



Course Name: System Analysis and Design

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Group 1 Project Presentation

GROUP MEMBERS:

Ashwin	Bhatasara	N02419961W
Bright	Chivhenge	N02420361Y
Anotidaishe	Chipezeze	N02418712N
Mashiah	Phiri	N02419961W
Clever	Mapuranga	N02421942W
Tinotenda	Munda	N02419679M

***Health Care
Appointment
Scheduling
System***

Department of
computer science

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.
- We employed a mixed-methods approach for data collection, which included both surveys and interviews. This methodology allowed us to gather comprehensive insights from various stakeholders associated with the clinic.

The participants in our study included:

1. **Receptionist:** Provided insights into daily operations, patient flow, and administrative challenges.
2. **Random Customer:** Offered a firsthand perspective on patient satisfaction and the overall experience at the clinic.
3. **Supervisor of the Clinic:** Shared management insights, including operational challenges and areas for potential improvement.

CHALLENGES FOUND

1. **Demand and Supply Mismatch:** There were cases of significant fluctuations in patient demand, leading to either overcrowded schedules or underutilized resources. For instance, unexpected events like epidemics can spike demand (Covid 19), while periods of low demand can leave slots empty, increasing operational costs.
2. **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, which not only wastes time but delays care for other patients.
3. **Complex Scheduling Needs:** Managing diverse patient requirements, such as recurring appointments and specialized care, have complicated the scheduling process. This complexity often leads to time-consuming processes and increased frustration for both ends.
4. **Limited Staff and Resource Availability:** Factors such as staff shortages, unexpected absences, or external events (like natural disasters) can disrupt scheduling and lead to longer wait times for patients.
5. **Staff Burnout and Turnover:** Inefficient scheduling can contribute to staff burnout, especially when employees are overworked due to scheduling gaps or high patient volumes. This has lead to high turnover rates, which further complicates scheduling and affects the quality of patient care.

SOLUTION: APPOINTMENT SYSTEM

Upon reviewing the challenges found this is what we came up as our solution. Our system will be able to solve some of the following:

- **Self-Scheduling:** Patients can book, reschedule, and cancel appointments online without needing to contact administrative staff. This feature empowers patients to manage their own schedules conveniently.
- **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

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.

Additionally, it increases **operational efficiency** by streamlining administrative processes, which lessens the workload on healthcare staff and enables them to focus more on patient care.

OBJECTIVES

We believe our system should be able to perform the following:

- **Appointment Scheduling:** It allows patients to book, modify, or cancel appointments.
- **Patient Records Management:** Store and manage patient information (medical history). Access patient records during appointments.
- **Reminders and Notifications:** Send automated reminders to patients via email or SMS. Notify providers of upcoming appointments.
- **Resource Allocation:** Managing room and facility availability.
- **Reporting and Analytics:** Generate reports on appointment statistics (no-shows, cancellations). Analyse patient flow and resource utilization.