**INTRODUCTION OF USE CASE DIAGRAM FOR HOSPITAL MANAGEMENT SYSTEM**

Use Case Diagram for a Hospital Management System. This diagram visually represents the interactions between various user roles and key functionalities within the system. Each user role, called an "actor," interacts with different use cases, or actions, which represent the essential processes in managing hospital operations.

**Key Actors**

**Patient:** Engages with the system to view appointments, schedule visits, and manage payments for services.

**Doctor:** Primarily interacts with patient information, managing schedules, and generating reports.

**Nurse:** Assists with inventory management, appointment scheduling, and patient management.

**Institution:** Represents the hospital or administrative staff, involved in managing staff schedules, inventory, and billing.

**Inventory System:** External system responsible for tracking and updating hospital supplies, integrated into inventory management.

**SMS API:** An external service used for sending notifications to patients or staff, typically for appointment reminders or updates.

**Payment Gateway:** A third-party service that handles billing and payments for patient services.

**Main Use Cases**

**Generate Reports:** Allows doctors and the institution to create reports based on patient treatment, staff performance, or hospital statistics.

**Inventory Management:** Tracks hospital supplies and ensures that necessary items are stocked, with input from nurses and the inventory system.

**Manage Staff Schedules:** Administers scheduling for doctors, nurses, and other staff, facilitating efficient workflow and resource management.

**Manage Billing & Payments:** Handles the financial aspects, allowing patients to pay for services and the institution to manage transactions.

**Appointment Scheduling:** Enables patients to book appointments, and staff to organize and confirm bookings.

**Manage Patient Information:** Doctors and nurses use this function to view and update patient records, ensuring accurate information is available for treatment.

**External Interactions**

**The Inventory System** is linked to the Inventory Management use case, ensuring supplies are updated and available.

**The SMS API** connects with Appointment Scheduling and other notifications, allowing communication with patients.

**The Payment Gateway** integrates with the Manage Billing & Payments use case, enabling secure transactions.