

Document 1 – Business case Document for (PAT) Patient Appointment Tracking Application

1. Why is the projected initiated?

PAT Application initiated to create a user-friendly, efficient and problem-solving application. Which gives tremendous benefits.

1. **Improve Efficiency of work** – By streamline scheduling, reducing wait times and optimizing healthcare provider time.
2. **Accuracy:** Minimizes errors like double bookings or missed appointments.
3. **Reminders:** Sends alerts to patients, reducing no-shows and improving attendance rates.
4. **Accessibility:** Allows patients to book, reschedule, or cancel appointments easily online.
5. **Data Management:** Maintains organized records for better patient care and administrative tracking.

2. What are the current problems?

- Manual appointment scheduling leads to errors and inefficiencies.
- Patients face long wait times due to poor scheduling.
- No centralized system for tracking appointments, leading to missed visits.
- Staff spend excessive time managing appointments via phone/paper.
- Difficulty in tracking patient history and follow-ups.
- Errors in scheduling and poor communication.

3. With this project, how many problems could be solved?

- **Time Management** – Both patient and doctor save their important time by using PAT application.
- **Missed Appointments & No-Shows** -Patients often forget their scheduled visits. Automated reminders (via SMS, app notifications, email) reduce missed appointments.
- **Double Booking / Scheduling Conflicts** - Manual systems may accidentally book two patients at the same time.
- **Difficulty in Booking** - Patients usually need to call or visit the hospital to book. The app allows easy online booking anytime.
- **Poor Record Management** - Paper-based records get lost or are hard to track. The app maintains digital patient appointment history.

- **Billing & Payment Delays** - Patients face queues for payments after consultations. The app allows online payment integration.

4. What are the resources required?

1. Business Analysts
 2. Developers (Frontend, Backend, Mobile)
 3. UI/UX Designers (Tools: Figma, Adobe XD)
 4. QA Testers
 5. Project Managers
- **Financial Resources:** Estimated budget for development, marketing, and maintenance.

5. How much organizational change is required to adopt this technology?

Change for Hospital Administration

- From: Manual registers, phone calls, or receptionist-only scheduling
- To: Digital dashboard for managing appointments, reports, and analytics
- Change Level: High → Training is needed to adopt new workflows

Change for Patients

- From: Standing in queues, calling for appointments, unclear waiting times
- To: Self-service booking, automated reminders, digital payments, real-time updates.
- Change Level: Medium → Tech-savvy patients adopt quickly, but older patients may need guidance initially.

Change for IT & Support Team

- From: Minimal involvement in appointments (only basic IT support)
- To: Maintaining the app, servers, security, troubleshooting user issues
- Change Level: Medium → Requires IT upskilling and ongoing support roles

6. Time frame to recover ROI?

- Expected ROI recovery: 6-12 months post-launch, considering revenue from:
 - Commission on patient Appointment
 - Subscription fees from regular visited patients
 - Referring services for patients.

7. How to identify Stakeholders?

• Primary Stakeholders:

- Business Owners (decision-makers and beneficiaries).
- Investors (providing financial backing and expecting returns).
- Development Team (responsible for building and maintaining the platform).
- Hospital Doctors Committee
- Hospital Management Staff and Patients.

• Secondary Stakeholders:

- Pharmacy / Lab Integration Teams (if connected to appointments)
- Insurance Companies (if billing/claims are linked to patient appointments)
- Family Members / Caregivers (may book on behalf of patients)

• Key Methods for Identification:

- Market Research: Analyze hospital industry trends, Patient needs, and competitor strategies.
- Stakeholder Mapping: Identify and categorize stakeholders based on their influence and interest.
- Engagement: Conduct interviews, surveys, and workshops to gather insights and build relationships.
- Feedback Loops: Establish continuous communication channels to address concerns and expectations.

Document 2: BA Strategy for PAT Application.

