Chapter III

Presentation of the System

Methods

Methods This study used the Developmental Research Method and followed the Rapid Application Development (RAD) model. RAD emphasizes fast prototyping, continuous user feedback, and iterative improvements without needing a fully deployed system for evaluation. The stages of development included:

Requirement Planning – Interviews and observations were conducted to identify weaknesses in the current system.

User Design – Wireframes and flow diagrams were created and reviewed by stakeholders.

Rapid Construction – Modules were coded and tested in a simulated environment.

Cutover – The system was not deployed but was tested internally using dummy data.

This method enabled the development of a functional prototype aligned with user expectations and ready for further implementation.

Overview of the Existing System

The current Record and Billing System at the Basista Police Station provides a partially automated workflow for police clearance processing. Applicants are able to submit requests at the station, where police staff record transactions and manually track applications. Although it reduces some paperwork, the system lacks real-time updates, online access, and cashless payment capabilities. Furthermore, the system is designed solely for local use and cannot be easily adapted by other agencies. These limitations result in prolonged processing, repetitive visits for applicants, and challenges in administrative tracking.

Overview of the Proposed System

The enhanced version of the existing system builds upon its current framework while addressing key limitations. It introduces an online application module that allows applicants to submit requests remotely and track the status of their police clearance in real time. The system also integrates secure payment platforms such as GCash and Landbank, eliminating the need for cash transactions. On the administrative side, separate dashboards are provided for police staff, who verify and process applications, and for administrators, who monitor reports, manage users, and oversee payment records. The enhancements are designed to streamline workflows, improve data accuracy, and allow the system to be adapted for use by other agencies, making it dynamic and scalable.

