iLearnCentral: A CLOUD-BASED LEARNING CENTER PLATFORM WITH MOBILE TECHNOLOGY

A Research/Capstone Proposal
Presented to the Faculty of the
College of Computer Studies, University of Cebu

In Partial Fulfillment of the Requirements for the degree Bachelor of Science in Information Technology

By

Jephunneh C. Mabini Rhea Shane M. Chiong Cristian G. Paragoso John Rey D. Duano

> Edsel C. Paray Adviser

September 2020

ACKNOWLEDGMENT

The completion of this study would not be possible without the presence of the following:

First and foremost, we offer our warm gratitude to our Adviser, Mr. Edsel C. Paray, for sharing his knowledge and guidance in writing our manuscript, for being patient in checking our papers, and for giving suggestions and inspiration for the study's completion.

To our dear parents, we offer our warm gratitude for the prayers, love, concern, and financial support.

To those who are not mentioned but, in one way or another, have helped us in this study, the product of this manuscript would not be possible without all of them.

Above all, the Almighty Father, the source of infinite wisdom, strength, and goodness. To God be the glory!

The Researchers

Jephunneh C. Mabini Rhea Shane M. Chiong Cristian G. Paragoso John Rey D. Duano

DEDICATION

This project is lovingly dedicated to our respective parents, who have been our constant source of inspiration. They have given us the drive and discipline to tackle a task with enthusiasm and determination. Without their love and support, this project would not have been possible.

To our advisers and professors who genuinely helped us to finish this work,

And above all,

To our beloved God Almighty who never surrendered to shed us His love, grace and wisdom to accomplish this study that, somehow in the very near future, may contribute to help those who will use and appreciate it.

APPROVAL SHEET

This Research/Capstone Project Study titled iLearnCentral: A CLOUD-BASED
LEARNING CENTER PLATFORM WITH MOBILE TECHNOLOGY prepared and
submitted by Jephunneh C. Mabini, Rhea Shane M. Chiong, Cristian G. Paragoso, John
Rey D. Duano has been examined and is recommended for approval and acceptance.

submitted by Jephunneh C.	Mabini, Rhea Shane M. Chiong	, Cristian G. Paragoso, John
Rey D. Duano has been examined and is recommended for approval and acceptance.		
RECOMMENDED:		
Edsel C. Paray	<u>Eri</u>	c P. Ortega
Adviser	IT Rese	arch Coordinator
APPROVED BY THE Exan	nining Tribunal on <i>Proposal Hea</i>	uring with a group verdict of
	Chairman	
Janeth S. Ugang Member	<u>Laila M. Alegado</u> Member	Rechie Ople Censor
ACCEPTED and APPROVI	ED in partial fulfillment of the	requirements in Bachelor of
Science in Information Tech	nology.	
	<u>N</u>	Ioma D. Ortega, MCS
		Dean, UC – CCS
	Da	ite:

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENT	ii
DEDICATION	iii
APPROVAL SHEET	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
CHAPTER I: INTRODUCTION	
Rationale of the Study	1
Objective of the Study	2
Scope and Limitations	2
Significance of the Study	3
Flow of the Study	4
Definition of Terms	5
CHAPTER II: REVIEW OF RELATED LITERATURE AND STUDIES	
Related Literatures	6
Related Studies	9
Comparative Matrix	10
CHAPTER III: RESEARCH METHODOLOGY	
Software Engineering Methodology	12
Planning/Conception-Initiation Phase	14
Business Model Canvass	15
Program Workflow	16
Validation Board	19
Gantt Chart	20

Functional Decomposition Diagram	22
Analysis-Design Phase	24
Use Case Diagram	25
Storyboard	26
User Interface Diagram	28
Database Design	42
Entity-Relationship Diagram	53
Data Dictionary	54
Network Design	
Network Model	66
Network Topology	66
Development/Construction/Build Phase	67
Technology Stack Diagram	67
Software Specification	69
Program Specification	70
Software List of Modules	70
Testing/Quality Assurance Phase	72
Unit Testing	72
Integration Testing	78
Alpha Testing	82
Acceptance Testing	84
Implementation/Deployment Phase	97
Cost Specification	97
Software Specification	96
Hardware Specification	96
Human Resource Specifications	97

