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Health Appointment System

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Introduction

Our group aimed to identify a key area for improvement in local healthcare services, focusing specifically on the operations and patient experiences at Flex Private Clinic, a small clinic in Bulawayo near Luveve.

During our research, we identified Flex Private Clinic as a potential site for our study. This clinic serves the local community and presents an opportunity to enhance healthcare delivery.

Problems Found:

- a) **Patient No-Shows and Cancellations:** A high rate of patient no-show has been noticed over a period of time. Resulting in the impact revenue and resource utilization. Patients may cancel or fail to show up for appointments.
- b) **Complex Scheduling Needs:** Managing diverse patient requirements, such as recurring appointments and specialized care, have complicated the scheduling process.
- c) **Limited Staff and Resource Availability:** Factors such as staff shortages, unexpected absences, can disrupt scheduling and lead to longer wait times for patients.
- d) **Staff Burnout and Turnover:** Inefficient scheduling can contribute to staff burnout, especially when employees are overworked due to scheduling gaps or high patient volumes.

Solutions:

Based on the problems found, we managed to come up with these following solutions:

- **Self-Scheduling:** Patients can book, reschedule, and cancel appointments online without needing to contact administrative staff.

- **Automated Reminders:** The system sends automated reminders via SMS or email to patients about their upcoming appointments. This helps reduce no-shows and ensures that patients are well-informed.
- **Real-Time Availability:** The system displays real-time availability of appointment slots, allowing patients to choose from open times that fit their schedules. This reduces the back-and-forth communication typically required to find a suitable time
- **Mobile Access:** Patients can access the appointment system via mobile devices, allowing them to schedule appointments anytime and anywhere. This flexibility is increasingly important in today's fast-paced environment.

Objectives:

After compiling our research, we managed to figure out the core functions our system should achieve. They include the following:

- **Appointment Scheduling:** It allows patients to book, modify, or cancel appointments.
- **Reminders and Notifications:** Send automated reminders to patients via email or SMS. Notify providers of upcoming appointments, including the ones approved.
- **Reporting and Analytics:** Generate reports on appointment statistics (no-shows, cancellations). Analyse patient flow and resource utilization.

Main Aim

The primary aim of the healthcare appointment system is to enhance patient satisfaction by offering a user-friendly platform for **scheduling appointments**. By optimizing appointment scheduling, the **system reduces waiting times**, ensuring a smoother flow of patients through healthcare facilities.

System Requirements:

- **Appointment Scheduling:** Patients should be able to book, modify, or cancel appointments easily.
- **Reminders and Notifications:** The system should send automated reminders via email or SMS to patients and notify providers of upcoming appointments.
- **Reporting and Analytics:** The ability to generate reports on appointment statistics (e.g., no-shows, cancellations) and analyse patient flow.

SCRUM

Scrum is an Agile framework designed to facilitate project management and improve collaboration among teams. It is a structured yet flexible framework that enhances project management through collaboration, iterative progress, and continuous improvement, making it particularly suitable for complex environments like healthcare.

This will be the methodology we will be implementing during the whole SDLC (System development life cycle).

Key Components of SCRUM:

1. **Sprints:** iterative cycles called sprints, typically lasting between one to four weeks. Each sprint focuses on delivering a specific set of features or improvements.
2. **Roles:**
 - **Product Owner:**
 - **Scrum Master:**
 - **Development Team**
3. **Artifacts:**
 - **Product Backlog:**
 - **Sprint Backlog:**
 - **Increment:**
4. **Ceremonies:**
 - **Sprint Planning**
 - **Daily Stand-ups**
 - **Sprint Review:**
 - **Sprint Retrospective**

Benefits of Scrum in Healthcare Appointment System

- **Improved Patient Care:** By enabling faster implementation of solutions, Scrum helps healthcare organizations respond more effectively to patient needs.
- **Regulatory Compliance:** The iterative nature of Scrum allows teams to adapt quickly to changes in healthcare regulations.

- **Increased Efficiency:** Scrum reduces administrative bottlenecks and streamlines workflows.
- **Enhanced Collaboration:** It fosters teamwork among diverse stakeholders, including medical staff and IT teams, leading to better project outcomes.