

FINAL YEAR PROJECT II

**INBOUND STUDENT EXCHANGE PROGRAM  
WEB-BASED SYSTEM**

by

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16263

Dissertation submitted in partial fulfilment of  
the requirements for the  
Bachelor of Technology (Hons)  
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**CERTIFICATION ON APPROVAL**

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Information Technology and Communication  
Universiti Teknologi PETRONAS  
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Approved by,

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TRONOH, PERAK  
MAY 2015**

## **CERTIFICATION OF ORIGINALITY**

**This is to verify that I am responsible for the work submitted in this project, that the original work is my own except as have been specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.**

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**SITI NURSYIFFA BINTI MUSTAFAR**

## **ABSTRACT**

Web Application is said to be the current trend in Student Exchange Program which provide a services to user and it will be able to survive and aim for a valuable product. For this project, the scope of Web Application is going to be discussed. To be more specific, this study will focus mainly from the user perspective. Web Application is an activity of providing a product or services via online which target on potential foreign users (in this study, the user). The problem of this project is that, there is only a manual system to apply Student Exchange Programme (SEP) where it affects the students and staffs themselves. The objectives are to investigate a suitable aspects which need to be considered when designing the user interface which targeting on the users from diverse culture and also to design and develop SEP online application with an effectiveness of the system. This study will describe how the system is being developed with the support of few literature reviews and findings that had been establish previously. The research methodology approach which is the Rapid Application Design also being discussed. The four phases involved are being explained in order to monitor the development of the system. The result and discussion chapter will cover the analysis of the survey that had been conducted. Plus, the study will describe the system architecture and the prototype design of the system.

## **ACKNOWLEDGEMENT**

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# TABLE OF CONTENTS

<b>LIST OF FIGURES .....</b>	<b>viii</b>
<b>CHAPTER 1: INTRODUCTION .....</b>	<b>1</b>
1.1 Background of Study .....	1
1.2 Problem Statement.....	3
1.3 Objectives .....	4
1.4 Scope of Study.....	4
1.5 Relevancy of the Project.....	5
1.6 Feasibility of Project within Scope and Time Frame .....	5
<b>CHAPTER 2: LITERATURE REVIEW.....</b>	<b>6</b>
2.1 Web-based System .....	6
2.2 Cross-culture Research .....	8
2.3 User-Interface Design and Culture Studies.....	9
2.4 Comparison on Application Form.....	16
<b>CHAPTER 3: METHODOLOGY .....</b>	<b>24</b>
3.1 Research Methodology .....	24
3.2 Project Activities .....	26
3.3 Process Flow.....	26
3.4 Gantt Chart .....	31
3.5 Tools .....	32
3.6 System Architecture .....	33
<b>CHAPTER 4: RESULT AND DISCUSSION.....</b>	<b>35</b>
4.1 Requirements and User Interface Feature .....	35
4.3 Prototype and System Design.....	36
4.2 Survey Analysis .....	44

<b>CHAPTER 5: SUMMARY AND RECOMMENDATION .....</b>	<b>49</b>
5.1 Summary of the Project .....	49
4.2 Recommendation .....	50
 <b>REFERENCES.....</b>	 <b>51</b>

## **LIST OF FIGURES**

Figure 1: Web-Based System Architecture

Figure 2: Distribution of PDI

Figure 3: Low Power Distance

Figure 4: High Power Distance

Figure 5: Distribution of IDV

Figure 6: Individualism

Figure 7: Collectivism

Figure 8: Distribution of MAS

Figure 9: Masculinity

Figure 10: Femininism

Figure 11: Distribution of UAI

Figure 12: High UAI

Figure 13: Low UAI

Figure 14: Distribution of LTO

Figure 15: Short-term Orientation

Figure 16: Long-term Orientation

Figure 17: Universiti Teknologi Malaysia Application Form

Figure 18: Nanyang Technological University Application Form

Figure 19: University of South Wales University Application Form

Figure 20: Universiti Teknologi PETRONAS Application Form

Figure 21: RAD Phases

Figure 22: Process Flow of the System for both Student and Admin



Figure 23: The process for the Inbound Students Exchange Program

Figure 24: Process flow after accepting SEP offer

Figure 25: Process flow on the admission of SEP

Figure 26: System Architecture

Figure 27: Home Page

Figure 28: Student Mobility Program Page

Figure 29: Student Requirement Page

Figure 30: Application Form Page

Figure 31: Checklist Page

Figure 32: Applicant Status Page

Figure 33: Contact Page

Figure 34: Log in Page

Figure 35: Database of the System

Figure 36: Edit Status Page

## LIST OF TABLES

Table 1: Five Elements of Designing a Cross-Cultural Interface

Table 2: Core features

Table 3: Pros and Cons for RAD Model

Table 4: Project Activities

Table 5: Function Requirements and Non-functional Requirements

Table 6: Gantt chart for Final Year Project 1

Table 7: Gantt chart for Final Year Project 2

# **CHAPTER 1**

## **INTRODUCTION**

The first chapter will describe on the topics below:

- Background of study
- Problem Statement
- Objectives of Study
- Relevancy of the Project
- Feasibility of Project within Scope and Time Frame

### **1.1 Background of Study**

The international student exchange programs (SEP) have risen sharply over the recent years. The motivation for such phenomenon is that SEP is likely to bring numerous positive outcomes at the student - level and at the level of society as a whole. Among the expected benefits for student participants are: academic achievement, greater cultural appreciation, personal development and well-developed international perspective (Carley et al, 2011). Specifically, students can learn other countries' cultures; environments and much more by socializing with the other students (Messer & Wolter, 2007).

Furthermore, SEP is widely adopted in most institutions since it is a complementary program that contributes to a well rounded academic education. Additionally, the program can also act as an international platform for enhancing the collaborations and networking linkages among the participating universities.

The Student Exchange Program of any institutions can be categorized into two categories which are inbound exchange program and outbound exchange program. The former is for other students to apply for an exchange program in an interested university. While the latter is for the current students who wants to apply for an exchange program with another university.

Realizing the importance of having SEP, Universiti Teknologi PETRONAS (UTP) has also embarked on this program since 2007. Current statistics of the students applying this program are 6 postgraduate students and 68 undergraduate

students. The current procedure of applying for Student Exchange Program in UTP is still in manual mode of which the interested students need to firstly obtain the form by email or by snail mail from the Centre for Student Internship, Mobility and Adjunct Lectureship (CSIMAL). The same process applies to prospective inbound student, whom all of them from foreign country. They need to contact CSIMAL via email or landline to get the application form with some required documents via postal services. It might take a few days for CSIMAL to receive the application form and to process the applications. Once the applications were approved, CSIMAL will send an offer letter to their home universities in order for the home university to keep track of their students while having the exchange program.

Based on the feedback by the current inbound students, this manual process of applying the UTP SEP was deemed tedious and troublesome. Additionally, with manual process, CSIMAL staff were also burdened with manual records keeping manual data entry and a few other significant issues. The process were relying on the efficiency of humans entirely and normally were prone to human errors and mistakes.

