

# SPM DOCUMENTATION

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## 1. Project Proposal (Phase 1)

### 1.1 Project Title:

Hospital Management System (HMS)

### 1.2 Project Objective:

- Automate hospital operations including patient management, appointments, medical records, billing, pharmacy, and laboratory management.
- Improve hospital efficiency, reduce paperwork, and ensure accurate record-keeping.
- Provide a secure and user-friendly platform for patients, staff, and management.

### 1.3 Project Scope:

#### In-Scope:

- Patient registration, profiles, and medical records
- Doctor scheduling & appointment management
- Laboratory and pharmacy integration
- Billing and invoicing
- Reports and analytics

#### Out-of-Scope:

- Telemedicine or remote consultations
- AI-based diagnostics (future enhancement)

### 1.4 Stakeholders:

- **Admin** – System management & reporting
- **Doctors** – Patient treatment & records
- **Nurses** – Vitals & patient care
- **Receptionists** – Appointments & registration
- **Pharmacists** – Medicine dispensing
- **Lab Technicians** – Test processing
- **Patients** – Access to appointments, reports, and billing

### 1.5 Benefits:

- Faster and accurate patient management
- Reduced manual errors
- Improved decision-making via analytics
- Secure storage of sensitive data

## 2. Work Breakdown Structure (WBS) – Phase 2

WBS Code	Task	Sub-Tasks	Duration (days)
1	Project Planning	Requirement gathering, Feasibility study, Tool setup	5
2	System Design	Architecture design, Database design, Wireframes	7
3	Authentication Module	User login/logout, Role management	4
4	Patient Management Module	Registration, Profile, Medical history	6
5	Appointment & Doctor Module	Scheduling, Notifications, Calendar	6
6	Medical Records & Lab Module	Prescriptions, Test requests, Reports	7
7	Pharmacy Module	Inventory, Medicine dispensing	5
8	Billing Module	Invoice, Payment tracking, Insurance	5
9	Reports & Analytics	Admin reports, Graphs, Charts	4
10	Testing & Deployment	Unit testing, Integration, Bug fixing	6

**Total Duration:** ~55 days (8 weeks approx.)

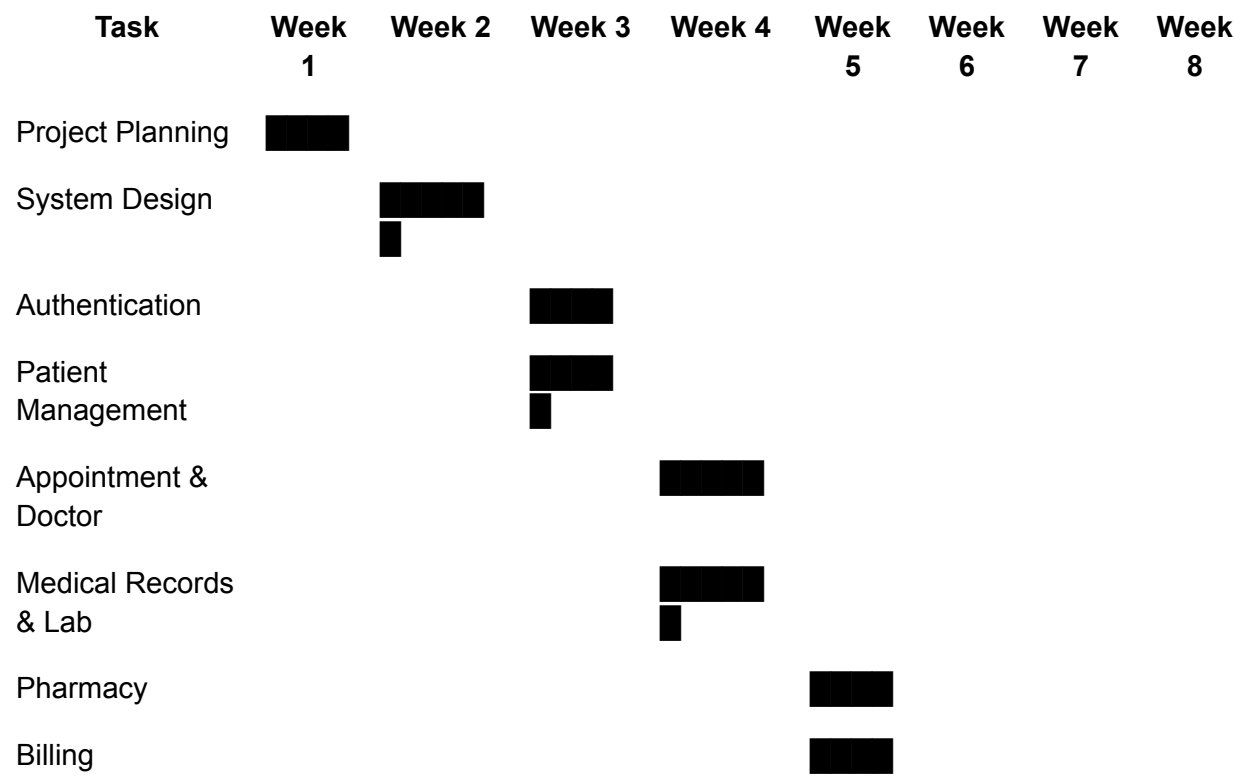
## 3. Estimation Plan

Module	Estimated Effort (Person-Days)	Resources Required

Authentication	4	1 Developer
Patient Management	6	2 Developers
Appointment & Doctor	6	2 Developers
Medical Records & Lab	7	2 Developers
Pharmacy	5	1 Developer
Billing	5	1 Developer
Reports & Analytics	4	1 Developer
Testing & Deployment	6	QA + Dev

**Effort Estimation Method:** Function Point Analysis & Expert Judgment  
**Total Effort:** 45–50 person-days  
**Buffer:** 10–15% for unforeseen delays

## 4. Scheduling Plan (Gantt-style Overview)



Reports &  
Analytics



Testing &  
Deployment



## 5. Resource Allocation

Resource	Role	Tasks Assigned
Dev 1	Full-stack Developer	Authentication, Billing
Dev 2	Full-stack Developer	Patient, Appointment & Doctor, Lab
Dev 3	Backend Specialist	Database, Reports
QA	Tester	All modules
PM	Project Manager	Planning, Coordination, Progress Tracking

## 6. Risk & Mitigation

Risk	Probability	Impact	Mitigation
Delay in requirement gathering	Medium	High	Schedule buffer, frequent stakeholder meetings
Data security breach	Low	High	Implement RBAC & encryption
Integration issues (Lab & Pharmacy)	Medium	Medium	Early API testing & mock data
Scope creep	Medium	Medium	Strict change request process