**DEVELOPMENT OF APPOINTMENT SCHEDULING APPLICATION FOR DIALYSIS PATIENTS**

A CAPSTONE PROJECT

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Chapter 4

Results and Discussion

This chapter demonstrates the outputs that were produced from the previous

chapters in particular of the varying activities performed in the different stages as

prescribed in the methodology. The main objective of the current study which is to

develop a mobile application that effectively manages appointment scheduling and

communication for dialysis patients is going to enhance the overall efficiency and

quality of care at Total Care Dialysis Center Tagoloan.

Definitely it focuses on overcoming the inability of the manual scheduling

process by implementing an automated application that schedules dialysis sessions,

reduces schedule conflicts, and enhances communication among patients, medical

practitioners, and administrative personnel. Precisely, the application was created to

offer a friendly interface, automate booking appointments, send timely reminders, and

provide safe patient information management.

In this chapter, emphasis is laid on how these goals were met by highlighting

the real functionality, usability, and performance of the application in action. It

emphasizes how the implemented solution ensures operational efficiency, improves

patient satisfaction by way of accurate reminders and scheduling, and lessens

healthcare staff workload through automated common tasks.

In addition, this chapter assesses the system's overall performance to ensure that

it addresses the project's desired goals of efficiency, reliability, and user satisfaction

while exhibiting its potential as a model in comparable healthcare facilities. The

presentation of discussions and results in this chapter is structured following the

stages of the selected methodology so that there can be a clear and systematic

explanation of system development from requirements analysis to design, testing,

implementation, and deployment

Requirements Analysis (Phase 1)

In this phase, data gathering and requirements analysis for the development of

Appointment Scheduling Application for Dialysis Patients. The process entailed

exploring the practices being followed at the dialysis center, which were primarily

manual scheduling with the use of whiteboards, printed checklists, and spreadsheets.

These conventional techniques proved to be hard to handle, prone to errors, and hard

to handle to administer with a large number of patients, usually leading to double

bookings, scheduling problems, and delayed alerts. To accurately determine the scope

and functions of the system, an interview was held with the head nurse through an

open-ended questionnaire, and the conversation was recorded for thorough analysis.

This exercise generated useful information on the day-to-day working routine of the

staff, the shortcomings of the existing methodology, and the distinct demands of

patients who need uniform, regular treatments. Based on these results, the critical

system requirements were enumerated, such as secure user authentication, effective

booking and rescheduling of appointments, conflict detection, role-based access for

patients and staff, and automated notification capabilities. The deliverable of this

stage was an extensive Software Requirements Specification (SRS) document, which

became the basis of system design and influenced the following development stages.

System Design (Phase 2)

In this phase took the requirements that were obtained and translated them into

an in depth application design that would act as the development blueprint. This stage

involved developing the technical framework and user interface that would solve the

scheduling issues highlighted in the requirements analysis. Various design tools were

employed in this phase to make sure there was clarity and accuracy in the system

representation. Figma was utilized to create wireframes for the staff and patient

appointment calendar and scheduling screens, giving a clear picture of the patient and

staff user interface. Lucidchart was utilized to build an Entity Relationship Diagram

(ERD), illustrating the logical database structure and highlighting how patient records,

appointments, and staff schedules would be related to one another. Besides, Draw.io

was utilized to show the application architecture, highlighting the interactions

between various modules like authentication, appointment booking, notification

services, and data storage. This process of design ensured that all required features

like slot availability check, conflict detection, reminder of notifications, and role

based access were translated into a unified framework. Deliverable in this phase were

user interface prototypes, a comprehensive ERD, and a application architecture document, which taken directed the development process in the following

implementation stage.