Based on the brief problems mentioned, it is timely for the SEP application process to be made more effective. Therefore, this project proposes a web-based application for SEP. The main aim of this project is to promote efficiency in terms of time while lessening the error made with handwritten submission. Furthermore, it is expected that with the ease of use and efficient process, it will motivate more students to apply for the program.

The main target users of the SEP web-based applications are students from all over the world. This pose another important requirement to be considered to be embedded in the system apart from basic functionalities of an application system. The requirements were to ensure that the diversely cultured prospective students to have the same understanding and perception on the meaning of the user interface and flow of the web-based system. System design and development cannot be driven only by technology. In order to gain wide acceptance for this system, user attitudes towards various design features must be taken into account. User attitudes towards a web-based system are a rather complex issue because the potential diverse locations of users can mean significant cultural diversity (Koeszegi et. al,2004). Therefore,

research has been made on cross-cultural web-based interface design in order to take into account potential users' preferences. This is crucial since a system particularly attractive to users from one culture cause users from another culture to reject the same system because of different communication patterns, values, and behavioral preference (Koeszegi et. al,2004).

The efficiency and user-friendliness of this web application might be defined differently by different user. In this project, efficiency would mean it can be succeed by producing or performing something that has the same consumption of resources such as time and etc. As for the user-friendliness, the definition provided by Matthew D. Fuller (2015), user friendly means it is easy for the user to use without even need to learn to use and think.

The rest of this chapter will be organized as follows: the next section will put forward the problem statement of this project. This will be followed with the objectives section that explain the background of the project, the problem to be solved, thesis statement and operational definition.

## **1.2 Problem statement**

There main problem in applying to SEP at Universiti Teknologi PETRONAS (UTP) is because of the manual application and manual handling of the process which affect to the students and staffs themselves. For students, they will spend more time on filling the form manually than via online. Since students are writing manual, there will be some errors in data due to a poor handwriting which causes the staffs of the university hard to read or might slightly interpret the information wrongly. Nevertheless, the students might not fill in the correct information in the form as they do not understand the information needed since the culture and background is different than their country. Due to a tedious process where students will have the attachment of the application from the university, the form might be missing or torn as they need to print out so that they can fill in the form and submit it manually.

According to the staff point of view, UTP has a tedious process for the submission of the application form because they only have manual system. However, due to the manual system, the record of students that apply for an exchange program is not centralized and the record might be missing due to no system provide to keep

track while the record might be untraceable regarding on the students. On top of that, it may cause a prone to human error since the data is manually kept in the database. It also will demotivate the students to apply as they did not provide a web application.

A system will be developed to cater these problems, however main focus will be on catering for culturally diverse target applicants.

### **1.3 Objectives**

The aim of this project is to develop a web application where students all around the world can apply for a student exchange program that is provided by Universiti Teknologi PETRONAS (UTP). In order to fulfil the aim, the following objectives will need to be met:

1. To investigate the most appropriate aspects that need to be considered when designing a user interface for Student Exchange Program (SEP) online application system which targeting users from diverse culture
2. To design and develop SEP online application system based on the results obtained from objective 1.
3. To evaluate the effectiveness of the SEP online application system.

### **1.4 Project scope**

The scope of the project is to explore and analyse in depth about the concept and theory of web application that relate to cross culture-centered design from the user's perspective. It is also to analyse the limitations on the users need or expectation based on the problem statement. However, the important and the main actors in this web application are the designer, publisher and user.

Besides that, it also enables to search for the right system in order to develop this project where it needs to use the right programming language and database system. Besides, it also enables designers or publishers to give justification about the project where it needs to be completed within four to eight months and some feedbacks from the user itself. The author needs to investigate for a suitable tool and method in order to develop a web-based system. For this web application to succeed, author need to list down all the features that show a relevancy that provides a user-

friendly web application and efficient way for the user to use. This can be made by exploring how the user uses the application.

### **1.5 Relevancy of the Project**

This project shows relevancy since it will give advantages to CSIMAL and UTP itself in promoting UTP to global audience. Furthermore, having online application is important as it will be able to make foreign user acknowledge and understand more about UTP and the exchange program as satisfy the user needs and expectation as well as know what extend the web application will satisfy the users. Therefore, it is important to identify foreign culture and practice in order to satisfy and motivate them to apply for the programs offered by UTP. This is because the objective of the web application is to investigate and evaluate the cross culture and a multi-method to design the interface and apply it based on diverse culture.

### **1.6 Feasibility of Study within Scope and Time Frame**

Research done on Student Exchange Program Web Application mainly is based on the user perspective is the scope of the study while the purpose of the study is implemented efficiently in terms of times to the students who wanted to apply for an exchange program.

The time frame for this project to develop will include the two semesters of study where during this first semester which is FYP 1 starts on January 2015 until April 2015 where most of the research is focused on conducting research, planning and analysis. For the second semester, which is FYP 2, from April 2015 to August 2015 is to focus more on the designing and develop the prototype. It shows that the scope of the study is feasible based on the time frame which has been mentioned in the previous section.

## **CHAPTER 2**

### **LITERATURE REVIEW**

This chapter will focus on defining and identifying the general topic, issues and area of concern. It will describe the concept, trends and findings on a student exchange program based on the cross culture and some arguments that address the problem statement. The purpose of this section is to be able to evaluate critically some literature review through a summary and comparison from several studies and theoretical articles.

#### **2.1 Web-based System**

Web-based system is a type of system that uses internet and web technologies to deliver all the information or services to user or other services system as explained by Ginige and Murugesan (2001). This web-based system has grown widely to society that includes four general types such as intranet that support the internal work, web-presence which is a tool for marketing, design, e-commerce system where it support the interaction of a consumer and extranet that blend the internal and external system.

Turban et al. (2005) concluded that “computer-based information systems that combine models and data in an attempt to solve a non-structured problems with extensive user involvement through a friendly user interface”. In this project, the author delivers the services to the user by using this web-based system with a user friendly interface. Besides, the web system is an interactive, flexible and adaptive computer-based that support for a solution in a non-structured management. On the other hand, this system has moved to a standard web platform where it can store, present, gather, share, and process and use information.

The advantages of using web-based system are to improve on the security and technological advances compared to traditional based application. As mentioned by Duan, Edwards, and Xu (2005), one of the benefits of web-based system is cost efficient because it eliminates the inefficiencies by giving more proactive activities which can profit more towards the business. This ensures that CSIMAL can focus more on how to attract more students once they have the online application

rather than using the manual system which can lead to disadvantages. Then, web-based system is a streamline business process as it will lead to improvement because using traditional paper based process is a modern method while using web system can lead to electronically via a web-based system. Thus, it will not only affect the staffs and students, but also can decrease time and cost. On top of that, the other benefits are that it is highly accessible compared to traditional method because using web-based system can be accessed at any location as long as users connect to the internet connection and a web browser. Last but not least is a web-based system is easily to manage an update because the system only needs to install once and make it update easily and quickly to roll out.

Other than benefits, the architecture is involved in web-based system and some of the aspects that needed to consider in designing the system are the interface, functionality and database as mentioned by Yao (2005). The architecture of web-based system can be viewed as client/server based on the Figure 1.