DFD of the Proposed System

DFD level 1

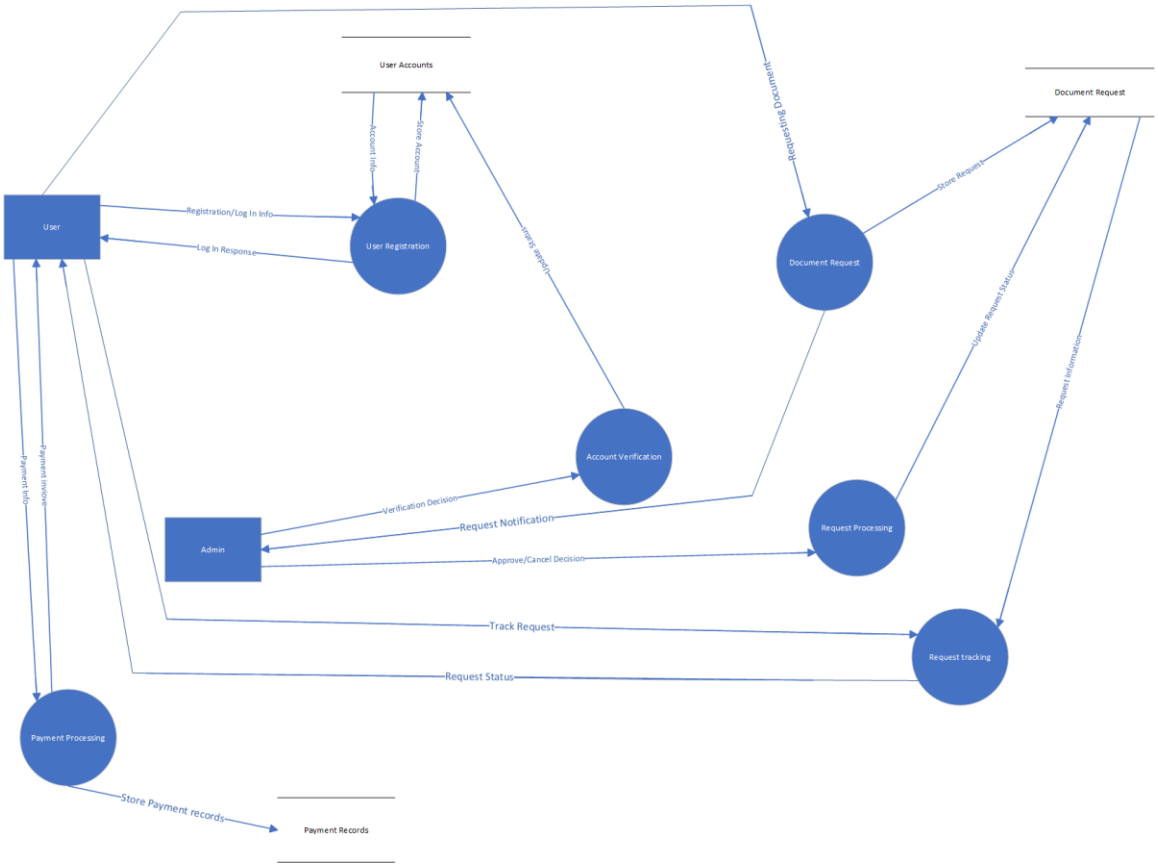

Figure 1.

Figure 1 shows the Level 1 Data Flow Diagram (DFD) of the Record and Billing System. It illustrates the major processes that handle user transactions and data flow within the system. The diagram breaks down the system into key components such as user registration, document request processing, billing and payment, and report generation. External entities like the requester and admin interact with the system through defined data flows. The system stores and retrieves data from the main databases, including the user records, billing information, and payment history. This DFD provides a clearer view of

how data moves between processes and supports the overall functionality of the automated system.

