CO 2060 – Project

Workflow and Timeline report

Project Title

AI integrated Health Management system

Members

E/23/098

E/23/100

E/23/093

E/23/012

1. Scrum-Based Development Overview

The Hospital Management System (HMS) will be developed using the Scrum framework, an Agile methodology that supports iterative, incremental, and feedback driven development.

The project is divided into time-boxed sprints. Each sprint delivers a potentially shippable product increment, which is reviewed and refined through continuous stakeholder feedback.

The Scrum framework is selected due to:

- evolving AI-assisted features

- integration-heavy modules (payments, labs, hosting)

- need for continuous testing and risk control.

2. Scrum Structure Definition

2.1 Sprint Configuration

Item	Description
Project Title	Hospital Management System with AI Assistance
Development Model	Scrum (Agile, Iterative & Incremental)
Total Duration	2 Semesters (30 weeks)
Remaining Duration	25 weeks
Sprint Length	2 weeks
Total Sprints	12

2.2 Scrum Roles

Role	Responsibility
Product Owner	Apurwa Fernando
Scrum Master	Kaveesha Madhushan
Development Team	Ryan Fernando, Apurwa Fernando, Kavindu Kalhara, Dimal Alagiyawanna

3. Scrum Artifacts

Artifact	Description
Product backlog	Ordered list of HMS features, improvements, and technical tasks
Sprint Backlog	Selected backlog items committed for a sprint
Increment	Working, tested HMS functionality produced at sprint end

4. Product Backlog

Backlog ID	Feature Description
PB-01	User authentication & RBAC
PB-02	Patient profile & medical history
PB-03	Appointment booking & scheduling
PB-04	Online payment gateway
PB-05	Prescriptions & visit records
PB-06	Laboratory test ordering
PB-07	Lab report upload & viewing
PB-08	Notifications & reminders
PB-09	AI symptom-based suggestions
PB-10	AI doctor recommendation
PB-11	Audit logs & access tracking
PB-12	Hosting & deployment
PB-13	Performance & security testing

5. Sprint-Based Timeline

Semester 1 – Foundation & Core Increments

Sprint 1 (Weeks 6–7): Product & Sprint Setup

Sprint Goal: Establish a Scrum-ready HMS foundation

Sprint Backlog

- Refine approved requirements into backlog items

- Define acceptance criteria

- Setup Git repository & branching

- Initial system architecture

Increment

- Product backlog

- Architecture draft

- Sprint 1 review demo (planning artifacts)

Sprint 2 (Weeks 8–9): Core Data & Security

Sprint Goal: Secure data model and authentication

Sprint Backlog

- Database schema (patients, doctors, records)

- User authentication

- Role-based access control

Increment

- Secure login system

- Database operational

Sprint 3 (Weeks 10–11): Appointment Management

Sprint Goal: Enable digital appointment flow

Sprint Backlog

- Appointment booking

- Doctor availability scheduling

- Appointment validation rules

Increment

- Fully working appointment module

Sprint 4 (Weeks 12–13): Medical Records

Sprint Goal: Digitize patient history

Sprint Backlog

- Medical record CRUD

- Visit history

- Prescription storage

Increment

- Digital medical records module

Sprint 5 (Weeks 14–15): Semester-1 Release

Sprint Goal: Stabilize and release core HMS

Sprint Backlog

- Bug fixing

- UI polishing

- Sprint hardening

- Sprint review & retrospective

Increment

- Release 1: Core HMS System

Semester 2 – Advanced Features, AI & Deployment

Sprint 6 (Weeks 1–2): Payments & Notifications

Sprint Goal: Financial and communication features

Sprint Backlog

- Online payment gateway

- Appointment reminders

- Payment validation

Increment

- Payment-enabled HMS

Sprint 7 (Weeks 3–4): Laboratory Module

Sprint Goal: Digital lab workflow

Sprint Backlog

- Test ordering

- Lab result upload

- Patient report viewing

Increment

- Fully integrated lab system

Sprint 8 (Weeks 5–6): AI Decision Support

Sprint Goal: Introduce AI safely

Sprint Backlog

- Symptom input interface

- AI condition suggestions (decision support only)

- Disclaimer & logging

Increment

- AI-assisted diagnosis support

Sprint 9 (Weeks 7–8): AI Recommendation & Analytics

Sprint Goal: Intelligent doctor matching

Sprint Backlog

- Doctor recommendation engine

- Availability-aware suggestions

- Analytics dashboard

Increment

- Smart recommendation module

Sprint 10 (Weeks 9–10): Integration & Hosting

Sprint Goal: Deploy a real system

Sprint Backlog

- Full system integration

- Cloud hosting

- Domain, SSL, environment configs

Increment

- Hosted HMS system (production-like)

Sprint 11 (Weeks 11–12): Testing Sprint

Sprint Goal: Ensure reliability

Sprint Backlog

- Alpha testing

- Security testing

- Performance testing

Increment

- Test reports

- Stabilized system

Sprint 12 (Weeks 13–15): Final Release

Sprint Goal: Submission-ready product

Sprint Backlog

- User acceptance testing

- Documentation

- Final bug fixes

- Viva preparation

Increment

- Final Release: HMS v1.0

6. Scrum Events

Event	Purpose	Frequency
Sprint Planning	Define sprint goal and backlog	Start of sprint
Daily Scrum	Track progress and blockers	Daily
Sprint Review	Demonstrate increment	End of sprint
Sprint Retrospective	Process improvement	End of sprint