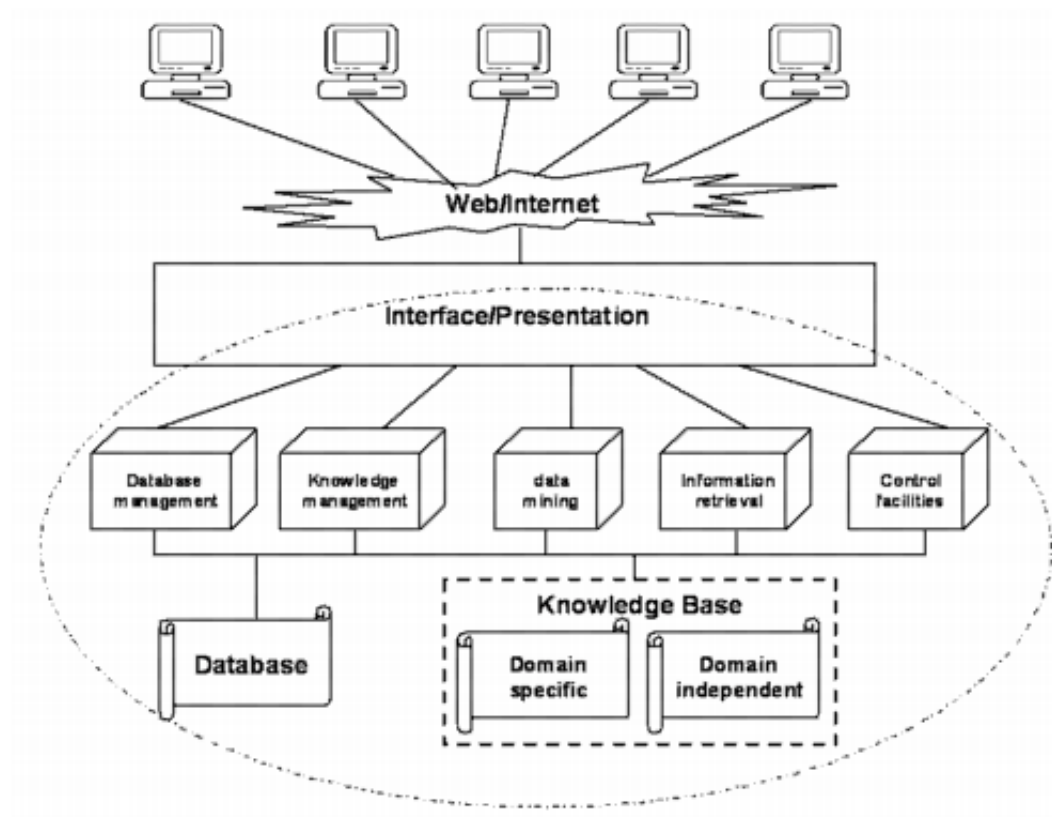


Figure 1: Web-Based System Architecture



The upper layers are the users and clients that make the decision making where they can access the system via the Internet and Web while the interface will appear on the client's side by browser. As for the lower layer, is to support the system with the Web and Internet as the interface of the web-based system.

In the data layers, there are two types of components which are database and knowledge base where in the knowledge base has domain specific and domain independent. Besides, management layer consists of knowledge management, data management, information retrieval, data mining and other control facilities that act as the middleware for the client/server architecture and intermediaries between interface and data later (Uren & Victoria, 2006).

Web-based system can be concluded into three layers which are the personal activities as the first layer, organizational support is the second layer and the third layer is the network layer (Rodriguez & Al-Ashaab, 2005).

## **2.2 Cross-culture Research**

The importance in doing a research on cross-culture is to develop a web system that provides a suitable design based on the culture with a good combination. However, the design needs to avoid from culture clashes since each group has differences as stated by Stephanidis (2000). On the other hand, this will ensure the development of the web application has a flexible design by trying to standardize the interface based on the cultural information. A research on cross-cultural need to identify and evaluate in order to improve the understanding towards the culture based on the cultural characteristics (Marcus, 2005). However, while designing the web-based system that based on the cross cultural issues, the design might give an impact towards the users. This article has been said by J. M. Allostath, Almoumen, and Allostath (2009), as they identify and evaluate the difference on culture based on the cross-cultural web design.

Various methods has been evaluated on the cultural differences based on the cross-cultural web design that focus on the features as stated by Bourges-Waldegg and Scrivener (1998). There are many phases that have been evaluated to differentiate the similarities and differences among all groups of cultures. It has been identified according to Smith, Dunkley, French, Minocha, and Chang (2004) in the

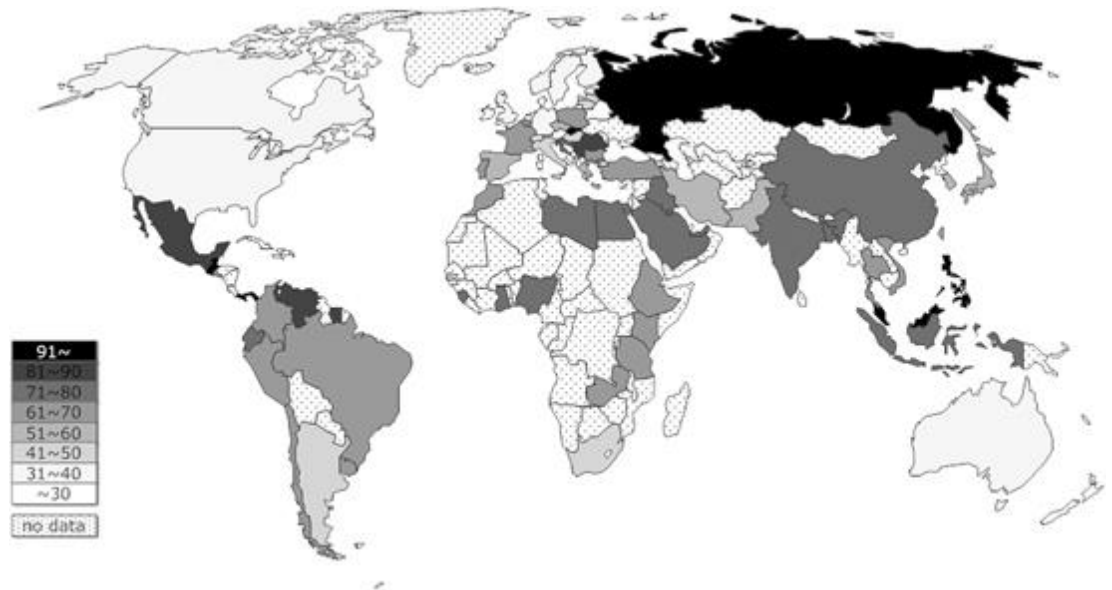
studies where one of them is evaluate the cross-culture where questionnaire design and gathering data is needed in order to collect the information. As for the second phase, to investigate the usability of the user on cross-use where the results from the first phase will be used in this phase. This is to design the product that is based on the cross-use research. This is to identify different preferences on the cultures which are higher than the usability features which based on the cross-use experiments (J. Allostath, 2006).

