









DEVELOPMENT OF COMMERCIAL WEB PORTAL: **XCELEARN SEARCH YOUR LEARNING STYLE (X-SYLS)** MODULE FOR XCELEARN E-LEARNING PLATFORM

MUHAMMAD SYAFIQ BIN IBRAHIM











FACULTY OF ARTS, COMPUTING AND CREATIVE **INDUSTRY** SULTAN IDRIS EDUCATION UNIVERSITY

2023





















DEVELOPMENT OF COMMERCIAL WEB PORTAL: XCELEARN SEARCH YOUR LEARNING STYLE (X-SYLS) MODULE FOR XCELEARN E-LEARNING **PLATFORM**

MUHAMMAD SYAFIQ BIN IBRAHIM

FINAL YEAR PROJECT REPORT SUBMITTED TO MEET THE REQUIREMENTS FOR ACQUISITION OF BACHELOR'S DEGREE (SOFTWARE ENGINEERING (EDUCATIONAL SOFTWARE)) WITH HONOR

FACULTY OF ARTS, COMPUTING AND CREATIVE INDUSTRY SULTAN IDRIS EDUCATION UNIVERSITY

2023













FAKULTI SENI, KOMPUTERAN DAN INDUSTRI KREATIF

PERAKUAN KEASLIAN PENULISAN

Nama Pelajar:

Muhammad Syafiq Bin Ibrahim

No. Pendaftaran:

D20191087052

Nama Ijazah:

Bachelor Degree (Software Engineering (Educational Software)) with

Honors

Bidang Pengkhususan:

System and Web Developement

Tajuk Projek:

Development Of Commercial Web Portal: Xcelearn Search Your

Learning Style (X-SYLS) Module For Xcelearn E-Learning Platform

Saya sahkan bahawa segala bahan yang terkandung dalam laporan projek tahun akhir ini adalah hasil usaha saya sendiri. Sekiranya terdapat hasil kerja orang lain atau pihak lain sama ada diterbitkan atau tidak (seperti buku, artikel, kertas kerja, atau bahan dalam bentuk yang lain seperti rakaman audio dan video, penerbitan elektronik atau Internet) yang telah digunakan, saya telah pun merakamkan pengikhtirafan terhadap sumbangan mereka melalui konvensyen akademik yang bersesuaian. Saya juga mengakui bahawa bahan yang terkandung dalam laporan projek tahun akhir ini belum lagi diterbitkan atau diserahkan untuk program atau diploma/ijazah lain di mana-mana universiti.

Tarikh Tandatangan Pelajar

Perakuan Penyelia:

Saya akui bahawa saya telah membaca karya ini dan pada pandangan saya karya ini adalah memadai dari segi skop dan kualiti untuk tujuan penganugerahan Ijazah Sarjana Muda Pendidikan (Teknologi Maklumat / Multimedia / Reka Bentuk Berkomputer) dengan Kepujian.

/2/2023

Tarikh

Tandatangan Penyelia

(Asso. Prof Ts. Dr Muhammad Modi Bin Lakulu)











APPRECIATION

First, I would like to express my gratitude to Allah S.W.T, because of His abundance and grace, I was able to complete this thesis successfully despite encountering various challenges and obstacles. Alhamdulillah. On this occasion, I would like to express my infinite gratitude to Assoc. Prof Ts. Dr. Muhammad Modi Bin Lakulu, as my supervisor for his patience, support, advice, and guidance given helped a lot in the success of this thesis. All his help, enthusiasm, strategy, and wisdom have taught me a lot to be a researcher and produce the best system. A thousand thanks to both parents whom I respect, Ibrahim bin Isa and Siti Aminah bin Hussain who always give me love, encouragement, prayers, reminders, and life guidance that I really need. Thank you to my family and friends who never stop providing support and help so that this thesis can be completed successfully. Indeed, all the sacrifices that have been made I greatly admire and will remember for the rest of my life. Finally, thanks also to all those involved directly and indirectly in providing suggestions and assistance in completing this thesis. Hopefully this research and thesis can be used as a container of useful knowledge for future generations to see.



















