

## Non-Functional Requirements

- The system should provide responsive user interfaces, with a maximum response time of 2 seconds for standard operations.
- It should handle a minimum of 100 concurrent users without degradation in performance.
- The system should have a minimum uptime of 99.9% to ensure continuous availability.
- It should include automatic backup and recovery mechanisms to prevent data loss in case of system failures.
- All patient data should be stored securely, following industry-standard encryption protocols.
- Access to sensitive information should be role-based, ensuring that only authorized personnel can view and modify patient records.
- The system should be compatible with the latest versions of popular web browsers (e.g., Chrome, Firefox, Safari).
- It should be accessible from both desktop and mobile devices without compromising functionality.
- The user interface should be intuitive and user-friendly, requiring minimal training for new staff members.
- The system should comply with accessibility standards, ensuring it is usable by individuals with disabilities.
- The codebase should be well-documented to facilitate easy maintenance and updates.
- Regular software updates and patches should be easily deployable without disrupting daily clinic operations.
- The system should adhere to relevant healthcare data protection regulations and standards..
- It should support audit trails to track changes to patient records for compliance and accountability.
- The system should provide comprehensive reporting capabilities, allowing administrators to generate performance reports, financial summaries, and patient analytics.

Requirement Table

Requirement ID	Requirement Description	Priority	Dependen cy	Acceptance Criteria
FR001	User Authentication	High	None	Users (receptionists, dentists, and administrators) must log in securely with appropriate access levels and permissions.
FR002	Security and Data Privacy	High	None	The system must comply with relevant data protection regulations, ensuring the confidentiality and integrity of patient

				information.
FR003	Work Attendance and Leave Management	High	FR002	The system must accurately record and track the days each worker is present, mark holidays, and document any missed days due to leave, illness, or other reasons.
FR004	Leave Request and Approval	High	FR003	Workers can submit leave requests through the system, and supervisors can review, approve, or reject these requests with comments.
FR005	Absence Recording and Documentation	High	FR002 FR003	The system should allow for the recording and documentation of absences, including reasons for missed workdays and any required supporting documentation.
FR006	Attendance Reports	High	FR002 FR003	Supervisors and administrators can generate reports summarizing individual and team attendance, highlighting trends, and identifying potential issues.
FR007	Notifications of Upcoming Events(Holidays,etc)	High	FR003, FR004	The system should send notifications to workers and supervisors in advance of upcoming holidays or other events.
FR008	Admin Dashboard	High	FR001, FR002, FR003	Admin users can access a dashboard to manage user accounts,watch the client list and list appointments and any other information that complies with the Security and Data Privacy policy.
FR009	Patient Registration	High	FR001, FR002	Users (receptionists) can register new patients by capturing essential information such as name, contact details, and medical history.
FR010	Appointment Scheduling	High	FR001, FR002, FR009	Receptionists can schedule, modify, and cancel appointments for patients, specifying date, time, and assigned dentist.

FR011	Patient Check-In	High	FR001, FR002, FR010	Patients can check in for their appointments upon arrival at the clinic, updating their arrival status in the system.
FR012	Electronic Health Records	High	FR001, FR002, FR009	Dentists can create and maintain digital health records for each patient, documenting diagnosis, treatments, and prescriptions.
FR013	Treatment Planning	High	FR001, FR002, FR012	Dentists can develop treatment plans for patients, outlining recommended procedures, associated costs, and appointment schedules.
FR014	Patient Online Registration	High	FR002	New patients can register online by providing necessary personal and contact information.
FR015	Online Appointment Scheduling	High	FR014	Patients can schedule, modify, or cancel appointments online, selecting preferred dates and times.
FR016	Patient Communication via Messaging	Medium	FR002 FR014	The system must allow secure messaging between patients and clinic staff for inquiries, follow-ups, and general communication.
FR017	Online Dental Records Access for Clinic Staff.	High	FR002, FR012	Dentists and clinic staff can access patient records, treatment plans, Electronic Health Records and appointment history through a secure online interface.
FR018	Mobile Responsiveness	High	FR002	The online portal must be responsive and accessible across various devices, including desktops, tablets, and smartphones.

TR019	Server Specifications	High	None	The system must run on servers with a minimum of 16 GB RAM and quad-core processors.
TR020	Database Management	High	TR019	The system must use MySQL version 8.0 as the database management system.
TR021	Programming Language	High	None	The system must be developed using Python 3.8 for server-side scripting.
TR022	Frontend Framework	High	None	The user interface must be built using React.js for enhanced responsiveness.
TR023	Security Protocols	High	None	The system must support HTTPS for secure communication, and all data must be encrypted in transit.
TR024	API Integration	High	TR020, TR022	The system must provide RESTful APIs for seamless integration with external services.
TR025	Backup and Recovery	High	TR019	Regular automated backups must be performed, and a recovery plan must be in place.
TR026	Cross-Browser Compatibility	Medium	TR022	The system must be compatible with the latest versions of Chrome, Firefox, Safari, and Edge.
RR027	Law compliance	High	None	The system must comply with the regulations to protect the privacy and security of patient information.

RR028	Consent Management	High	None	The system must provide functionality for obtaining and managing patient consent for treatment, data processing, and sharing of health information.
RR029	Data Encryption and Security	High	None	Patient data, both in transit and at rest, must be encrypted to ensure the confidentiality and integrity of sensitive information. Access controls must be implemented to restrict unauthorized access.
RR030	Data Retention and Deletion Policies	High	None	The system must adhere to established data retention policies, ensuring that patient records are retained for the required period and deleted securely when no longer needed.
RR031	Audit Trails and Logging	Medium	RR030	The system must maintain detailed audit trails and logs, recording user activities, access attempts, and system events to facilitate monitoring and forensic analysis.
RR031	Accessibility Compliance	Medium	None	The system must comply with accessibility standards to ensure that individuals with disabilities can access and use the system effectively.
RR032	Consent and Privacy Notices	High	None	The system must display clear and concise consent and privacy notices to patients, informing them of how their data will be used, shared, and protected.
RR033	Reporting to Regulatory Authorities	Medium	None	The system must provide capabilities for generating and submitting required reports to relevant healthcare regulatory authorities.

RR034	Training and Awareness Programs	Medium	None	Staff members must undergo regular training programs to stay informed about data privacy regulations, security best practices, and the proper use of the system.
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