Difference culture has different approaches in design interface and this article has been argued by Choudhury, Borbora, and Sarma (2012) where the concept are mostly based on the cross-cultural, culture-oriented, intercultural and culture-centered since the author are dealing with different cultures. In this issue, the concept is focused more on the cross-culture and the process of the interface design divided into four phases which are the investigation, translation, implementation and evaluation which strategies a good design for the cross-cultural. According to Rau, Plocher, and Choong (2012), the approach is taken is ordered to explain the culture and the design interface as there is a connection between these two concepts.

### **2.3 User-Interface Design and Culture Studies**

In web application or any other technology needs to have some features to ensure a good user interface design based on the culture studies. There are five fundamental culture dimension which helps author to develop the system. According to Hofstede (1986), it is based on the Power Distance, Individualism Vs. Collectivism, Masculinity Vs. Femininity, Uncertainty Avoidance And Long-Term Time Orientation. The author will explain on the features as below:

Power distance is the first features in user-interface and culture design. This is where the user accepts in either high or low power distance in social orders. High power distance is the acceptance of people within a society in hierarchical order and the inequalities that come with it. While for low power distance, the society is trying to equate the distribution of power, especially those who have less power (Marcus & Gould, 2000). Figure 2 shows the distribution of power distance around the world.



According to Kirkman, Chen, Farh, Chen, and Lowe (2009), in web design, people with a low power distance do not like to be controlled and like to be lead based on true expertise. They prefer a good objective and detailed information on the website so that they can decide either they want to use the product or not. The website needs to meet the user eye-level, treat with respect and show interest in their needs. This will gain the user trust and attract them to use the product. For people with a high power distance, they prefer facts and clear statements and not giving them high responsibility because they are used by authorities and solid structures. Besides, they are less driven and less critical to search for information. Figure 3 and Figure 4 show the difference between low and high power distance.



The next features stated is Individualism vs. Collectivism. It is either in a group or individual achievements. As an individual, they prefer a loose social network so that they can take care of their families and themselves while for collectivism; other people care more for other people than for themselves (Kagitcibasi, 1997). Or in other words, they prefer other people to take care of them. Figure 5 shows red marked as individualism and yellow marked as collectivism.



Figure 5: Distribution of IDV around the world

As in web design, people with a high individualism, they can decide on their own based on their own needs and desire as they take the initiative to make their own decision. Besides, they will visit the website in their own interest, goal and decision. Collectivism society decides based on others as they act in the interest of groups than their own interest. Furthermore, this group of people decides based on what is similar to their interest and not focus much on their individual interest. They also prefer a product that has enough reference points such as testimonials or personal feedbacks. Figure 6 and Figure 7 show the difference between individualism and collectivism.



Figure 6: Individualism



Figure 7: Collectivism

Masculinity vs. Femininity is the next feature and based on Ford and Kotzé (2005), motivation and core values are important in this group of people as it shows either they are masculinity or femininity. Masculinity is a competitive and driven by materialism, heroism and achievements while femininity is more to consensus-oriented and prefers values like modesty, cooperation, quality of life and caring for the weak. Figure 8 shows the distribution of MAS.

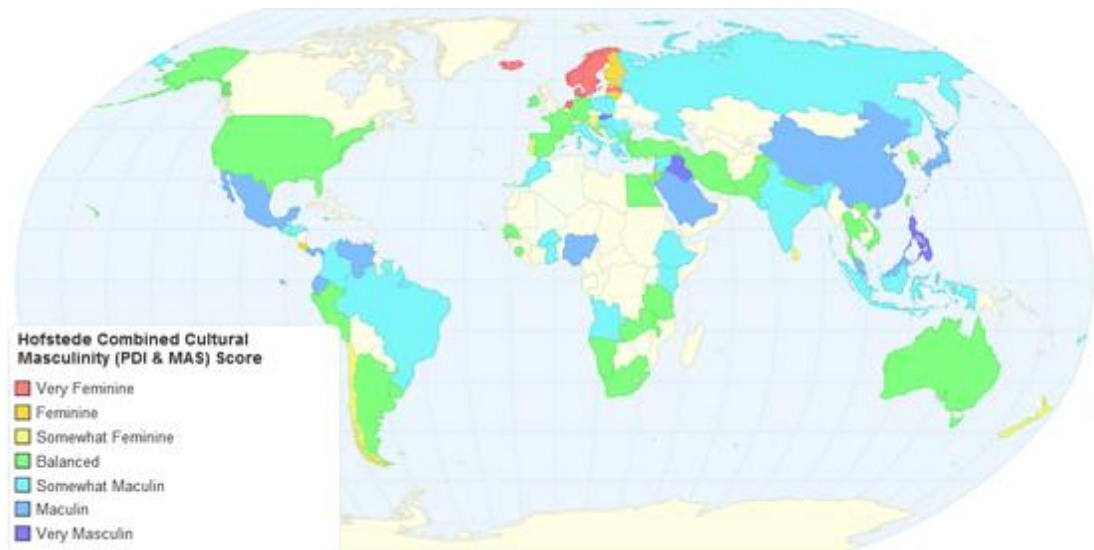


Figure 8: Distribution of MAS

Those who are masculinity, they are a very hardworking to strive for success and show they can be the best at what they do. In the web design, there should offer a high quality website in order to attract them and any incentives can be used. As for femininity, they do not like to stand out in front of people as they like to enjoy their life and avoid conflict. So, the website should show some positive experience than technical details. This group of people likes to be entertained and willing to forgive



minor flaws. Figure 9 and Figure10 show the differences between masculinity and femininism.

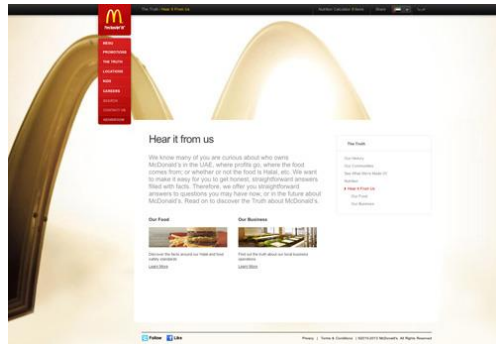


Figure 9: Masculinity



Figure 10: Femininism

Besides that, Uncertainty Avoidance also is one of the features. This is where the people deal with uncomfortable and the uncertainty. Marcus and Gould (2000), stated that people with high uncertainty avoidance avoid unimportant ideas and stick to their decision. While for low uncertainty avoidance more to practice over changes. Figure 11 shows the distribution of Uncertainty Avoidance.