1. Introduction:

The purpose of this document is to outline the **Business Analyst (BA) Approach Strategy** for the **Patient Appointment Tracking Application**. It defines the steps to be followed, stakeholder analysis, elicitation techniques, documentation processes, communication plans, change management, and sign-off procedures.

2. Project Overview:

Project Name: Patient Appointment Tracking Application

Business Analyst: Mr. Yash Patil

Project Sponsor: Dr. R.G. Sharma

Project Manager: Miss. Emily

Stakeholder	Roles
Miss. Emily	Project Manager
Miss. Mindy	Senior Java Developer
Miss. Camille & Mr. Gabriel	Java Developers
Mr. Alfine	Network Admin
Miss. Liza	Database Admin
Mr. Antoine & Miss. Madeline	Testers
Mr. Yash	Business Analyst
Dr. R.G. Sharma	Project Sponsor
Miss. Rose	Financial Head
Mr. Brock	Project Coordinator
Miss. Lizzy & Mr. Bruce	Key Stakeholders

3. BA Approach Strategy - Step by Step Process:

We will be following 4 phases to go through the BA Approach Strategy -

Phase 1: Requirement Elicitation & Stakeholder Analysis

1. Identify Business Needs & Objectives

- Conduct discussions with **Project Sponsor & Key Stakeholders**.
- Understand business challenges, goals, and expected outcomes.

2. Stakeholder Identification & Analysis

- **Create RACI Matrix (Responsible, Accountable, Consulted, Informed)** to define stakeholder roles.
- Use **ILS (Influence, Legitimacy, and Support) Analysis** to prioritize stakeholder input.

3. Requirement Elicitation Techniques

- **Stakeholder Interviews** – One-on-one discussions with project owners.
- **Workshops & Brainstorming** – Engaging with developers & testers.
- **Surveys & Questionnaires** – Collecting feedback from end-users.
- **Prototyping** – Visualizing key functionalities for validation.
- **Document Analysis** – Studying existing e-commerce solutions & competitors.

Phase 2: Documentation & Approval Process

4. Key Documents to be Created

- **Business Case Document** – Justifies the need for the project.
- **Business Requirement Document (BRD)** – Captures high-level business needs.
- **Functional Specification Document (FSD)** – Outlines system features & behaviors.
- **Requirement Traceability Matrix (RTM)** – Tracks requirements across development phases.
- **Process Flow Diagrams** – Visual representation of business processes.

5. Approval Process

- **Document Walkthroughs** with Project Manager & Developers.
- Key Stakeholder Review & Feedback (**Lizzy & Bruce**).
- Final Approval from **Project Sponsor (Mr. Jack) & Financial Head (Miss. Rose)**.

- Sign-off through **Email, Digital Signature, or Approval Form.**

Phase 3: Development, Testing & Change Management

6. Supporting Development & Testing

- Collaborate with **Senior Developer (Mindy) & QA Team (Antoine & Madeline).**
- Validate UI/UX through **Prototyping & Mockups.**
- Conduct **Requirement Reviews with Developers** before implementation.

7. Handling Change Requests

- **Change Request Submission (CRF - Change Request Form).**
- **Impact Analysis** on cost, timeline & project scope.
- **Stakeholder Discussion & Approval.**
- **Development, Testing & Final Sign-Off.**

Phase 4: UAT & Project Acceptance

8. User Acceptance Testing (UAT) & Final Sign-Off

- Prepare a **UAT Plan** outlining key test scenarios.
- Conduct **UAT with Key Stakeholders (Lizzy & Bruce).**
- Fix reported issues & validate changes.
- **Obtain Final Client Sign-Off via Project Acceptance Form.**

Client Project Acceptance Form

Criteria	Status	Comments
Functional Requirements Met	Done	
No Critical Defects Found	Done	
Performance Tested & Approved	Done	
Business Approval Received	Done	
UAT Sign-Off Received	Pending	

4. Communication & Reporting Strategy

Communication Channels for Internal Stakeholders:

