QUALIFICATION ADMISSION TO UNIVERSITY (Get-U)

MUHAMMAD AFZAN BIN AZMAN

BACHELOR OF COMPUTER SCIENCE

(SOFTWARE ENGINEERING)

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA
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DECLARATION

I hereby declare that this project report entitled

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is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT: _____ Date : 30 /08 /2013
(MUHAMMAD AFZAN BIN AZMAN)

SUPERVISOR: _____ Date : _____
(PROFESSOR MADYA NORHAZIAH BT MD SALLEH)

DEDICATION

From this thesis, I dedicate to my family and all my friends. A very special gratitude to my lovely parents ,Azman and Khaidah who's given me word of encouragement and guide me to stay strong and persevere to complete this thesis. Also not forget to all my brothers and sister who have never left my side and very special for me.

I also dedicate this to my dearest friends who have supported me throughout the process. I will always appreciate all they have done for helping me, especially my roommate Amirul for helping me develop many kind of skills, my housemate Yaser, Muhamad for spending many hours to teach the format and the critical path of this thesis, and Hariz who gave me knowledge about the application to be done.

I dedicate to all member who directly and indirectly to guide and help me to complete this thesis. All of u have been my best cheerleaders all the time.

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To all my friends, thank you for your help and encouragement in completing this study. Our friendship makes my life a wonderful experience and you will always in my mind.

ABSTRACT

This project is based on the decision support system category which using the mobile application. This application can search what University available and the suitable courses for student who is complete program of study as SPM, STPM or Matriculation. Furthermore this application is a standalone system where students can use on their android phone offline. The goals of this application are to help student eligible to entry IPTA based on grade. The problem statement for creating this app are student difficult to make decisions on choosing which university available and what courses are suitable based on SPM or STPM result. Nowadays many students used smart phone and no such application in mobile without connecting to the internet. The objective of this system is to investigate whether student eligible to get IPTA based on the grade SPM/STPM. Also to assist the students find a suitable university by just using a smart phone and to make recommendations according to current development using android application which people mostly used smart phone. For this system, the methodologies used are Expert System Development Life Cycle (ESDLC). The expected output of this project is able to build android application that intelligently gives available course and IPTA for the user. This system is an android application using Basic4Android as the tools which is using visual basic (VB) language.

ABSTRAK

System iniadalahberdasarkan decision support system dimana system inimenggunakanaplikasitelefonmudahalihataupundimana-mana tablet yang menggunakan platform android. Aplikasiinimembolehknpelajarlepasan SPM, STPM atauMatrikulasiuntukmecariUniversitidengankursus-kursus yang bersesuaiandenganpelajar.Tambahan pula aplikasiinimerupakanaplikasisistem standalone dimanapelajarbolehmenggunakantelefonmudahalih android tanpaapa-apasambunganke internet. Matlamataplikasiiniadalahuntukmembantupelajar yang layakuntukmemasuki IPTA berdasarkangreddankeputusan SPM,STPMatauMatrikulasi.

Penyataanmasalahuntukmewujudkanaplikasiiniadalahpelajarsukaruntukmembuatkeputusanuntukmemilihkursus di universiti yang adadanapakursus yang sesuaidenganmerekaberdasarkankeputusan SPM, STPM, Matrikulasi. Kiniramaipelajarmenggunakantelefonpintardantiadapermohonanitu di mudahalihtanpamenyambungkelamansesawang.Objektifsisteminiadalahuntukmemastikansamaadapelajarlayak tau tidakuntukmendapatkanmana-mana IPTA berdasarkan SPM / STPM gred. Jugauntukmembantupelajar-pelajarmencarikursus yang bsesuaidenganhanyamenggunakantelefonpintardanjugauntukmembuatcadangan yang bersesuaiandenganperkembangansemasamenggunakanaplikasi android yang kebanyakannya orang menggunakantelefonpintar.Metodologi yang digunakandidalamsisteminiadalah Expert System Development Life Cycle (ESDLC).Hasilprojekinidijangkamampumenghasilkanaplikasi android yang bijakbagimembantumenggunauntukmendapatkankursus yang bersesuaianmengikutgreddanuniversti yang menawarkankursus-kursustersebut.Sisteminiadalahsebuahaplikasi android yang menggunakan Basic4Android sebagaialatuntukmenghasilkanaplikasiini yang manamenggunakan visual basic (VB) sebagaibahasacomputer.

