

## **IT 2080 – IT Project**

### **Activity 3- Agile-based Activity Planning project scope and schedule**



**Group Number - ITP25\_WE\_B01\_01\_204**

**Topic - Medical Center Management System**

#### **Team Members**

<b>IT Number</b>	<b>Student Name</b>	<b>Student Email Address</b>	<b>Contact Number</b>
IT23588714	K.H.S.Dinsara	it23588714@my.sliit.lk	0703287271
IT23543232	Navodya A.K.	it23543232@my.sliit.lk	0764449102
IT23572638	Thathsarani J R	it23572638@my.sliit.lk	0703119829
IT23669758	Liyanaarachchi L.A.D.A	it23669758@my.sliit.lk	0772712630
IT23810464	Ekanayaka E.W.I.D	it23810464@my.sliit.lk	0768370886

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## **01.Introduction**

In software development, planning and scheduling are essential processes because they keep the team cohesive, enable on-time delivery, and foster teamwork.

For this project, we are creating the Medical Center Management System, which aims to modernize Sri Lankan healthcare operations by integrating all important stakeholders onto a single online platform, including patients, physicians, laboratory assistants, inventory staff, suppliers, and finance staff.

We used the Agile methodology to oversee our development process since it enables us to promptly adjust to needs changes, provide features incrementally, and break the work down into tiny, manageable jobs. In this exercise, we compiled user stories into a product backlog, ranked them, and used Agile estimating techniques to determine how complicated they were. The work was subsequently split up into three sprints, each of which produced a functional product increment.

To further track tasks and progress, we created a Kanban board (To Do → In Progress → Done) and created a sprint schedule that divided up the work among team members according to their personal abilities. The system will be created in an organized fashion with ongoing cooperation, openness, and consistent advancement toward a fully effective solution thanks to this method.

## 02. Product Backlog

### 1) User Management

ID	Description	Priority	Story Points
User Management			
1.01	As a user, I want to register and log in securely so that I can access the system.	High	1
1.02	As an admin, I want to assign roles to patients, staff, and managers to control access.	High	2
1.03	As a patient, I want to book appointments by selecting date, time, and doctor.	High	3
1.04	As a patient, I want to edit or cancel my appointments to manage my schedule.	High	4
1.05	As a patient, I want to view my medical records linked to my account.	High	5
1.06	As a doctor, I want to view my upcoming appointments to improve my time management.	Medium	6
1.07	As a receptionist, I want to schedule appointments for walk-in patients.	Medium	7
1.08	As an admin, I want to reset user passwords for security purposes.	Medium	8
1.09	As a patient, I want to receive appointment confirmation via System notification.	High	9
1.10	As a manager, I want to view overall booking statistics for resource planning.	Medium	10
1.11	As a patient, I want reminders for my upcoming appointments.	High	11
1.12	As a doctor, I want to update the appointment status (completed, canceled, or no-show).	Medium	12

## 2) Supplier Management

ID	Description	Priority	Story Points
<b>Supplier Management</b>			
2.01	As a system, I want to generate purchase orders automatically for low stock.	High	13
2.02	As a pharmacist, I want to view and confirm supplier deliveries.	High	14
2.03	As a manager, I want to track order history for each supplier.	Medium	15
2.04	As a supplier, I want a secure login to manage orders.	High	16
2.05	As an admin, I want to update supplier profiles and contact details.	Medium	17
2.06	As a pharmacist, I want to receive alerts when suppliers confirm shipments.	Medium	18
2.07	As a manager, I want to analyze supplier performance based on delivery times.	Medium	19
2.08	As a pharmacist, I want to upload proof of deliveries (photos, receipts).	Medium	20
2.09	As a manager, I want monthly supplier performance reports exported in PDF.	Medium	21
2.10	As a supplier, I want to receive notifications about payment and order statuses.	Medium	22