Stakeholder	Communication Mode	Frequency	Purpose
Project Manager (Emily)	Emails, Jira, Meetings	Weekly	Project Updates & Risks
BA (Yash)	Jira, Meetings	Daily	Requirement Discussions
Developers (Mindy, Camille, Gabriel)	Jira	Daily	Development Updates
Testers (Antoine, Madeline)	Jira, Reports	Weekly	Bug Reporting & Testing Updates
Project Sponsor (Jack)	Reports, Presentations	Monthly	Budget & Milestones
Key Stakeholders (Lizzy, Bruce)	Meetings, Reports	Bi-Weekly	Requirement Review & Feedback

Stakeholder Reporting & Project Progress Updates:

Report Type	Frequency	Audience	Mode of Communication
Weekly Status Report	Weekly	Project Team	Email, Jira
Sprint Review Report	Bi-Weekly	Developers, Testers	Jira, Teams
Financial Report	Monthly	Financial Head, Sponsor	Presentation
Risk & Issue Log	Monthly	Project Sponsor	Confluence

5. Conclusion

This **Business Analyst Approach Strategy** ensures structured execution of the "**PAT Application**" project, enabling seamless documentation, stakeholder alignment, and clear communication for successful project completion.

Prepared by: Mr. Yash Patil (Business Analyst)

Date: 05/08/2025

Reviewed by: Miss. Emily (Project Manager)

Approved by: Mr. Jack (Project Sponsor)

Document 3 - Functional Specifications Document for PAT Application

Project name	PAT Application
Patient name	Mr. Lucky
Project Version	1.0
Project Sponsor	Dr. R.G. Sharma
Project Manager	Miss. Emily
Project Initiation date	07/04/2025

Functional Requirement Specifications

Req ID	Requirement Name	Functional Requirement Description	Priority
FR0001	Patient/User Login	The system shall allow users/patient to log in using email, phone number, or third-party authentication (Google, Facebook).	High
FR0002	Patient Profile Management	Patients must be able to create, update, and view their personal information, medical history, and contact details.	High
FR0003	Doctor Profile Management	Doctors must maintain profiles including specialization, consultation timings, availability, and contact information.	High
FR0004	Appointment Scheduling	Patients must be able to schedule appointments by selecting a doctor, date, and available time slot	High
FR0005	Appointment Rescheduling	Patients and doctors must be able to reschedule existing appointments, subject to doctor availability.	High
FR0006	Appointment Cancellation	The system must allow patients and doctors to cancel appointments with proper notifications.	High

FR0007	Real-Time Availability Check	The system should display real-time doctor availability to avoid double bookings.	High
FR0008	Calendar Integration	Appointments should be integrated into calendar views for patients and doctors for easy tracking.	Medium
FR0009	Automated Notification and reminders	Patients and doctors should receive SMS/email/app reminders for upcoming appointments, cancellations, or reschedules.	High
FR0010	Search and filter for doctors	Patients must be able to search doctors based on name, specialization, location, and availability.	High
FR0011	Emergency Appointment Booking	The system must allow urgent or priority appointments beyond regular schedules.	High
FR0012	Waitlist Management	If a slot is unavailable, patients can join a waitlist and get notified when a slot opens.	Medium
FR0013	Multi-location Support	if the hospital has multiple branches; patients should be able to book appointments at different locations.	High
FR0014	Teleconsultation Support	The system should provide an option for video/phone consultation appointments.	High
FR0015	Payment and billing Integration	Patients must be able to pay consultation fees online and receive automated invoices.	High
FR0016	Appointment history tracking	Patients and doctors should be able to view past and upcoming appointment history with details.	High
FR0017	Feedback and rating	Patients should be able to rate and provide feedback on their consultation experience.	Medium
FR0018	Data Security and compliance	The application must comply with healthcare regulations (e.g., HIPAA) and ensure patient data confidentiality.	High

System Constraints & Assumptions

- The platform must be accessible via web and mobile devices.
- Security protocols should be in place to protect user data.
- Scalability to handle peak traffic loads.