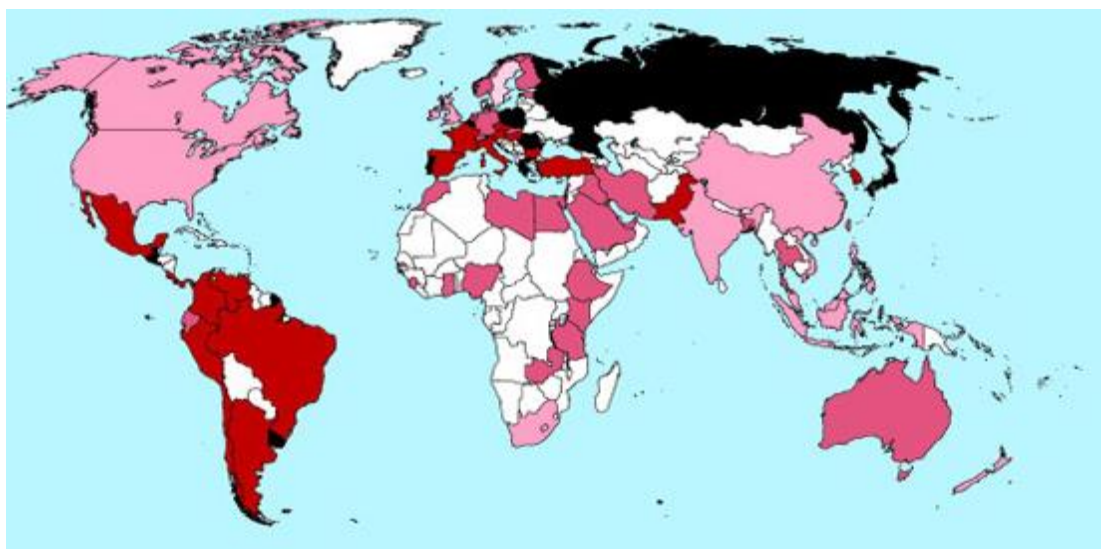


Figure 11: Distribution of UAI

The web designs with high uncertainty avoidance love something that is deductive rather than inductive approaches. They evaluate things based on their decisions and action on a relevant aspect. They also prefer familiar products and able

to balance between option to make a decision. People with a low uncertainty avoidance are an open-minded person where they are able to receive new ideas, willing to try something new and take risks. Besides, they are also a very spontaneous and think practical which can quickly adapt to the surroundings. The difference between high and low uncertainty avoidance is shown in Figure 12 and Figure 13.

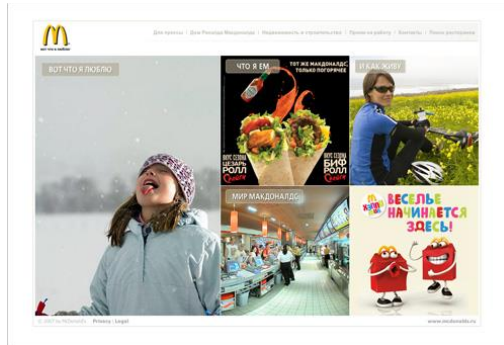


Figure 12: High UAI



Figure 13: Low UAI

Last but not least is Long-term vs. Short-term orientation. This emphasizes on the patience in an orientation where a person with a short-term orientation is normative in their way of thinking and long-term orientation depends on the context, situation and time. The lower the orientation, the higher number of people in long-term oriented. Distribution of LTO is in Figure 14.



Figure 14: Distribution of LTO around the world

Based on the short-term orientation, they prefer past than present because they like to use shortcuts and the option to decide quick action and prefer a familiar design. Long-term orientation decides things for their future and wants the website to convince them with detailed information and advantages of the product. The differences between short-term and long-term orientation is shown in Figure 15 and Figure 16.



Figure 15: Short-term Orientation



Figure 16: Long-term Orientation

There are a lot of websites that focus on different cultures at once and it is important to evaluate and understand the differences between each culture. Hofstede has explained the five dimensions of culture that can consider them as a guideline to develop a cross-cultural web system.

Other than that, Aalen (2015), argues that in a web design needs to have a core model where it is for a better result on designing the web. The core model ensures that the designers will think what the user wants in a web page during the process of the design interface. Based on an article written by Marcus (2011), the features are:

### 1. Metaphors

- Images, words, sounds and some other related components are the fundamental concepts because the metaphors ensure a rapid development, deployment and distribution. Some examples are blogs, chat room and etc.

### 2. Mental models



- This is the structures of components, data, roles, task or people that include in an organization. The examples are tool, media, control panels and others.
3. Interaction
    - This is the input and output that includes the feedback from the user, such as keyboard, printer, or any other selection/action sequences.
  4. Navigation
    - The example of this feature is icon, dialogue boxes, windows and etc. This shows the movement via mental models.
  5. Appearance
    - This is the characteristics, visual or auditory as its role is to choose what color should the designer include our fonts and any other related appearance.

However, in this case study, since there are various cultures in our country, there should be a good web application where it can interact with the user interactively that has been argued by Panigrahi (2014). Because of the difference pattern of cultural interaction, Heimgärtner (2007) explains on the method that can be used to classify the pattern that produce culturally adaptive web system.

## **2.4 Comparison on Application Form**

There are a few universities that have been found regarding on the student exchange program application form such as Universiti Teknologi Malaysia, Nanyang Technological University and University of New South Wales. Then, these three universities will be compared with Technology PETRONAS University (UTP). The comparison has been made as stated below.

STUDENT EXCHANGE APPLICATION FORM

UTM(OIA)-IB1

STEP 1 OF 5

20%

A. APPLICANT/PARTICIPANT PERSONAL DETAILS

Full Name (same as passport)\*

Citizenship\*

Malaysia

Gender\*

☐ Male
 ☐ Female

Mailing Address -\*

Street Address

City

ZIP / Postal Code

Country

Date of Birth\*

Mobile Phone\*

Email (Applicant)\*

Status\*

☐ Married
 ☐ Single

Religion\*

Passport Number (Optional)

STUDENT EXCHANGE APPLICATION FORM

UTM(OIA)-IB1

STEP 2 OF 5

40%

B. EDUCATION BACKGROUND

Home Institution/University\*

Website

http://

Home Faculty\*

Programme Area\*

Electrical, Mechanical, Biomedical, Civil, Management, etc

Expected Year of Graduation\*

2015,2016,2017, etc

Current Semester

First

Current COPA

Level of Study\*

Undergraduate

Nature of Study\*

Taught Course

Previous

Next

STUDENT EXCHANGE APPLICATION FORM

UTM(OIA)-IB1

STEP 3 OF 5

60%

C. STUDY ABROAD PROGRAMMES

Status -\*

Undergraduate

Programme -\*

UTM Student Exchange

UTM Internship / Research

Semester for Exchange

Semester 1, September intake

Proposed Courses to be taken in UTM\*

Subject/Courses	Code	Credit
<div>Subject: Introduction to Biomedical Eng Code: SMBE1012 Credit: 2 Please click the + button to add more subject/courses Please only choose courses corresponding to semester. If you are studying at UTM in Semester 2, please choose only courses available in semester 2 &amp; 3.</div>		

Proposed Start Date\*

Proposed End Date\*

English Speaking Proficiency\*

☐ Very Good
 ☐ Good
 ☐ Poor
 ☐ Very Poor

English Reading Proficiency\*

☐ Very Good
 ☐ Good
 ☐ Poor
 ☐ Very Poor

STUDENT EXCHANGE APPLICATION FORM

UTM(OIA)-IB1

STEP 4 OF 5

80%

D. FINANCE

Sponsorship\*

☐ Self Sponsored
 ☐ Home Institution
 ☐ Other

Please specify details of sponsorship

E. ON-CAMPUS ACCOMMODATION

Please be informed that we can provide on-campus accommodation upon request and SUBJECT TO AVAILABILITY. Please choose room type for booking. Range for rate for single room: RM60/day/person to RM40/day/person Room rate may vary depending on residential college

Type

Single Room

Preferences

☐ Attached bathroom
 ☐ Hot Shower
 ☐ Air Conditioner
 ☐ Ceiling Fan

Interested to stay with Host Family in Malaysia?