### 3) Laboratory Management

<b>ID</b>	<b>Description</b>	<b>Priority</b>	<b>Story Points</b>
<b>Laboratory Management</b>			
3.01	As a patient, I want to fill a personal details form (including name, contact, test type, preferred date & time) so that I can request a lab test.	High	23
3.02	As a system, I want to validate the submitted form so that incorrect or incomplete details are not sent to the lab assistant.	High	24
3.03	As a lab assistant, I want to view submitted patient forms so that I can book appointments accurately.	High	25
3.04	As a lab assistant, I want to create lab appointments based on the patient's submitted details so that tests are scheduled properly.	High	26
3.05	As a lab assistant, I want to edit or update booked appointments so that I can manage schedule changes.	High	27
3.06	As a lab assistant, I want to delete appointments so that I can handle cancellations or mistakes.	High	28
3.07	As a patient, I want to receive appointment confirmation notifications so that I know when my test is scheduled.	High	29
3.08	As a patient, I want the system to inform me that appointment changes or cancellations must be requested via phone call so that I follow the correct process.	Medium	30
3.09	As a lab assistant, I want to view a daily appointment schedule so that I can manage workload efficiently.	High	31
3.10	As a lab assistant, I want to generate a simple list of all booked appointments so that I have an overview of upcoming tests.	Medium	32

#### 4) Inventory Management

ID	Description	Priority	Story Points
<b>Inventory Management</b>			
4.01	As a pharmacist, I want to add, update, and delete medicines in inventory.	High	33
4.02	As a pharmacist, I want real-time stock updates when dispensing medicines.	High	34
4.03	As a pharmacist, I want alerts for low stock levels.	High	35
4.04	As a pharmacist, I want to record batch numbers and expiry dates.	High	36
4.05	As an admin, I want to view and export inventory usage logs.	Medium	37
4.06	As a pharmacist, I want automatic barcode generation for new stock.	Medium	38
4.07	As a manager, I want to generate monthly inventory reports.	Medium	39
4.08	As a pharmacist, I want to track supplier details linked to stock.	High	40
4.09	As an admin, I want to set minimum reorder thresholds for critical medicines.	High	41
4.10	As a pharmacist, I want to conduct inventory audits to ensure accuracy.	Medium	42

## 5) Billing & Payment Management

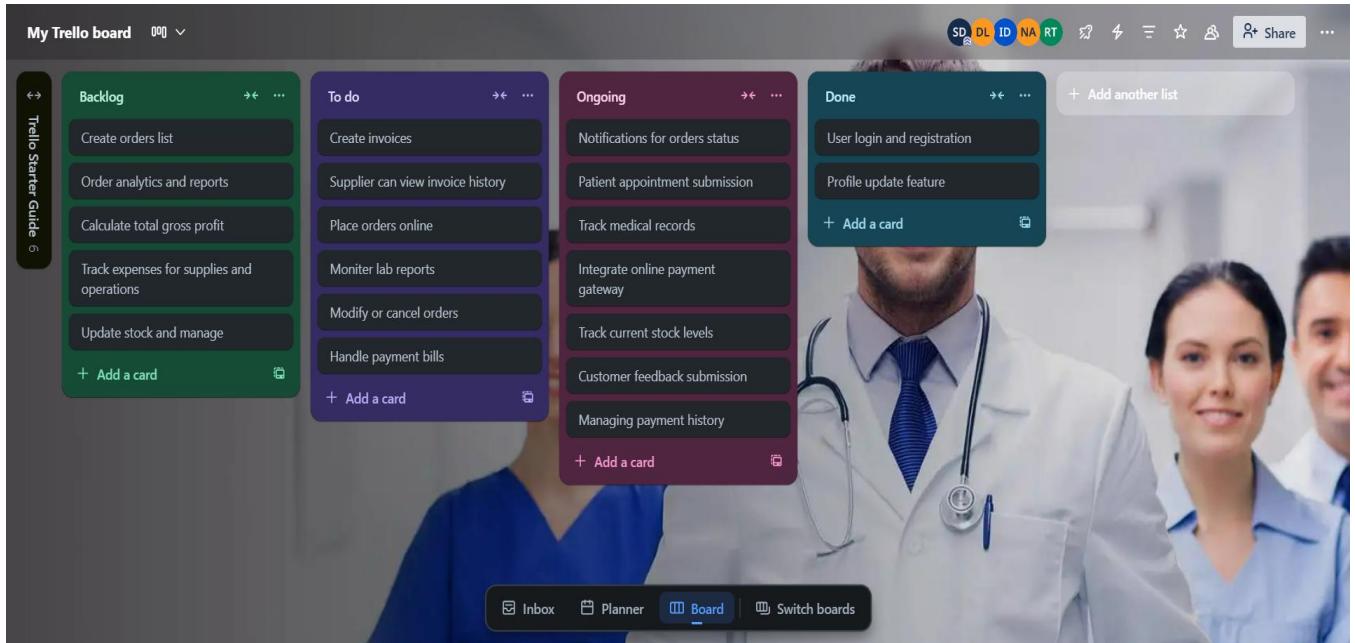
ID	Description	Priority	Story Points
<b>Billing &amp; Payment Management</b>			
<b>5.01</b>	As a receptionist, I want to generate bills so that patients can make payments easily.	High	43
<b>5.02</b>	As a cashier, I want to process payments securely so that transactions are recorded.	High	44
<b>5.03</b>	As an admin, I want to view all payment history so that I can track financial records	High	45
<b>5.04</b>	As a patient, I want to receive an e-receipt so that I have proof of payment.	High	46
<b>5.05</b>	As an accountant, I want to generate monthly reports so that I can manage revenue.	Medium	47
<b>5.06</b>	As an admin, I want to export billing data to Excel/PDF so that I can share with management.	Medium	48
<b>5.07</b>	As a cashier, I want to search past transactions so that I can quickly resolve disputes.	Medium	49
<b>5.08</b>	As a patient, I want to pay via multiple methods (cash, card, online) so that it's convenient.	High	51
<b>5.09</b>	As an accountant, I want to track overdue payments so that I can send reminders.	High	52
<b>5.10</b>	As an admin, I want to restrict billing access by roles so that security is ensured.	Medium	53