ABSTRAK

Pembelajaran menjadi semakin sukar apabila aliran teknologi berkembang pesat. Walaupun dengan platform pembelajaran yang sangat baik seperti Xcelearn, pengguna masih berasa tertekan, dan pembelajaran menjadi kurang menyeronokkan kerana sukar untuk memahami bahan pembelajaran. Tujuan Xcelearn Search Your Learning Styles (X-SLYS) adalah untuk membantu pelajar memahami perkara yang mereka pelajari dengan mudah dengan menggunakan kaedah soal selidik untuk mencari gaya pembelajaran yang paling sesuai untuk pengguna. X-SLYS ini akan memberi manfaat kepada pengguna Xcelearn iaitu pelajar, ibu bapa dan guru.





























iv

DEVELOPMENT OF COMMERCIAL WEB PORTAL: XCELEARN SEARCH YOUR LEARNING STYLE (X-SYLS) MODULE FOR XCELEARN E-LEARNING PLATFORM

ABSTRACT

Learning becomes more and more difficult as the flow of technology developed rapidly. Even with the excellent learning platform such as Xcelearn, user still feel stressful, and learning become less enjoyable since it hard to understand the learning material. The purpose of the Xcelearn Search Your Learning Styles (X-SLYS) is to help learners to easily understand the things that they learn by utilize the questionnaire method to find most suitable learning styles for the user. This X-SLYS will be beneficial to the Xcelearn user which is learners, parents, and teachers.





















CONTENTS

			Page
CERTIFICATE	OF A	UTHENTICITY OF WRITING	i
APPRECIATIO	Ν		ii
ABSTRAK			iii
ABSTRACT			iv
CONTENTS			V
LIST OF TABI	LES		ix
LIST OF FIGU	RES		X
LIST OF ABBI	REVIA	TIONS	xi
05-45068LIST OF APPE	NDIX	ES 17 Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah	Xii ptbup
CHAPTER 1	INT	RODUCTION	
	1.1	Overview	1
	1.2	Background	2
	1.3	Problem statement	3
	1.4	Research objective	4
	1.5	Research questions	4
	1.6	Product scope	4
	1.7	Project significance	5
	1.8	Conclusion	6
CHAPTER 2	LITI	ERATURE REVIEW	
	2.1	Introduction	7
	2.2	VAK framework	8











2.2.1



Visual learning style





vi

9

		2.2.2 Auditory learning style	9
		2.2.3 Kinaesthetic learning style	10
	2.3	Theory of Cognitive Development by Jean Piaget	11
	2.4	Recommendation System	12
		2.4.1 Decision tree-based algorithm	12
		2.4.2 Content-based algorithm	13
		2.4.3 Collaborative filtering	13
		2.4.4 Ontology-based	14
	2.5	Comparative Analysis	15
	2.6	Conclusion	17
BAB 3 05-4506832 pustak	RESI	EARCH METHODOLOGY	
9 00-100002	3.1	Introduction Kampus Sultan Abdul Jalil Shah Introduction	18
	3.2	Waterfall Model	19
	3.3	Throwaway Prototyping Model	20
	3.4	Evolutionary Prototyping Model	21
	3.5	Model Comparison	23
	3.6	Suitable Methodology	30
	3.7	Conclusion	30
BAB 4	PRO	DUCT DEPLOYMENT	
	4.1	Introduction	31
	4.2	Installation and Configuration of System Componen	32
		4.2.1 Visual Studio Code	32
		4.2.2 Laragon	34
		4.2.3 Laravel	35



















vii

	4.3	Database design	37
		4.3.1 phpMyAdmin	37
	4.4	Interface design	38
		4.4.1 Application layout	39
	4.5	Conclusion	45
BAB 5	TEST	TING AND ANALYSIS	
	5.1	Introduction	46
	5.2	Testing	47
	5.3	Research instrument	47
	5.4	Data Analysis and discussion	47
		5.4.1 Question 1	48
05-4506832 Pustaka		5.4.2 Question 2 Umy PustakaTBainun PustakaTBainun	49 ptbupsi
		5.4.3 Question 3	49
		5.4.4 Question 4	50
		5.4.5 Question 5	51
		5.4.6 Question 6	52
		5.4.7 Question 7	53
		5.4.8 Question 8	54
		5.4.9 Question 9	55
		5.4.10 Question 10	56
	5.5	Conclusion	57
BAB 6	CON	CLUSION AND FUTURE WORK	
	6.1	Introduction	58
	6.2	Discussion	59
	6.3	Achievements	59