Payment gateway integration must comply with industry security standards

Document 4- Requirement Traceability Matrix for PAT Application.

Requirement Traceability Matrix (RTM) document for the **PAT Application** to help track the project requirements from identification to testing and deployment.

Req ID	Req Name	Req Description	Design	D1	T1	D2	T2	UAT
FR0001	User Login	Users must be able to log in to access the platform.	Implement OAuth login	Yes	Pending	No	No	No
FR0002	User Registration	Users can register via email, phone, or social login.	Registration flow design	Not Started	No	No	No	No
FR0003	Password Reset	Users can reset passwords via email/OTP verification.	Implement OTP/email reset	Not Started	No	No	No	No
FR0004	Profile Management	Patient can view/update their profile	UI/UX wireframes ready	Yes	In Progress	No	No	No
FR0005	Doctor Directory	Search for doctor specialty, availability	Advanced filter integration	Not Started	No	No	No	No
FR0006	Appointment booking	Patient can book appointment based on doctor availability	Booking page UI, Appointment Table Schema	Not Started	No	No	No	No
FR0007	Appointment Rescheduling	Patient can reschedule booked appointments	Reschedule Module, Appointment Update	In Progress	Pending	No	No	No

FR0008	Appointments Cancellation	Patient can cancel booked appointments	Cancel button UI, DB status update	Not Started	No	No	No	No
FR0009	Real time Availability	Doctors' schedules and availability must update in real time	Doctors' dashboard UI, Availability API	Not Started	No	No	No	No
FR0010	Automated Reminders	Patient's receive SMS/email reminders before appointment	Notification Services, Email /Service API	Not Started	No	No	No	No
FR0011	Notification to doctors	Doctors should be notified when a patient booked/cancel/Reschedule	Email/SMS API	Not Started	No	No	No	No
FR0012	Feedback and rating	Patient can rate doctor	Feedback from UI, Rating API	Not Started	No	No	No	No
FR0013	E-receipt generation	System should generate and email receipt after payment.	Payment Gateway creation	Not Started	No	No	No	No
FR0014	Patient history	System should maintain patient's appointments and visit history	Payment Database secure creation	Not Started	No	No	No	No
FR0015	Admin dashboard	Admin can manage users, doctors, Appointment,	Admin dashboard UI, Analytics services.	Not Started	No	No	No	No

		And reports						
FR0016	Data security And privacy	System must comply with HIPPA/GDPR For patient data	Encryption layer, Secure Database storage	In Progress	Pending	No	No	No
FR0017	Reporting and analytics	Generate report on appointments, cancellation, revenue etc.	Report UI, Analytics engine.	Not Started	No	No	No	No
FR0018	Multi Device access	Application should work on web and mobile platform.	Responsive UI, Mobile API layer.	Not Started	No	No	No	No

Business Requirement Document

UNDERSTANDING THE BASICS

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1. Document Revisions

Date	Version Number	Document Changes
07/04/2025	1.0	Initial Draft

2. Approvals

Role	Name	Title	Signature	Date
Project Sponsor	Mr. Jack	Executive Stakeholder		
Business Owner	Mr. Amo	Strategic Business Lead		
Project Manager	Miss. Emily	Delivery & Operations Manager		
System Architect	Mr. Mario	Technical Architecture Lead		
Development Lead	Mr. Lucky	Software Engineering Manager		
User Experience Lead	Miss. Lucy	UX/UI Design Head		
Quality Lead	Mr. Benoit	QA & Testing Manager		
Content Lead	Mr. Nicolas	Content Strategy Manager		

3. RACI Chart for This Document

The RACI chart identifies the persons who need to be contacted whenever changes are made to this document. RACI stands for responsible, accountable, consulted, and informed. These are the main codes that appear in a RACI chart, used here to describe the roles played by team members and stakeholders in the production of the BRD. They are adapted from

charts used to assign roles and responsibilities during a project. (RACI Can be made for IT side [Project stakeholder] as mentioned above, apart from that Can also Be made for Client side [Business Stakeholder]).