## 03. Sprint Breakdown Chart

Sprint	Goals	Outcome	Team Members
<b>Sprint 1 (Week 1,2)</b>	Core system foundation  (User registration, lab appointment form, inventory tracking basics, supplier creation, billing setup)	<ul style="list-style-type: none"> <li>• Patients can create accounts and log in securely.</li> <li>• Patients can fill out lab appointment forms and submit requests.</li> <li>• Lab assistants can view and manage appointment requests.</li> <li>• Initial inventory tracking module created to add and update lab items.</li> <li>• Suppliers can be added into the system with their details.</li> <li>• Basic billing setup allows staff to generate invoices for lab services.</li> </ul>	All members
<b>Sprint 2 (Week 3,4)</b>	Advanced workflows  (Appointment scheduling, inventory alerts, supplier quotations, online payment integration)	<ul style="list-style-type: none"> <li>• Lab assistants can schedule appointments and send confirmations to patients.</li> <li>• Patients receive notifications for appointment status (approved / rescheduled / cancelled).</li> <li>• Inventory system generates low stock alerts when critical levels are reached.</li> </ul>	All members

		<ul style="list-style-type: none"> <li>• Suppliers can submit and manage quotations for lab supplies.</li> <li>• Staff can review and approve quotations before ordering.</li> <li>• Patients can make secure online payments for lab tests via integrated payment gateway.</li> </ul>	
<b>Sprint (Week 5,6)</b>	<b>3</b>	<p>Reporting, analytics, security enhancements, final integration</p> <ul style="list-style-type: none"> <li>• Appointment reports generated (by date, type, patient).</li> <li>• Inventory reports showing stock levels, usage trends, and expiry alerts.</li> <li>• Supplier reports covering quotations, deliveries, and transactions.</li> <li>• Financial reports summarizing billing, payments, and outstanding balances.</li> <li>• Role-based security controls to protect sensitive data.</li> <li>• Final system deployment-ready with enhanced security.</li> </ul>	All members

