

West Visayas State University
COLLEGE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
La Paz, Iloilo City, Philippines

BARANGAY INFECTIOUS DISEASES INFORMATION MANAGEMENT WITH
GIS FOR MAPPING AND SIR MODEL FOR PREDICTION

An Undergraduate Thesis

Presented to the Faculty of the
College of Information and Communications Technology

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La Paz, Iloilo City

In Partial Fulfillment
of the Requirements for the Degree
Information Systems

by

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June 2023

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Approval Sheet

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Abstract

The Disease Reporting Units in the Philippines were challenged due to the threat of rampant spread of infectious diseases over the last few years eradicating the potential of the country's objective in reversing outbreaks due to incomprehensive data management as part of the global health agenda. Accordingly, there was a need for improved infectious diseases information management that was an essential tool for data management and monitoring of affected populations in the Barangay Area. Since most of the current methods were heavily dependent on manual processes, this study aimed to develop a system that allowed collecting and managing of data, mapping of infectious diseases cases using geographic information system showing the households where the occurrences happened, allowed data visualization using heat maps showing the intensity of the infectious diseases and

predicting the spread of the three (3) infectious diseases specifically in Covid-19, Dengue, and Tuberculosis by using SIR model. The main objective of this study was to support the Barangay Health Workers on their current manual processes of managing infectious diseases data which our system evaluation suggests that the study achieved an overall "Very Good" rating based on the ISO 25010 standard garnering an overall mean of 4.535. Since the SIR model was only applicable to broad geographic scales like countries and regions, it cannot effectively help the system in its process to anticipate the spread of three infectious diseases (Covid-19, Dengue, and Tuberculosis). On the other hand, a barangay's small scale indicates that it cannot support the demands to consistently provide the needs of the model.

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Table of Contents

	Page
Title Page	i
Approval Sheet	ii
Acknowledgment	iii
Abstract	v
Table of Contents	vii
List of Figures	x
List of Tables	xii
List of Appendices	xiii
Chapter	
1 Introduction of the Study	1
Background of the Study	1
and Theoretical Framework	
Objectives of the Study	13
Significance of the Study	14
Definition of Terms	17
Delimitation of the Study	22
2 Review of Related Studies	24
Review of Related and Existing Studies	24
3 Research Design and Methodology	31
Description of the Proposed Study	31

Table of Contents

	Page
Methods and Proposed Enhancements	32
Components and Design	38
System Architecture	38
Database Design	40
Procedural Design	41
Process Design	54
Methodology	65
System Development Life Cycle	66
4 Results and Discussion	68
Implementation	68
Software Specifications	69
Hardware Specifications	70
User Specifications	70
Inputs and Outputs	70
Results Interpretation and Analysis	79
System Evaluation Results	83
5 Summary, Conclusions, and Recommendations	93
Summary of the Proposed Study Design	93
and Implementation	
Summary of Findings	95

West Visayas State University
COLLEGE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
La Paz, Iloilo City, Philippines

Table of Contents

	Page
Conclusions	97
Recommendations	99
References	101

List of Figures

Figure	Page
1 Conceptual Framework of the Study	11
2 SIR Model for Spread of Infectious Diseases	34
3 System Architecture of the Proposed System	38
4 Entity Relationship Diagram	40
5 Procedural Design of the Proposed System	41
6 UML Class Diagram of the Proposed System	53
7 Context Diagram of the Proposed System	54
8 Level 0 Diagram of the Proposed System	55
9 Level 1 DFD (Log-in)	56
10 Level 1 DFD (Input Households)	57
11 Level 1 DFD (Input Population)	58
12 Level 1 DFD (Input Cases)	59
13 Level 1 DFD (Search)	60
14 Level 1 DFD (Manage Cases)	61
15 Level 1 DFD (Generate Infectious Diseases Prediction Using SIR Model)	62
16 Level 1 DFD (Generate Infectious Diseases Heatmap)	63
17 Level 1 DFD (Generate Infectious Diseases Dashboard)	64

List of Figures

Figure	Page
19 User and Admin Log-in Interface	71
20 User Dashboard Interface	72
21 User Households Interface	73
22 User Population Interface	74
23 User Cases Interface	75
24 User Statistics interface	76
25 User Mapping Interface	77

List of Tables

Table	Page
1 ISO 25010 - Functional Stability	84
2 ISO 25010 - Reliability	85
3 ISO 25010 - Portability	86
4 ISO 25010 - Usability	87
5 ISO 25010 - Performance Efficiency	88
6 ISO 25010 - Security	89
7 ISO 25010 - Compatibility	90
8 ISO 25010 - Maintainability	91
9 Summary of ISO 25010	92

List of Appendices

Appendix	Page
A Letter to the Adviser	115
B Request Letter for Interview	116
C Request Letter for Historical Data	117
D Request Letter for Data Gathering	118
E Letter of Request to the Epidemiologist	119
F Endorsement Letter to the Technical Editor	120
G Endorsement Letter to the English Editor	121
H Endorsement Letter to the Thesis Format Editor	122
I Gantt Chart	123
J Entity Relationship Diagram	126
K Data Dictionary	127
L Sample Program Codes	129
M Software Quality Evaluation	132
N Disclaimer	138