

Distributed Systems

July 2023

Mengzhao Xu

x22198491

Contents

[1 Introduction 3](#_Toc139750376)

[2 Service 1: Patient Monitoring Service 3](#_Toc139750377)

[2.1 Methods 3](#_Toc139750378)

[2.1.1 Get Patient Status 3](#_Toc139750380)

[3 Service 2: Prescription Service 3](#_Toc139750382)

[3.1 Methods 3](#_Toc139750383)

[3.1.1 Add Prescription 3](#_Toc139750384)

[4 Service 3: Equipment Monitoring Service 4](#_Toc139750387)

[4.1 Method 4](#_Toc139750388)

[4.1.1 Get Equipment Status 4](#_Toc139750389)

[5 Conclusion 4](#_Toc139750376)

# Introduction

As the growing demand for trustworthy and efficient health systems, we introduce the Smart Health System using gRPC. My project aims to cover patient monitoring, medication prescription, and equipment status checking. It embodies a fully integrated healthcare management ecosystem, providing all stakeholders: from physicians to technicians, with real-time data accessibility.

# Service 1: Patient Monitoring Service

This service focuses on the real-time monitoring of patients, providing stakeholders with immediate insights into the current health status of patients.

## Methods

### Get Patient Status

**Purpose:** Deliver real-time health status of a patient.

**Request:** A ‘PatientRequest’ message that includes:

‘patientId’: Identifier for the patient.

**Response:** A ‘PatientStatus’ message that encompasses:

‘status’: The current health status of the patient, such as “Stable”, “Critical”, etc.

# Service 2: Prescription Service

Aimed at ensuring effective medication management, this service is pivotal for the timely availability and correct usage of medicines for patients.

## Methods

### Add Prescription

**Purpose:** Register a new medicine prescription into the system.

**Request:** A ‘Prescription’ message that contains:

‘prescriptionId’: Identifier for the prescription.

‘medicineName’: Name of the medicine prescribed.

‘dosage’: Information regarding the dosage.

**Response:** A ‘PrescriptionResponse’ message that provides:

‘message’: A feedback message, for example "Prescription Added!".

# Service 3: Equipment Monitoring Service

This service provides the real-time operational status of various equipment, maintaining the functionality of medical equipment.

## RPC Method

### Get Equipment Status

Purpose: Acquire the operational status of the specific medical equipment.

Request: An ‘EquipmentRequest’ message containing:

‘equipmentId’: Identifier for the equipment.

Response: An ‘EquipmentStatus’ message, detailing:

‘status’: The current operational status, such as "Operational", "Out of Service", etc.

# Conclusion

The Smart Health System, including 3 services, aspires to improve the healthcare management system. Combining real-time patient and device monitoring with effective management. Ensures an efficient healthcare experience for every single stakeholder.