmr.com/papers/2024/2/17655.pdf
- Aljasser, F.A., & Salman, M. (2022). Real-Time Face Recognition and Detection for Class Attendance Using Deep Learning. www.arxiv.org/abs/2211.07582
- Nguyen-Tat, B.-T., Bui, M.-Q., & Ngo, V. M. (2024). Automating Attendance Management in Human Resources: A Design Science Approach Using Computer Vision and Facial Recognition. www.arxiv.org/abs/2405.12633
- Salac, D. M. V. (2020). PRESENT: An Android-Based Class Atendance Monitoring System Using Face Recognition Technology. arXiv:2012. 01907. www.arxiv.org/abs/2012.01907
- Yang, H., & Han, X. (2020). Face Recognition Attendance System Based on Real- Time Video Processing. IEEE Access, Vol. 8, pp. I59143-159150. www.doi.org/10.1109/ACCESS.2020.3018810
- Kar, N., Debbarma, M. K., Saha, A., & Pal, D. R. (2013). Study of implementing Automated Attendance System Using Face Recognition Technique. International Journal of Computer and Communication Engineering (IJCCE), Vol. 1, No. 2, pp. 100- 103. www.doi.org/10.7763/1JCCE.2012.V1.33
- Sinha, P., Balas, B., Ostrovsky, Y., & Russell, R. (2006). Face Recognition by Humans: Nineteen Results All Computer Vision Researchers Should Know About. Proceedings of the IEEE, Vol. 94, Issue 11, pp. 1948-1962. https://doi.org/10.1109/JPROC.2006.884093