☐ Yes
 ☐ No

More information about host family is available at <http://www.utm.my/telua/gaangkat>

F. INTER OFFICE COMMUNICATION

Please provide the contact person from the home university (International affairs officer/student exchange coordinator) who is responsible for this program

Name of Officer in charge(Internal Office):

Office/Department

STUDENT EXCHANGE APPLICATION FORM

UTM(OIA)-IB1

STEP 5 OF 5

100%

G. ATTACHMENT AND DECLARATION

Recommendation Letter\*

Choose File

No file chosen

Recommendation letter from student's Academic Advisor/Home Institution supporting their application

Student Status Letter\*

Choose File

No file chosen

Letter from Home University stating student status which is current semester, active/inactive, expected graduation year

Academic Transcript\*

Choose File

No file chosen

An up to date certified academic transcript(in English Translation)

Passport Photo\*

Choose File

No file chosen

Passport sized photos(blue background only) in jpg format

Sponsorship Document (if available)

Choose File

No file chosen

Study Plan Essay\*

Choose File

No file chosen

A one page essay to describe your plan and expectations from this program.

Once the application has been approved, UTM International will issue an offer letter for the program. You will need to provide copy of passport and copy of travel/medical insurance certificate. For student coming over for more than six(6) months, additionally you need to provide copy of your medical report.

Declaration(Please tick to Agree)

☐ I hereby declare that the information provided in this form is true. I acknowledge that Universiti Teknologi Malaysia reserves the right to vary or reserve any decision regarding admission or enrolment made on the bases of the given information

Previous

Submit

Figure 17: Universiti Teknologi Malaysia Application Form

According to Universiti Teknologi Malaysia (UTM), students from other university whom want to apply for this program, they do not have to sign up for their registration, so, students can just click exchange program button to apply online. The online application form consists of five steps in order for the student to submit the form which is the applicant's personal details, education background, study abroad program, finance and attachment and declaration. Each of the fields in the application form is required for students to fill in so that they can proceed to the next steps. Some of the features needed are included, for example, check box for students to choose their gender, drop down list, calendar for date of birth and many more. The information that the university provided is also clearly and understandable where they explain what to do before students proceed with their submission. The university did a checklist for students in order to make them alert on what should

they submit when they apply for this program and also inform students the submission date.

**NANYANG TECHNOLOGICAL UNIVERSITY**

**ONLINE APPLICATION FOR ADMISSION AS NON-GRADUATING/EXCHANGE STUDENT**  
UNDERGRAD STUDENT PROGRAMME  
HOME UNIVERSITY

Welcome -- Help | Close

Home University  
Personal Information  
Academic Qualification  
Mode of Study  
Source of Finance  
Employment Details  
Additional Info  
Emergency Contact  
Attachment

**Home University**  
Student Category\* Exchange  
Home University Country\* Not Applicable  
Home University\* Scholar Ship  
Please ensure you have checked and selected your home university from the given list. You should contact [ng\\_prog@ntu.edu.sg](mailto:ng_prog@ntu.edu.sg) with your university name, website and country (in English) if the name of your home university is not listed.

Qualification to obtain at Home University\* Bachelor  
Enrolment period in Home University\* From (MM-YYYY)\* 07-2015 To (MM-YYYY)\* 07-2015  
Home Faculty/School\* UTP  
Major of Studies at Home University\* ICT (for double major)  
Equivalent NTU Programme INFORMATION ENGINEERING & MEDIA  
Please select a NTU programme of study which is the closest match to your major of study at your home university. If you cannot find anything relevant, please leave it empty.

Proceed

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**NANYANG TECHNOLOGICAL UNIVERSITY**

**ONLINE APPLICATION FOR ADMISSION AS NON-GRADUATING/EXCHANGE STUDENT**  
UNDERGRAD STUDENT PROGRAMME  
ACADEMIC QUALIFICATION

Welcome -- Help | Close

Home University  
Personal Information  
Academic Qualification  
Mode of Study  
Source of Finance  
Employment Details  
Additional Info  
Emergency Contact  
Attachment

**Personal Particulars**  
Full Name\* (as in passport)  
Date of Birth (DD-MM-YYYY)  
Gender  
Country of Birth  
Citizenship  
Date of arrival in Singapore (MM-YYYY)  
Are you a Permanent Resident of Singapore?  
Marital Status  
Passport No./ Identity Card No.\*

**Address**  
Permanent Home Address\*  
Street  
City  
State/Province  
Postal Code  
Country  
Mailing Address (for delivery of Admission Letter & Acceptance Envelope)  
Street  
City  
State/Province  
Postal Code  
Country

**Contact Information**  
Home Telephone Number  
Mobile Telephone Number  
Fax Number  
Email Address

Proceed

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**NANYANG TECHNOLOGICAL UNIVERSITY**

**ONLINE APPLICATION FOR ADMISSION AS NON-GRADUATING/EXCHANGE STUDENT**  
UNDERGRAD STUDENT PROGRAMME  
ACADEMIC QUALIFICATION

Welcome -- Help | Close

Home University  
Personal Information  
Academic Qualification  
Mode of Study  
Source of Finance  
Employment Details  
Additional Info  
Emergency Contact  
Attachment

**Completed education**  
State the name of the tertiary institutes which you have attended

Name of Institution	From (YYYY)	To (YYYY)	Qualification Obtained
			-Please select-
			-Please select-
			-Please select-

Proceed

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**NANYANG TECHNOLOGICAL UNIVERSITY**

**ONLINE APPLICATION FOR ADMISSION AS NON-GRADUATING/EXCHANGE STUDENT**  
UNDERGRAD STUDENT PROGRAMME  
MODE, AREA AND DURATION OF STUDY

Welcome -- Help | Close

Home University  
Personal Information  
Academic Qualification  
Mode of Study  
Source of Finance  
Employment Details  
Additional Info  
Emergency Contact  
Attachment

**Mode, area and duration of study**  
Please select\*  
Proceed

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**NANYANG TECHNOLOGICAL UNIVERSITY**

**ONLINE APPLICATION FOR ADMISSION AS NON-GRADUATING/EXCHANGE STUDENT**  
UNDERGRAD STUDENT PROGRAMME  
SOURCE OF FINANCE

Welcome -- Help | Close

Home University  
Personal Information  
Academic Qualification  
Mode of Study  
Source of Finance  
Employment Details  
Additional Info  
Emergency Contact  
Attachment

**Source of Finance**  
Source of Finance\* Parents  
If you are sponsored or awarded a scholarship/fellowship, please indicate:  
Full Name of Awarding Organisation  
Duration (MM-YYYY)  
Amount of Award

