**Other Non-functional Requirements**

Performance Requirements:

· The system should handle atleast 10,000 **concurrent users** without significant lag.

· Queries for train schedules, ticket availability, and booking details should return results within **3 seconds**.

· Booking confirmation and seat allocation should be processed within **5 seconds**.

Safety and Security Requirements:

· All user passwords and sensitive data (such as payment details) must be stored using Fernet **encryption**.

· The system should implement **role-based access control (RBAC)** to restrict unauthorized modifications to train schedules, bookings, and staff records.

Software Quality Attributes:

### ****Reliability****

* The system should maintain 100**% uptime**, ensuring continuous access to booking and train information.
* Data should be automatically backed up to prevent loss in case of server failures.

### ****Maintainability****

* The system should follow **modular code design** to allow easy updates or feature additions without affecting the entire system.
* Database indexing and query optimization implemented to improve performance.

### ****Usability****

* The user interface should be **simple and intuitive**, allowing customers to book tickets with a maximum of 5 **clicks**.

### ****Scalability****

* The system should be capable of handling a **10x increase in user traffic** without significant degradation in response time.
* It should support easy expansion to accommodate **new railway routes and services**.