ERD of the Proposed System

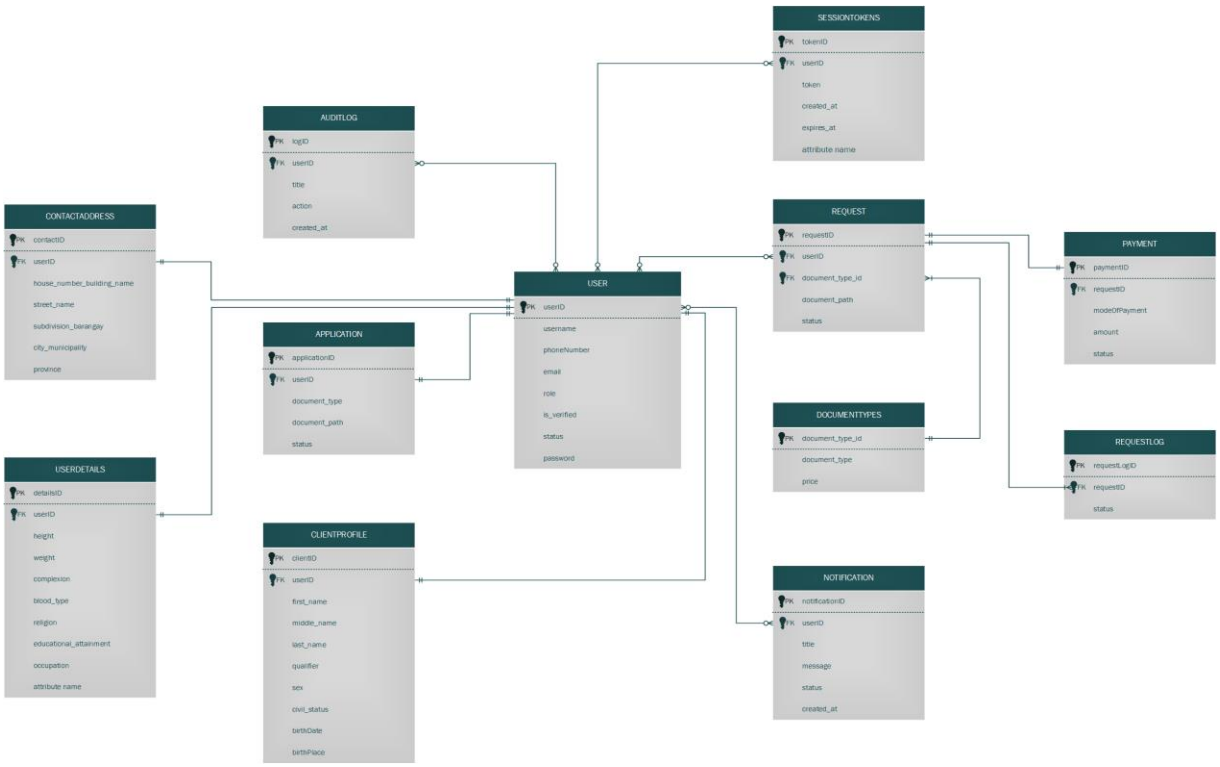

Figure 2.

Figure 2 shows the Entity-Relationship Diagram (ERD) of the Record and Billing System. It presents the system's data structure by identifying the key entities, their attributes, and the relationships between them. The diagram includes entities such as User, Request, Billing, Payment, and Admin. Each entity contains relevant attributes such as user details, request type, payment status, and billing amount. The relationships among entities

define how data is connected—for instance, a user can submit multiple requests, each request may have a corresponding billing record, and each billing record can be linked to one or more payments. This ERD provides a clear overview of how data is organized and interrelated within the system.

Data Dictionary

1.User

Column	Type	Constraints	Notes
id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
username	VARCHAR(30)	NOT NULL, UNIQUE	
profile_picture	VARCHAR(255)	NULL	
phone	VARCHAR(15)	NOT NULL, UNIQUE	
email	VARCHAR(50)	NOT NULL, UNIQUE	
role	VARCHAR(255)	DEFAULT 'client'	
is_verified	BOOLEAN	DEFAULT FALSE	
status	VARCHAR(50)	DEFAULT 'pending'	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	
password	VARCHAR(255)	NOT NULL	

2.Application

Column	Type	Constraints	Notes
application_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
user_id	INT(6) UNSIGNED	FK → User(id), UNIQUE, NOT NULL	
status	VARCHAR(50)	DEFAULT 'pending'	
admin_id	INT(6) UNSIGNED	FK → User(id)	
admin_notes	TEXT	NULL	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

3.Application Documents

Column	Type	Constraints	Notes
document_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
application_id	INT(6) UNSIGNED	FK → Application(application_id), NOT NULL	
document_type	VARCHAR(50)	NOT NULL	
document_path	TEXT	NULL	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

4.Client Profile

Column	Type	Constraints	Notes
client_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
user_id	INT(6) UNSIGNED	FK → User(id), UNIQUE, NOT NULL	
first_name	VARCHAR(30)	NOT NULL	
middle_name	VARCHAR(30)	NULL	
last_name	VARCHAR(30)	NOT NULL	
qualifier	VARCHAR(30)	NULL	
sex	VARCHAR(10)	NOT NULL	
civil_status	VARCHAR(20)	NOT NULL	
birthdate	DATE	NOT NULL	
birthplace	VARCHAR(50)	NOT NULL	
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	No created_at

5.Contact Address

Column	Type	Constraints	Notes
contact_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
user_id	INT(6) UNSIGNED	FK → User(id), UNIQUE, NOT NULL	
house_number_building_name	VARCHAR(50)	NULL	
street_name	VARCHAR(50)	NOT NULL	
subdivision_barangay	VARCHAR(50)	NOT NULL	
city_municipality	VARCHAR(50)	NOT NULL	
province	VARCHAR(50)	NOT NULL	No timestamps

6. User Details

Column	Type	Constraints	Notes
details_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
user_id	INT(6) UNSIGNED	FK → User(id), UNIQUE, NOT NULL	
height	DECIMAL(15, 0)	NOT NULL	Whole numbers only
weight	DECIMAL(15, 0)	NOT NULL	Whole numbers only
complexion	VARCHAR(20)	NOT NULL	
blood_type	VARCHAR(10)	NOT NULL	
religion	VARCHAR(20)	NOT NULL	
nationality	VARCHAR(30)	NOT NULL	
educational_attainment	VARCHAR(50)	NOT NULL	
occupation	VARCHAR(50)	NOT NULL	
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	No created_at

