LSEP (Legal, Social, Ethical, Professional) – 10%

1. Legal Compliance

Our project complies with all applicable rules and regulations to ensure the secure processing of user data. The system complies with the Personal Data Protection Act (PDPA) of 2010, ensuring that all personal information, including facial images and student IDs, is gathered, stored, and processed securely and used only for attendance purposes. All third-party tools, including the Face++ API, are used in line with their licensing agreements, and any original code or materials generated by the team are protected by the Copyright Act 1987. In accordance with the Computer Crimes Act of 1997, the system does not enable cybercrime or illegal access. The system does not require any hazardous operations, and all servers and user devices meet conventional IT security requirements. Furthermore, before registering face data, each user provides explicit consent and is informed of how their data will be utilised.

2. Ethical Guidelines

The project is intended to function ethically and treat all users fairly. Every user has equal access to the system, with no discrimination based on age, gender, ethnicity, or other characteristics. Facial data is utilised solely for attendance purposes, and strict measures are in place to avoid misuse, bias, or unauthorised disclosure. Transparency is maintained by clearly informing users about how their data will be gathered, stored, and deleted, and by encrypting personal and facial data to protect confidentiality, with access limited to authorised staff. The system avoids harm and adheres to ethical norms throughout its activities.

3. Social Impact

The smart attendance system is intended to enhance campus life and community efficiency. Automating attendance reduces lecturers' workload, ensures correct records, and minimises human errors. Students and staff benefit from faster and more convenient attendance practices, and the system promotes technical literacy on campus. In addition, the technology saves paper by removing manual attendance sheets, which contributes to environmental sustainability. Any potential privacy issues are handled by making facial recognition optional and conducting data collection and use awareness sessions. The main beneficiary is the lecturers.

4. Professionalism

The project team adheres to professional standards in all phases of development and implementation. High-quality coding practices, extensive testing, and detailed documentation ensure that software is both dependable and maintainable. Team communication is organised around weekly progress updates and regular meetings to ensure accountability and openness. Attendance logs and reports are accurate, and each team member is accountable for the responsibilities assigned to them. Throughout the development lifecycle, the project maintains professionalism in its delivery, documentation, and collaborative efforts.

5. Risks

The initiative analyses potential hazards and plans to mitigate them. Technical risks, such as software problems or Face++ API outages, are mitigated by thorough testing, version control, and fallback procedures for attendance tracking. We utilise GitHub for version control, which allows the team to track changes, collaborate on code, and recover prior versions if necessary, lowering the chance of code loss or errors. The use of encrypted storage, secure authentication, and controlled data access helps mitigate security concerns, including the risk of data breaches. Cloud hosting and regular backups help mitigate operational risks, such as server disruptions. These safeguards ensure that risks are reduced while the system remains dependable and secure.

6. Sustainability

The system is intended for long-term sustainability and environmental friendliness. Cloud-based hosting eliminates the need for physical hardware and saves energy consumption, whereas the digital attendance system eliminates manual attendance sheets, resulting in significant paper savings. The interface is user-friendly and accessible across numerous platforms, ensuring long-term usability for students and staff. Besides that, the modular code structure facilitates maintenance and scalability, allowing the system to expand to accommodate more users or other campuses without requiring substantial repairs.

7. Continuity

To ensure that the project runs well after development, a complete maintenance plan will be established, including scheduled updates and bug fixes. The system is built to accommodate future enhancements, such as increased facial recognition accuracy and additional functions. To ensure financial sustainability, budget planning accounts for API usage, server maintenance, and license expenses. Comprehensive handover documentation, including instructions and code comments, will help future teams maintain and upgrade the system more efficiently.