Proceed

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**NANYANG TECHNOLOGICAL UNIVERSITY**

**ONLINE APPLICATION FOR ADMISSION AS NON-GRADUATING/EXCHANGE STUDENT**  
UNDERGRAD STUDENT PROGRAMME  
DETAILS OF EMPLOYMENT

Welcome -- Help | Close

Home University  
Personal Information  
Academic Qualification  
Mode of Study  
Source of Finance  
Employment Details  
Additional Info  
Emergency Contact  
Attachment

**Details of Employment**  
List below your work experience, if any

Year	Full or part-time	Role/occupation and description of experience	Employer and place of employment
	Fulltime		
	Part-time		

Proceed

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**NANYANG TECHNOLOGICAL UNIVERSITY**

**ONLINE APPLICATION FOR ADMISSION AS NON-GRADUATING/EXCHANGE STUDENT**  
UNDERGRAD STUDENT PROGRAMME  
ADDITIONAL INFORMATION

Welcome -- Help | Close

Home University  
Personal Information  
Academic Qualification  
Mode of Study  
Source of Finance  
Employment Details  
Additional Info  
Emergency Contact  
Attachment

**Exchange/Non-graduating student**  
Have you ever been an overseas exchange/non-graduating student of the Nanyang Technological University/National University of Singapore/Singapore Management University? \*  
If yes, state year(s) of attendance and course(s) taken  
Have you entered Singapore using another passport previously? \*  
If yes, state passport number

**Health Declaration**  
Do you have any physical illness, or currently undergoing any medical treatment/been treated/been diagnosed of any illness which may affect your studies? \*  
If yes, please state nature of illness  
Have you ever been hospitalized? \*  
If yes, please give details  
Period of hospitalization: From (DD-MM-YYYY) To (DD-MM-YYYY)  
Reason for hospitalization:  
Are you currently taking any medication (including OTC and inhalers)? \*  
If yes, please list the medication(s)  
Do you have any chronic (long-lasting or persistent) medical condition that requires treatment or medication? \*  
If yes, please have your physician prepare a summary of your treatment that includes the following:  
• Condition being treated  
• Type of Medicine  
• Physician's address and phone number

Proceed

© 2008 Nanyang Technological University

Figure 18: Nanyang Technological University Application Form

Based on Nanyang Technological University, students need to sign up and register to the university in order for the students to apply this program. Students need to sign up and get an application number to proceed and once students received the number, they can apply for the program. In this university, students need to complete a few sections such as personal information, academic qualification, mode of study, source of finance, employment details, additional information, emergency context and also few attachments needed. On the other hand, this university also included some features to attract and motivate students to apply this program, thus the information and navigation also is clear and understandable. It provides, drop down list for students to choose, calendar for date of birth and the enrollment period at the home university and many more to guide the students in applying this program. However, in the attachment section, students need to attach their passport photo, passport and transcript, which make it easier for students because they have attached in the application form and submit them together.

Figure 19: University of South Wales University Application Form

For University of New South Wales, students also need to sign up in order for them to apply this program. However, once the students registered, they will be going to UNSW Endeavour Portal which consists of the overview, profile, application form, courses and password. In the application form, there will be six sections that need to be filled by students, which are period of proceed UNSW study, home university, qualifications, passport, language and declarations. The university also have included the features such as radio button to show the option that need to choose by students, check button for the declarations and attachments for passport photos, transcript and others. On top of that, before students submit this application, the university notifies the students to complete their course selection and the information in the application form is understandable and clear for students.

Table 1 shows the 5 elements included in the design based on the cross-cultural. As for the 5 core features is shown in Table 2.

Table 1: Five Elements of Designing a Cross-Cultural Interface

Elements	Universiti Teknologi Malaysia	Nanyang Technological University	University of New South Wales
Power distance	Low	Low	Low
Individualism vs. Collectivism	Individualism	Individualism	Individualism
Masculinity vs. Femininity	Masculinity	Masculinity	Masculinity
Uncertainty avoidance	Low	Low	Low
Long-term vs Short-term orientation	Long-term	Long-term	Long-term

Table 2: Core features

Features	Universiti Teknologi Malaysia	Nanyang Technological University	University of New South Wales
<b>Metaphors</b>	University logo Less word	University logo Wordy	No images Too wordy
<b>Mental Models</b>	Functions are understandable	Some functions are understandable and some are not	Some functions are understandable and some are not
<b>Interaction</b>	User-friendly Not require user log in	User-friendly Require user log in	Not user-friendly Require log in
<b>Navigation</b>	5 tabs Drop down list Calendar Provide required field Submit button File button Calendar button	9 tabs Drop down list Calendar Provide require field Proceed button Calendar button Declaration button File button	6 tabs Add button Select button Upload button Radio button Drop down list
<b>Appearance</b>	White and plain No bold word	White background and red Important word bold/red	White and grey background Important word in red Word in blue colour

On the other hand, the figure below shows the current application form that CSIMAL provide to the students in order for the students to apply for an exchange program. This is the manual way to apply and it is not efficient and not a user-friendly method since web application can make the user easy to apply for the exchange program. That is the main concern of developing a web system to ensure a better method can be used which is more efficient and user-friendly.

xxxi

Figure 20: Universiti Teknologi PETRONAS Application Form

In Universiti Teknologi PETRONAS (UTP), the form is split into few sections. For example, applicants personal details, main contact person (in case of emergency), applicant's further details, current studies at home university and a few more. So, it is quite a burden for the users to fill in as there are many information and the sequence is not really suitable in the application. Based on the three university website, each of the university has its own sequence of details and design which make it easy to fill in comparing to UTP. Other than that, each university uses an online application to apply the program, but UTP, the students themselves need to ask for application form rather than printed. So, it is quite ineffective and that is the main reason UTP needs to develop a system for online application for student exchange.

To compare with the three universities, UTP is using a manual system while the others are using the online application and that shows UTP should develop an online application so that it would motivate and attract students to apply the program. On top of that, the information needed for the students is the same between the UTP and the other three universities. The only differences between the universities are the sequence and how each university presents the application form to students.



## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 Research Methodology**

Rapid Application Development (RAD) is where the product will be developed in a rapid prototyping that use minimal planning that based on the requirement of the product is the most suitable methodology for this project. A RAD model provides the design, build, and analysis and test process into a quick development phase. The models are business modelling, data modelling, process modelling, application generation and testing and turnover. However, there some reasons where RAD can be used in a doing the project when the product needs to be used in order to deliver the system. It is also can be used if the modelling has a high availability of designers and when the system has changed within the times the designers are working on the prototypes. There are four phases in RAD and it shows in Figure 21.