7. Request

Column	Type	Constraints	Notes
request_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
user_id	INT(6) UNSIGNED	FK → User(id), NOT NULL	
document_type_id	INT(6) UNSIGNED	FK → DocumentTypes(document_type_id), NOT NULL	**References table created later**
document_path	TEXT	NULL	
status	VARCHAR(50)	DEFAULT 'pending'	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

8. Payment

Column	Type	Constraints	Notes
payment_id	BIGINT(20) UNSIGNED	PK, AUTO_INCREMENT	
user_id	INT(6) UNSIGNED	FK → User(id), NOT NULL	
request_id	INT(6) UNSIGNED	FK → Request(request_id)	
mode_of_payment	VARCHAR(50)	NOT NULL	
amount	DECIMAL(10,2)	NOT NULL	
status	VARCHAR(50)	DEFAULT 'pending'	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

9. Audit Log

Column	Type	Constraints	Notes
log_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
user_id	INT(6) UNSIGNED	FK → User(id), NOT NULL	
title	VARCHAR(255)	NOT NULL	
action	VARCHAR(255)	NOT NULL	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	

10. Notification

Column	Type	Constraints	Notes
notification_id	BIGINT(20) UNSIGNED	PK, AUTO_INCREMENT	
user_id	INT(6) UNSIGNED	FK → User(id), NOT NULL	
title	VARCHAR(255)	NOT NULL	
message	TEXT	NOT NULL	
status	VARCHAR(50)	DEFAULT 'unread'	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	

11. System Notification

Column	Type	Constraints	Notes
system_notification_id	BIGINT(20) UNSIGNED	PK, AUTO_INCREMENT	
title	VARCHAR(255)	NOT NULL	
message	TEXT	NOT NULL	
type	VARCHAR(50)	NOT NULL	
status	VARCHAR(50)	DEFAULT 'unread'	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	

12. Session Tokens

Column	Type	Constraints	Notes
token_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
user_id	INT(6) UNSIGNED	FK → User(id), NOT NULL	
token	VARCHAR(255)	NOT NULL	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	
expires_at	DATETIME	NOT NULL	
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

13. Document Type

Column	Type	Constraints	Notes
document_type_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
document_type	VARCHAR(50)	NOT NULL	
price	DECIMAL(10,2)	NOT NULL	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

14.Request Log

Column	Type	Constraints	Notes
log_id	INT(6) UNSIGNED	PK, AUTO_INCREMENT	
request_id	INT(6) UNSIGNED	FK → Request(request_id), NOT NULL	
status	VARCHAR(50)	NOT NULL	
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	

APPENDIX E

CURRICULUM VITAE

Personal Information

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Religion : Roman Catholic
Father's Name : Marcelino S. Dela Cruz
Mother's Name : Felicidad V. Dela Cruz
Interest :

Educational Background

Tertiary : Pangasinan State University-San Carlos Campus

Secondary : Dumpay National High School

Elementary : Dumpay Elementary School

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Birth Place : **San Carlos City, Pangasinan**
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Religion : **LDS**
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Mother's Name : **Jovita DG. Perida**
Interest :

Educational Background

Tertiary : **Pangasinan State University-San Carlos Campus**

Secondary : **Dumpay National High School**

Elementary : **Manuel L. Quezon Elementary School**

Degree Sought : **Bachelor of Science in Information Technology**

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Religion : Roman Catholic
Father's Name : Joseph A. Datuin
Mother's Name : Alma V. Datuin
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Tertiary : Pangasinan State University-San Carlos Campus

Secondary : Urbiztondo National High School

Elementary : Jose Rizal Elementary School

Degree Sought : Bachelor of Science in Information Technology