The following describes the full list of codes used in the table:

Codes Used in RACI Chart

Authorize document.		Has ultimate signing authority for any changes to the
R	Responsible	Responsible for creating this document.
A	Accountable	Accountable for accuracy of this document (for example, the project manager)
S	Supports	Provides supporting services in the production of this document.
C	Consulted	Provides input (such as an interviewee).
I	Informed	Must be informed of any changes.

RACI Chart

Name	Position	*	R	A	S	C	I
Miss. Emily	Project Manager		*	*			*
Mr. Yash	Business Analyst		*		*	*	*
Miss. Mindy	Senior Developer			*	*		*
Mr. Jack	Sponsor			*			*

4. Introduction

4.1 Business Goals

- **Improve Patient Experience** - Provide patients with an easy-to-use interface for booking, rescheduling, or cancelling appointments.
- **Enhance Operational Efficiency** - Automate scheduling to reduce manual workload of hospital/clinic staff.
- **Competitive Advantage** - Deliver a modern digital healthcare experience that differentiates the hospital/clinic from competitors.

4.2 Business Objectives

- **Solution Selection:** Evaluate different scheduling models and choose the best fit.
- **Solution Prototyping & Testing:** Develop a prototype and conduct user testing.
- **Streamline Event Documentation:** Ensure seamless recording of appointments and patient history.
- **Integration with Existing Systems:** Compatibility with hospital management software.
- **Enhance Stakeholder Participation:** Encourage more doctors and hospital staff engagement via suggestion portals and instant notifications

4.3 Business Rules

- A patient must be registered in the system before booking an appointment.
- Each appointment slot can be booked by only one patient at a time.
- Doctors' availability and working hours must be preconfigured in the system.

4.4 Background

- Currently, appointment scheduling is handled manually or through phone calls, leading to errors and inefficiencies.
- It aims to fulfil the gap between healthcare providers struggle with managing overlapping bookings and missed appointments.
- Digital transformation in healthcare requires a centralized and user-friendly system for appointment tracking.

4.5 Project Objective

- Create an end-to-end Healthcare appointment management solution with advanced UI/UX.
- Develop digitize appointment management system.
- Implemented automated reminders and notification to minimize missed appointment.

4.6 Project Scope

4.6.1 In Scope Functionality

- Users/patient can register, log in, and manage profiles using email, phone number, or third-party authentication (Google, Facebook).
- Doctor can create profile with specialization, consulting hours, and availability.
- Centralized dashboard for patient to view upcoming, completed, or canceled appointments.
- Doctors and staff can track patient queues and schedules.
- Automated SMS/Email/App notification for booking confirmation, reminders, and updates.
- Role based access management (patient, doctor, admin)
- Reporting features: daily, weekly appointment reports, patient inflow, cancellation analysis.
- Compliance with data privacy standards (HIPAA/GDPR depending on region)
- Patients can provide feedback on doctors/appointments.

4.6.2 Out Scope Functionality

1. **Electronic Health Records (EHR) or EMR System** - Storing complete patient medical records beyond appointment details is not included.
2. **Telemedicine/Video Consultation** - No in-app video calling or telehealth consultation in this phase.
3. **Insurance & Billing Management** - Insurance claims, premium calculations, and medical billing systems are excluded.
4. **Pharmacy/Prescription Management** - No prescription uploads, e-pharmacy ordering, or medicine tracking.

5. **Advanced AI-based Predictive Analytics** - Predictive modeling for patient no-shows or advanced AI recommendation engines not part of initial release.

5. Assumptions

- Patients will have basic digital literacy to use the application for booking and tracking appointments.
- Healthcare staff and doctors will receive training sessions on how to use the application effectively.
- Integration with existing hospital/clinic systems (EHR/EMR, billing, etc.) will be supported if APIs or data exchange formats are available.
- The system will comply with healthcare regulations such as HIPAA (for US) or applicable local data protection laws (e.g., India's DPDP Act).
- Patients will provide consent for storing and processing their personal and medical data.