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CHAPTER I

INTRODUCTION

1.1 Project Background

Current information technology is useful for all levels of society, especially the government, suppliers, customers, and more. Following this, many developers have been developing android applications to compete in the modern era to evaluate the performance of each individual or organization.

These studies tend to focus on developing android applications using Basic4Android as a tool to develop this application.

This project is based on the decision support system category which using the mobile application. This application can search what course and where University available for student who are complete program of study. Furthermore this application is a standalone system where students can use on their android phone offline. The goals of this application are to ensure that student eligible to entry IPTA with suitable course based on grade.In this expert system, android development tool is used. User must complete the form provided by this system to getwhich course and university are suitable for the user or client. Not only the type of course shown, it's also with details course specification and what faculty provided.

1.2 Problem statement(s)

a) **Difficult to make decisions which university is suitable base on SPM or STM result.**

User only needs to complete the form and insert the value of the result. Then, the system will provide which IPTA suitable including the course.

b) **Nowadays many students used smart phone.**

A lot of people using the Smartphone or tablet to accessing the internet to get information. A student who has completed the exam just applying UPU without knowing which University eligible for the student.

c) **No such application in mobile.**

1.3 Objective

–This Get-U system embarks on the following objectives:

- To investigate whether student eligible to get IPTA based on the grade SPM/STPM.
- To assist the students find a suitable university by just using a smart phone.
- To make recommendations according to current development using android application which people mostly used smart phone.
- To make effective system for student to choose a University.

1.4 Scopes

The scope of this application includes the type of artificial intelligence methods that can be used in this system. The targets users that we focus are student who are complete the program of study, for example SPM/ STPM.

I.   **Users:**
- Customer:
  -Student
  -Users

- Administrator

II.   **AI Method**

Fuzzy Logic rule based

1.5 Project significance

This system application can be used by all people who have result in SPM, STPM or Matriculation but not know what course is available and suitable depends on the result they have to get the IPTA. In addition, this app also can help reduce the cost and time to find out the information about the course and IPTA and the condition to get University.

1.6 Expected Output

The expected output of this project is able to build android application that intelligently gives available course and IPTA for the user. This application is easy and more flexible also dynamic when we complete the form and insert the result. This application will show the result available course.

1.7 Conclusion

From this chapter, the project background, problem statements, project objective, scope, project significance and the expected output are being identified in order to develop the system that will be used by the targeted users.

In the next chapter, research will be done to determine the methodology of the project as well as the requirements and constraints of the system. It will also provide a timeline of the project life cycle.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1   Introduction

This chapter will focus on research about the existing system. This will include collecting and analyzing data regarding research on AI technique such as knowledge-based system. AI technique can be considered as a tool that emulate thought to help in solving problems, this technique requires expert knowledge to apply in computer programming. However, a rule based expert system uses a simple, easy rule structure, and hence has been the most common technique in knowledge-based AI for developing Qualification admission to IPTA System. The rules can be programmed using a simple 'if-else' structure in a natural language. As well as, comparison between two existing systems.

2.2   Fact and Findings

During research, many AI technologies are analyzed based on their strength and weakness, plausibility, as well as whether it is plausible to implement with the upcoming system. The system would require at least 1 technology for this project's purpose.

Other than that, research has been done between the existing system based on the structure of the system, to determine how the related between membership function using fuzzy be implemented to rule based.

