**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

|  |  |
| --- | --- |
| Date | 26-05-2025 |
| Team ID | LTVIP2025TMID55946 |
| Project Name | Docspot |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

**Solution Requirements:**

These specify how the solution should be implemented — technical, architectural, and operational needs:

1. Architecture

* Scalable, cloud-based architecture (e.g., AWS, Azure, or GCP).
* Modular microservices architecture preferred for flexibility.

2. Security & Compliance

* End-to-end encryption of data (in transit and at rest).
* Compliance with HIPAA (USA), GDPR (EU), or other local healthcare laws.
* Role-based access control (RBAC).

3. Performance

* <2 seconds average response time for searches and bookings.
* High availability (99.9% uptime).

4. Interoperability

* Support for integration with EHR/EMR systems (e.g., using HL7 FHIR standards).
* API-based access for third-party systems (labs, pharmacies, insurance).

5. User Interface (UI/UX)

* Intuitive and mobile-first design.
* Accessibility compliant (WCAG 2.1).

**Functional Requirements:**

The healthcare appointment booking system must allow patients to register for an account, log in securely, and manage their profile information. Patients should be able to search for healthcare providers using multiple criteria such as name, specialty, location, availability, accepted insurance, gender, and language spoken. The system should provide real-time visibility into doctors’ schedules, allowing patients to easily view available time slots and book appointments accordingly. It should support both in-person and virtual (telehealth) appointment types, giving users the flexibility to choose their preferred mode of consultation. Patients must also be able to reschedule or cancel appointments with appropriate confirmation and update notifications.

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

|  |  |
| --- | --- |
| **Non functional Requirement** | **Discription** |
| **Availability** | System must have at least 99.9% uptime to ensure continuous access to booking functionality. |
| **Performance** | Response time for user actions (e.g., search, booking) should be under 2 seconds. |
| **Scalability** | The system should handle increasing user load and appointment volume without performance loss. |
| **Security** | End-to-end encryption, secure authentication, and role-based access controls are mandatory. |
| **Compliance** | Must comply with regulations such as HIPAA, GDPR, or relevant local healthcare laws. |
| **Usability** | Interface should be intuitive and user-friendly across all platforms and device types. |
| **Accessibility** | System must meet WCAG 2.1 accessibility standards to support users with disabilities. |
| **Localization** | Support for multiple languages, time zones, and regional formats for international use. |