REFERENCE







viii

6.4	Improvement of the study	60
	6.4.1 Commercialization potential	61
	6.4.2 Usefulness	61
6.5	Conclusion	62
		63



















LIST OF TABLES

Table No.		Page
Table 2.5	Comparison of platform that use learning style feature. (Chapter 2. Table 1)	16
Table 3.5.1	Model advantages comparison (Chapter 3. Table 1)	23
Table 3.5.2	Model disadvantages comparison (Chapter 3. Table 2)	25
Table 6.3	Objectives and achievements of X-SYLS (Chapter 6. Table 1)	59





















Figure No.		Page
Figure 3.2	waterfall model stages (Chapter 3. Figure 1)	19
Figure 3.3	Throwaway prototype model stages (Chapter 3. Figure 1)	20
Figure 3.4	Evolutionary prototyping stage (Chapter 3. Figure 2)	22
Figure 4.2.1	Visual Studio Code Interface (Chapter 4. Figure 1)	33
Figure 4.2.2	Laragon interface (Chapter 4. Figure 2)	35
Figure 4.2.3	Laravel interface (Chapter 4. Figure 3)	36
Figure 4.3.1	phpMyAdmin interface (Chapter 4. Figure 4)	36
Figure 4.4.1.1	User demographic interface (Chapter 4. Figure 5)	40
Figure 4.4.1.2	Question 1 interface (Chapter 4. Figure 6)	41
Figure 4.4.1.3	Question segment interface (Chapter 4. Figure 7)	42
Figure 4.4.1.4	section segment interface (Chapter 4. Figure 8)	43
Figure 4.4.1.5	User result interface (Chapter 4. Figure 9) Name of the state of the	44 ptbupsi
Figure 4.4.1.6	Question 3 interface (Chapter 4. Figure 10)	45
Figure 5.4.1	Question 1 (Chapter 5. Figure 1)	48
Figure 5.4.2	Question 2 (Chapter 5. Figure 2)	59
Figure 5.4.3	Question 3 (Chapter 5. Figure 3)	50
Figure 5.4.4	Question 4 (Chapter 5. Figure 4)	51
Figure 5.4.5	Question 5 (Chapter 5. Figure 5)	52
Figure 5.4.6	Question 6 (Chapter 5. Figure 6)	53
Figure 5.4.7	Question 7 (Chapter 5. Figure 7)	54
Figure 5.4.8	Question 8 (Chapter 5. Figure 8)	55
Figure 5.4.9	Question 9 (Chapter 5. Figure 9)	56
Figure 5.4.10	Question 10 (Chapter 5. Figure 10)	57



















хi

LIST OF ABBREVIATIONS

X-SYLS Xcelearn Search Your Learning Style System

XCelearn Learning Platform

SRS Software Requirement Specification

SDD Sofware Design Document

STD Software Testing Description



















LIST OF APPENDIXES

A	Gantt Chart
В	SRS
С	SDD
D	STD

















CHAPTER 1

INTRODUCTION

1.1 Overview

This research refers to "Development of Commercial Web Portal: Xcelearn Search Your Learning Style (X-SYLS) Module for Xcelearn e-learning platform" web application. X-SYLS is a module to help the user to know what types of learning styles are suitable for them. There are three types of learning style which are visual, auditory and kinesthetic.

First, visual learning is a style where the user learns by reading or seeing pictures.

Users tend to remember and understand the things they learn on spot. The user that

uses this type of learning can picture what they learn in their head. The user tends to like to see what they are learning since it makes them understand the learning material faster.