6. Constraints

- Secure handling and storage of patient records.
- Implementation should be completed within 10 to 12 months defined timeline.
- Audit trails and access logs must be maintained.

7. Risks

7.1 Technological Risks

- **Performance or scalability issues** - When too many appointments or patients/users are handled concurrently.

7.2 Skills Risks

- Lack of experienced developers proficient in required technologies.
- Insufficient training for support and maintenance teams.
- Difficulty in hiring UX/UI designers with expertise in patient appointment tracking application.
- Potential delays due to dependency on specialized skills for integrations.

7.3 Business Risks

- Competitive pressure from existing patient appointment tracking application.

7.4 Requirements Risks

- Frequent changes in requirements from stakeholders causing scope creep.

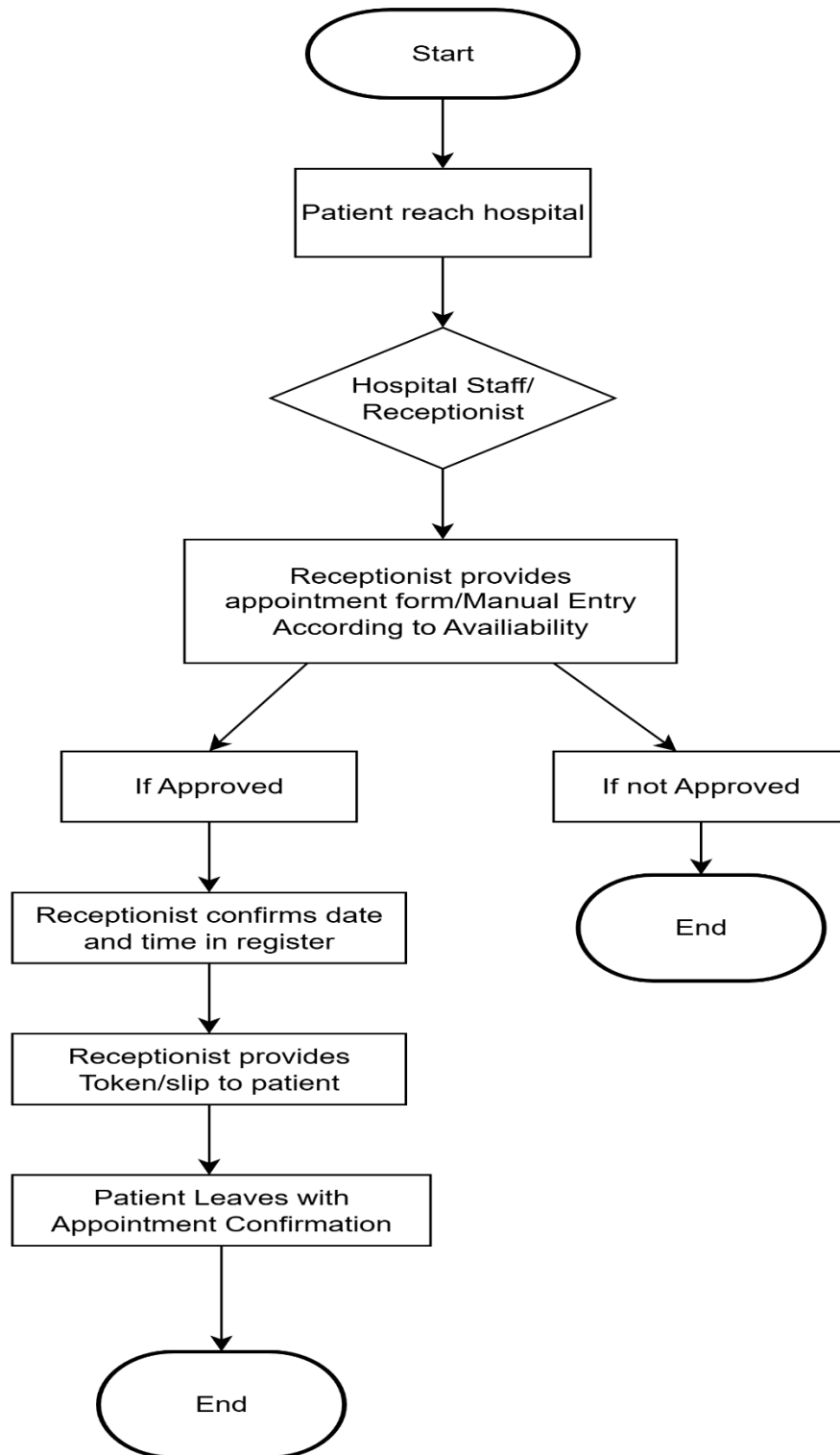
7.5 Other Risks

- Potential difficulties in handling high user traffic.
- Users may take time to adapt to the new platform.
- Risk of low adoption if the app is not available in multiple language or accessible for elderly patients.

8. Business Process Overview

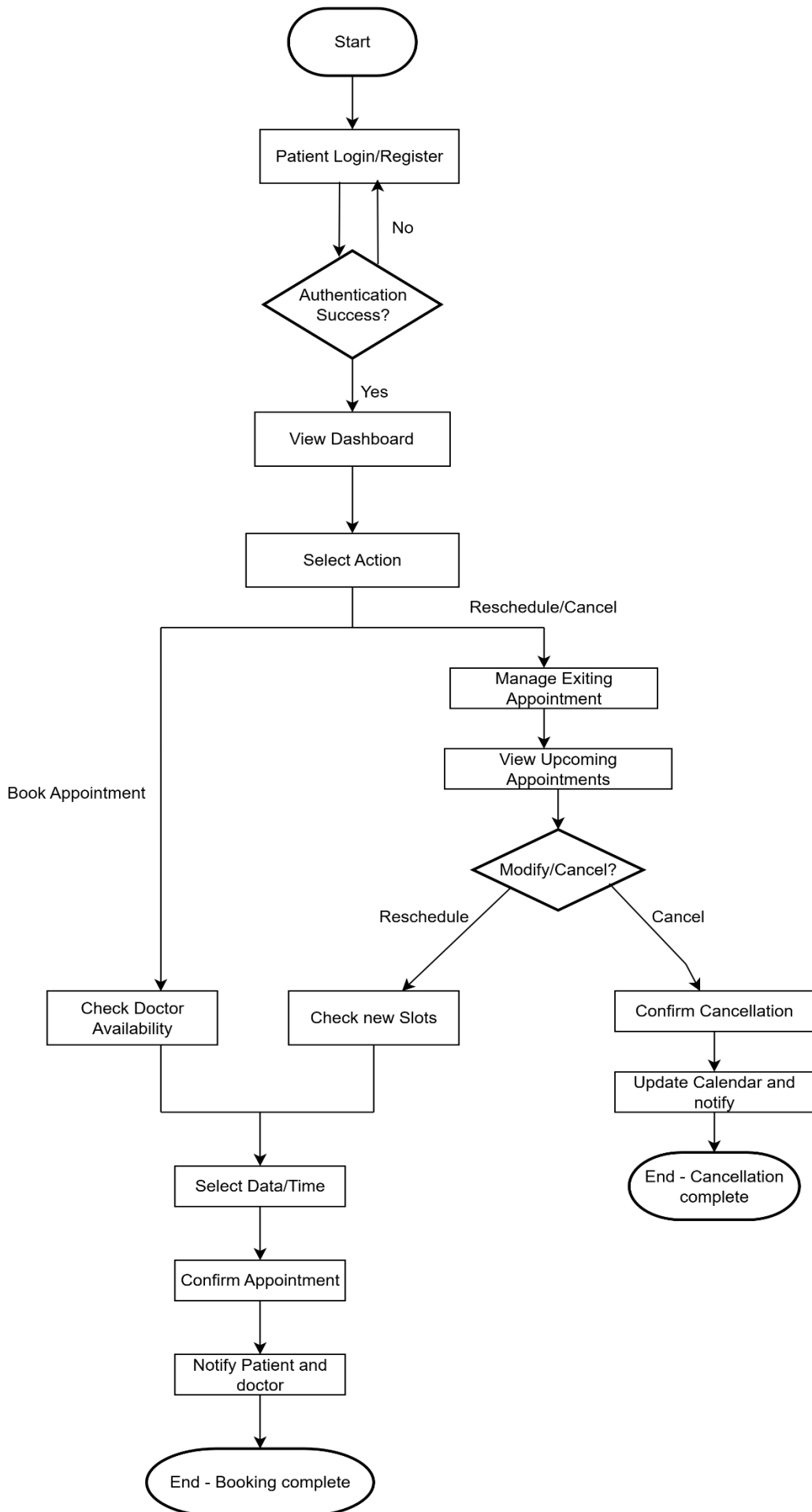
8.1 Legacy System (AS-IS)