User Guide	98
Installation Guide	115
Project Roadmap	116
CONCLUSION	116
RECOMMENDATIONS	117
REFERENCES	118
TEAM PROFILE	130
APPENDICES	
A – Consultation Logs	120
B – Censor's Certificate	121
C – Transmittal Letters(Town Central Adventist Learning Center)	122
D – Transmittal Letters(Paraclete Learning Center)	123
E – Learning Center Questionnaire	124
F – Learning Center Questionnaire Cont'd	125
G – Educator Questionnaire	126
H – Educator Questionnaire Cont'd	127
I – Learning Center Survey Results	128
J – Educator Survey Results	129

LIST OF TABLES

Table No.	Table Name	Page
1	Comparative Matrix	10
2	Business Model Canvas	15
3	Validation Board	19
4	Gantt Chart	20
5	User Document	42
6	Learning Center Document	43
7	Learning Center Staff Document	44
8	Educator Document	44
9	Resume Document	45
10	Student Document	46
11	Job Vacancy Document	47
12	Job Application Document	47
13	Course Document	48
14	Enrollment Document	48
15	Payment Document	49
16	Class Document	49
17	Lesson Plan Document	50
18	Student Record Document	50
19	Class Activity Document	50
20	Messages Document	51

21	Post Document	51
22	Search History Document	52
23	Subscription Document	52
24	Sales Document	52
25	Database Data Dictionary	54
26	Software List of Modules	70
27	Unit Testing – Learning Center Application	72
28	Unit Testing – Educator Application	75
29	Unit Testing – Student Application	76
30	Integration Testing	78
31	Alpha Testing	82
32	Acceptance Testing	84
33	Software Requirements Specification	96
34	Hardware Specifications	96
35	Hardware Resource Specifications	97

LIST OF FIGURES

Figure No.	Figure Name	Page
1	Flow of the Study	4
2	Agile Development Methodology	12
3	User Activity Program Workflow	16
4	Hiring Module Program Workflow	17
5	Enrolment Module Program Workflow	18
6	Scheduling Module Program Workflow	18
7	Functional Decomposition Diagram (Learning Center)	22
8	Functional Decomposition Diagram (Educator)	23
9	Functional Decomposition Diagram (Student)	24
10	Use Case Diagram	25
11	iLearnCentral Storyboard	26
12	Login Page	28
13	Account Type Selection Page	29
14	Sign up Page	29
15	Learning Center Profile Page	30
16	Learning Center About Page	30
17	Learning Center Feed Page	31
18	Learning Center Job Posts Page	31
19	Learning Center Enrolment Page	32
20	Learning Center Educators Page	32

21	Learning Center Classes Page	33
22	Learning Center Enrollment and Scheduling	
	Subscription Page	33
23	Learning Center Search Page	34
24	Learning Center Recommended Learning Centers Page	34
25	Learning Center Sidenav Page	35
26	Educator Profile Page	35
27	Educator Information Feeds Page	36
28	Educator Job Posts Page	36
29	Educator Classes Page	37
30	Educator Search Page	37
31	Educator Learning Center Page	38
32	Ecucator Message Page	38
33	Student Profile Page	39
34	Student Information Feeds Page	39
35	Student Courses Page	40
36	Student Classes Page	40
37	Student Search Page	41
38	Student Recommended Learning Centers Page	41
39	Entity Relationship Diagram	54
40	Network Model	69
41	Network Topology	70
42	Technology Stack Diagram	71
43	Log In Page	102

44	Account Type Selection Page	103
45	Sign Up Page	104
46	Learning Center User Interface	110
47	Educator User Interface	114
48	Student User Interface	118
49	Project Roadmap	120