Secondly, auditory learning is a method where users tend to learn quicker by hearing and listening. They can remember and understand what they hear compared to written ones. They like to use podcasts as a learning medium since it helps them in study.

Lastly, kinesthetic learning style which users tend to more understand when they do the thing that they learn. They like to touch or manipulate the learning material. They learn quicker by doing the lessons.

1.2 Background

Finding your learning method or learning style helps you to learn more effectively. Finding out how you can understand learning material more easily will really help in study especially. Implementing your real learning method will also save a lot of time since you can focus on the method which is compatible with you.

X-SYLS helps the teacher, parent, and student to learn and use the Xcelearn platform more efficiently. Not knowing your learning style can make simple learning material become hard to understand. Even with a great learning platform like Xcelearn, if the

user cannot use it well then it will just become useless. Users need to know what their strength is and use it to learn better.

The user may have more than one learning style. There is a user who can have two or even all the learning styles that are compatible with them. If the user is compatible with more than one learning style, then they can combine all the learning styles to have a greater result. This X-SYLS module will help the user to find it out.

1.3 Problem Statement

There are so many learning platforms that users can use to help them study. However even with all these facilities, users still cannot perform in learning and exams. This is mostly due to incompetent in finding the most suitable learning style for them. They continuously learn using the other style which is not suitable for them.

Learning style plays a very important role for the user to study effectively. There are a few problems that lead for the needed of knowing the suitable learning method which is:

- a) The users have difficulty in comprehending learning material.
- b) The users easily get bored while studying since they do not know the suitable learning method that is suitable for them.

Overall, this research aim is to develop X-SYLS Module in the Commercial Web

Portal for introducing Xcelearn e-learning platform. X-SYLS is extremely important in this Commercial Web Portal so that the user can use the Xcelearn platform more efficiently.

1.4 Research Objective

This study aims to:

- a) To identify the problem that the user has difficulty in understanding learning material.
- b) To build a prototype for the Xcelearn commercialize portal base on the problem identify in the O1
- c) to test the function based on the prototype in O2

1.5 Research Questions

The research questions are as follows:

- a) What makes users feel learning becomes boring and to understand?
- b) How to know what learning style is suitable for the user?
- c) How to ensure the functionality of the X-SYLS goes well?

1.6 Product Scope

The scope of this project is the X-SYLS module will consist of several learning

styles. Users will be asked questions and they need to answer all of it. The most suitable learning method for them will be derived from the question asked. User also asked to enter the demographic to find out how gender and age are affecting human intellectual based on Theory of Cognitive Development by Jean Piaget

The targeted user to use this X-SYLS is the Instructors such as Teacher and Lecturer's, Parents and students all around Malaysia that want to use Xcelearn platform more effectively.

1.7 Project significance

The importance of this study is to see how knowing your learning style will impact the Xcelearn learning platform users. The main reference of this module is from journals and other learning material such as from YouTube, google chrome and others. This reference will help to understand how all the learning styles work.

Learning method will for sure help to grow the user's knowledge. Knowing how to study will make users become more relaxed and can avoid mental breakdown or stressing out. The user then can implement their learning style in the Xcelearn learning platform to help them learn more better. This for sure will help the growth of the Xcelarn learning platform user as well. Not understanding the learning material

will lead to boredom and then users will think that the learning platform did not help them.

1.8 Conclusion

This thesis contains six chapters. The first chapter discusses the foreword, study background, problem statement, objectives, scope, and importance of the study. The second chapter is a study of literature. A review of the literature will explain as well comparing previous studies related to product development and summaries of studies that have been conducted. The third chapter is methodology study development. This chapter will explain the methods and methods used namely evolutionary prototyping model. Next, the fourth chapter will talk about the study design. This chapter will describe in more depth about the design of the study conducted such as flow charts and storyboards. The fifth chapter of this thesis will discuss the findings study where all the findings from the study will be discussed further. Finally, chapter six is a conclusion. This chapter will summarize all the findings obtained as well as giving the importance and limitations encountered throughout the study.

Overall, X-SYLS is a feature that should never be neglected since it has become something that is so useful. This is because it cannot be denied that using this module will save users time, effort, and money.