2.2.1 Domain

Both systems used rule-based as inference engine. Writer used the relationship between each membership function to developed "Qualification to IPTA". For this system, result based on result examination. The examination is categorized in three groups, SPM, STPM and Matriculation. This system also can make decision making like an expert.

2.2.2 Existing System

Sales technique is the body of methods used in the profession of sales, also often called personal selling. Manual technique nowadays, the employee used the method that called "hard close". Each customer will be handled by salesmen or salesgirl. Salesman or salesgirl gives training and learn many skills. Besides that, in studies world, a program call "Jom Masuk U" is a comprehensive admission qualification ina university program that has been mastered through 20 years of successful system. It is designed with the most practical and proven methods and skills. Qualification admission into University (Get-u) is an application that replaces this technique and student that interest to continue their study, only complete the form and already have examination result. Then the system will give suggestion IPTA including courses based on user needed.

2.2.3 Technique

Research has been done to find the appropriate AI technology that can be used in the process of developing the system. After evaluating the following technology;

- Fuzzy logic
- Machine learning

Fuzzy logic can't develop a rule base for this application. The rule base expert system is presented that uses an interactive question-and-answer sequence. In this system, the knowledge (question and answer, rules) can be constructed easily by an expert using English. Using fuzzy, users can determine a solution to a specific problem easily from the constructed rules through the interactive question and answer sequence. The questions and solution will be generated by a rule base engine using existing rules.

2.3   Project Methodology

Methodology is the plan of which a developer would use to develop the system. There are many methodologies to choose from and each of them has their own strength and weakness. The methodology chosen for this project is expert 3system development life cycle. This life cycle defined as the process of gathering the knowledge to stock the expert system's knowledge base - knowledge acquisition - has proved to be the most difficult component of the knowledge engineering process.

2.3.1 Software Development Methodology

As mention above, the methodology used on this project is expert system development life cycle. ESDLC is chosen because of its characteristic that can help the developer to respond for the unpredictability of building software through incremental and iterative work stages.
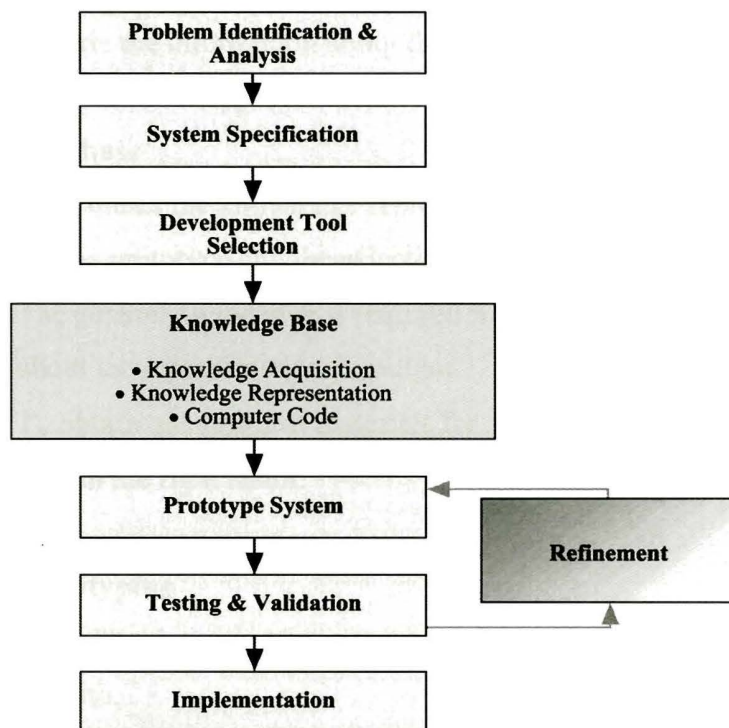

Figure 2.1: Phase of ESDLC

1. **Problem analysis**
   - Identify and analysis the problems where the use of the system.
   - Discover what problems the client expects the system to solve for them and what their real needs are.
   - Slow in result processing.