5. Other Nonfunctional Requirements

5.1. Performance Requirements:

The system should provide a response time of less than 3 seconds for any user action, such as generating QR codes or sending attendance confirmations. The system should be designed to handle a scalable number of users.

5.2. Safety Requirements:

The system must comply with relevant data protection laws and regulations, ensuring the privacy and confidentiality of student and doctor information. Measures should be in place to ensure the integrity of data during transmission and storage, preventing unauthorized tampering or manipulation. Implement measures to ensure the security of QR codes, preventing unauthorized generation or duplication. In the case of planned system maintenance or unexpected downtime, and any unsaved data should be preserved.

5.3. Security Requirements:

Only individuals with valid academic credentials and affiliations should be allowed to register as students or doctors. Only professor and teaching assistant can register inter to the website. Professor only can perform his/her particular actions. And no one without registered can inter to the app (only student). Implement secure algorithms for QR code generation to prevent malicious attempts to manipulate or counterfeit attendance records.

5.4. Software Quality Attributes:

Availability: The attendance registration system should be available and responsive 99.9% of the time during scheduled class hours.

Flexibility: Scanning Options: The system seems flexible as it supports both fingerprint and facial recognition for identity verification, providing options for students.

Maintainability: Integration with Professor's System: The system's ability to register attendance in the professor's table indicates integration capabilities, contributing to maintainability by ensuring seamless interaction with existing systems.

Integrity: The system should ensure that the data recorded in the attendance table accurately represents the students who have scanned the QR code and successfully verified their identity.

Security Measures: the system should implement robust security measures to prevent unauthorized access or tampering with attendance records.

Portability: The system will run on windows 10 or above and Android Operating System.

Correctness: Both fingerprint and facial recognition features should have a high accuracy rate to prevent false detection.

Efficiency: It takes a student 5 seconds to complete the QR scan.

Testability: testing face recognition and fingerprint.

Reliability: The system must be available and accessible. Students should be able to use the attendance recording system and professors to register without experiencing frequent pauses or interruptions.

5.5. Business Rules:

QR codes generated for attendance confirmation should have a limited validity period (e.g., 3 hours) to prevent misuse or attempts to reuse codes for multiple sessions. Professor must ensure that students attend before the end of the lecture. Implement a data retention policy, specifying the duration for which attendance records and other data will be stored.