- **Appointment Booking** - Mostly **manual** via phone calls or walk-ins.
- **Availability Check** - Staff manually verifies doctor schedules (physical register, spreadsheets, or basic calendar tool).
- **Tracking** - No real-time view of patient queues or cancellations.
- **Integration** - Legacy system **not integrated** with EMR (Electronic Medical Records), billing, or hospital ERP.



Proposed Recommendations (TO-BE)

- Centralized appointment scheduling system.
- Patient self- service easily login through portal and mobile app
- Automated notification and reminders
- Doctor and staff dashboard
- Integration with electronic health recorded.
- Multi-channel booking support
- Check doctor availability/ Select date and time



9. Business Requirements

BR ID	Requirement Name	Business Requirement Description	Priority
BR0001	Patient Registration	Allow patients to register with personal details, medical history, and contact information.	High
BR0002	Doctor Registration	Enable doctors to register their profile, specialization, and availability schedule.	High
BR0003	Appointment Booking	Patients should be able to book appointments with doctors based on availability.	High
BR0004	Real-Time Slot Availability	Display real-time doctor availability to avoid booking conflicts.	High
BR0005	Appointment Rescheduling	Allow patients and doctors to reschedule existing appointments easily.	High
BR0006	Appointment Cancellation	Provide cancellation options with rules (e.g., before 24 hrs).	High
BR0007	Appointment Reminder Notifications	Send automated reminders via SMS/Email/Push notifications.	High
BR0008	Calendar Integration	Sync appointments with external calendars (Google, Outlook).	Medium
BR0009	Patient Dashboard	Provide patients with a dashboard to view, track, and manage their appointments.	High
BR0010	Doctor Dashboard	Allow doctors to manage their schedules, upcoming appointments, and patient details.	High
BR0011	Queue Management	Manage patient waiting lists and notify them of delays or early slots.	Medium
BR0012	Multi-location Support	Support booking across multiple hospital branches or clinics.	Medium
BR0013	Telemedicine Integration	Enable online consultations through video call for remote patients.	Medium
BR0014	Secure Patient Data Management	Ensure compliance with healthcare data regulations (HIPAA, etc.).	High

BR0015	Role-Based Access Control	Define access levels for patients, doctors, receptionists, and admins.	High
BR0016	Payment Integration	Support online payments for consultations (credit card, UPI, wallet).	High
BR0017	Emergency Appointment Booking	Provide priority booking for emergency cases.	Medium
BR0018	Offline Appointment Sync	Ensure data sync in case of offline booking by reception staff.	Low

10. Appendices

10.1 List of Acronyms

- **BRD** - Business Requirements Document
- **RTM** - Requirement Traceability Matrix

10.2 Glossary of Terms

- **UAT**: User Acceptance Testing

10.3 Related Documents

- Requirement Traceability Matrix (RTM)
- Functional Specification Document