## 04. Kanban



## 05. Sprint Plan

5.1 User Management - (IT23588714 – K.H.S. Dinsara)

Sprint	User Stories	Outcome
<b>Sprint 1</b> <b>(Week 1,2)</b>	1.01, 1.02	Authentication and user registration with role-based access are operational. Users may create an account, log in safely. Assign managers, staff and patients' roles.
<b>Sprint 2</b> <b>(Week 3,4)</b>	1.03, 1.04, 1.05, 1.08	Features for scheduling appointments, editing or canceling appointments, and changing passwords are put into place. Medical records are available for patients to access. Passwords can be safely managed by administrators.
<b>Sprint 3</b> <b>(Week 5,6)</b>	1.06, 1.07, 1.09, 1.10, 1.11, 1.12	Appointment reminders, confirmation notifications, upcoming appointments for doctors, scheduling for walk-in patients, and reporting for managers are functional. Appointment statuses can be updated by doctors.

## 5.2 Supplier Management - (IT23543232 – Navodya A.K.)

Sprint	User Stories	Outcome
<b>Sprint 1 (Week 1,2)</b>	2.01, 2.02, 2.04, 2.05	Purchase orders are generated automatically when stock levels are low. Suppliers are able to log in safely. Deliveries from suppliers can be verified by pharmacists. Contact information and supplier profiles can be updated by administrators.
<b>Sprint 2 (Week 3,4)</b>	2.03, 2.06, 2.08	Managers are able to monitor the history of supplier orders. Alerts about shipment confirmations are sent to pharmacists. Pharmacists are able to upload delivery documentation, such as receipts and images.
<b>Sprint 3 (Week 5,6)</b>	2.07, 2.09, 2.10	Managers can create monthly PDF reports and examine supplier performance based on delivery schedules. Notifications about order and payment statuses are sent to suppliers.

5.3 Laboratory Management - (IT23572638 -Thathsarani J.R.)

Sprint	User Stories	Outcome
<b>Sprint 1 (Week 1,2)</b>	3.01, 3.02, 3.03	Patients can use a verified form to order lab tests. For scheduling purposes, lab assistants can examine completed forms with accuracy.
<b>Sprint 2 (Week 3,4)</b>	3.04, 3.05, 3.06	Lab assistants are able to make, modify, and cancel lab appointments. Changes and cancellations are handled effectively by the scheduling system.
<b>Sprint 3 (Week 5,6)</b>	3.07, 3.08, 3.09, 3.10	Patients are notified of confirmation. For lab assistants, concise appointment lists and daily schedules are created. Patients are informed by the system about the proper cancelation procedure.

## 5.4 Inventory Management - (IT23669758 - Liyanaarachchi L.A.D.A.)

Sprint	User Stories	Outcome
<b>Sprint 1</b> <b>(Week 1,2)</b>	4.01, 4.02, 4.03, 4.04	Real-time tracking, updating, and deletion of medications is possible. Both batch/expiry tracking and low stock notifications work.
<b>Sprint 2</b> <b>(Week 3,4)</b>	4.05, 4.06, 4.08, 4.09	Inventory usage logs can be viewed/exported. Barcode generation for new stock, supplier tracking, and minimum reorder thresholds are implemented.
<b>Sprint 3</b> <b>(Week 5,6)</b>	4.07, 4.10	The monthly audits and inventory reports are operational. Reporting features are complete, and inventory accuracy is confirmed.

5.5 Billing & Payment Management - (IT23810464 -Ekanayaka E.W.I.D)

<b>Sprint</b>	<b>User Story IDs</b>	<b>Outcome / Deliverable</b>
<b>Sprint 1 – Core Billing &amp; Payment</b>	5.01, 5.02, 5.04, 5.08	Bill generation module implemented; UI for receptionist to create bills; secure payment processing integrated with database; transactions recorded; automatic e-receipt generation; payment module supports multiple methods (cash, card, online).
<b>Sprint 2 – Payment Tracking &amp; Security</b>	5.03, 5.07, 5.10	Admin dashboard shows all payment history; transaction search feature available for cashiers; role-based access control implemented for billing module.
<b>Sprint 3 – Reporting &amp; Export</b>	5.05, 5.06, 5.09	Monthly revenue report generation implemented; export functionality to Excel/PDF available; overdue payment tracking and reminder notifications implemented.