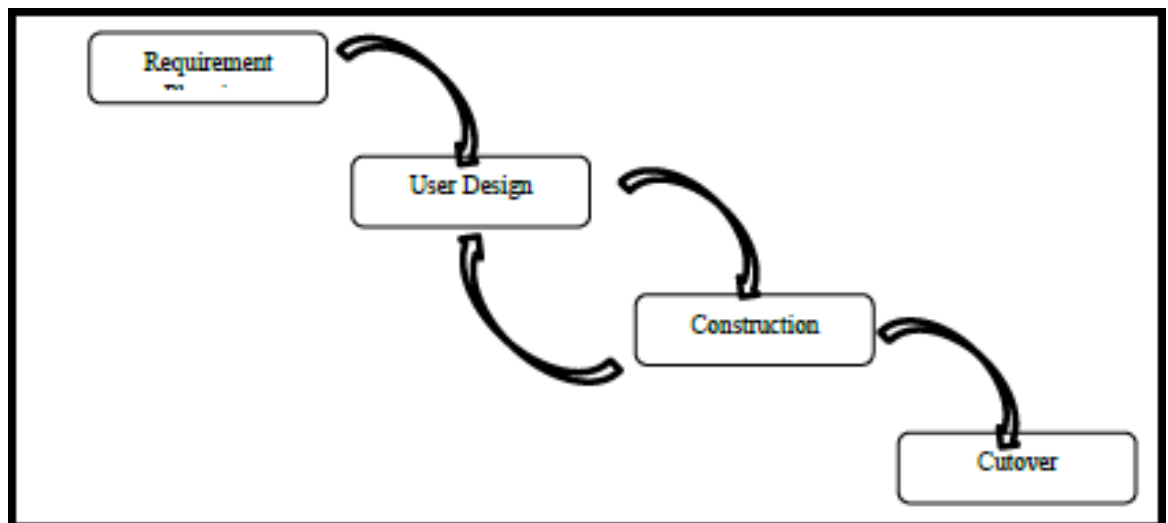


Figure 21: RAD Phases

- Requirement Planning Phase
  - It is a combination of the system planning and analysis phases in the SDLC. This phase, evaluate on the needs, project scope, constraints and the requirement. It includes the hardware and software that required developing the project

- User Design Phase
  - This phase is for users to interact with the system where the developing model structure and prototype represent the whole system including the inputs, processes and outputs. This is where the tools are used in order to develop and produce the product to meet the requirements.
  
- Construction Phase
  - This phase is evaluated on the development of the interface and the program which also similar to SDCL. However, any changes or improvement the user needs to participate in order to make the development done. For example, the programming and application development, coding and system testing.
  
- Cutover Phase
  - The final stage is the implementation phase in SDLC where it consists of the data conversion, testing, change to the new system and user training. This is a much compressed version with the system has been built, delivered and places for feedback and operation in faster compared to any other methodology.

There are pros and cons in RAD even though it decreases the time to develop the system because designers reuse the components. Table 3 is the pros and cons table for RAD model:

Table 3: Pros and Cons for RAD Model

Pros	Cons
- Measure the progress	- The developer needs to have high skills
- Reducing time development	- More complex management
- Development time is shorter	- Only able for less project requirement
- Can accommodate the modified requirements	- Only for component based and scalable system

### 3.2 Project activities

The phases and tasks involved for each phase are shown in Table 4.

Table 4: Project Activities

PHASE	PROJECT ACTIVITIES
1. Requirement Planning	<ul style="list-style-type: none"><li>• Review literatures and do research on the subject matter.</li><li>• Gather data for the system requirements.</li><li>• Prepare questions for survey.</li><li>• Prepare Gantt chart.</li></ul>
2. User Design	<ul style="list-style-type: none"><li>• Design user interface and website.</li><li>• Prepare and design the usability testing.</li><li>• Develop a matching system flowchart and database design.</li></ul>
3. Construction	<ul style="list-style-type: none"><li>• Develop a prototype.</li><li>• Apply any enhancement and changes needed.</li><li>• Evaluate the system functionality.</li><li>• Check whether the system meets the requirements.</li></ul>
4. Cutover	<ul style="list-style-type: none"><li>• Prototype to be used.</li><li>• Recommendation.</li></ul>

### 3.3 Process Flow

Below is the process flow of the web-based system. Figure 22 shows the process flow for students on how they apply and submit the application via online while as for staff on how they approve the students because they are the admin of the process.

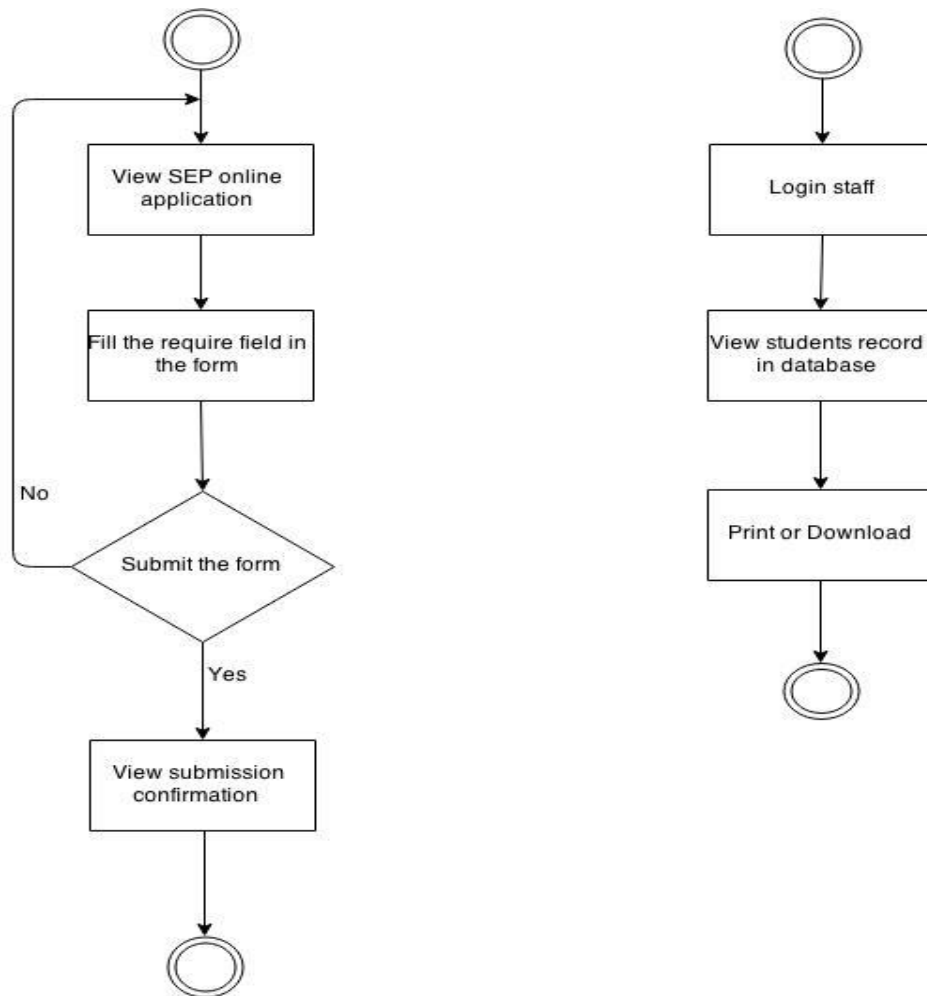


Figure 22: Process Flow of the System for both Student and Admin

Figure 23 is the process flow for student exchange program for the inbound student once they submitted their application form to CSIMAL.

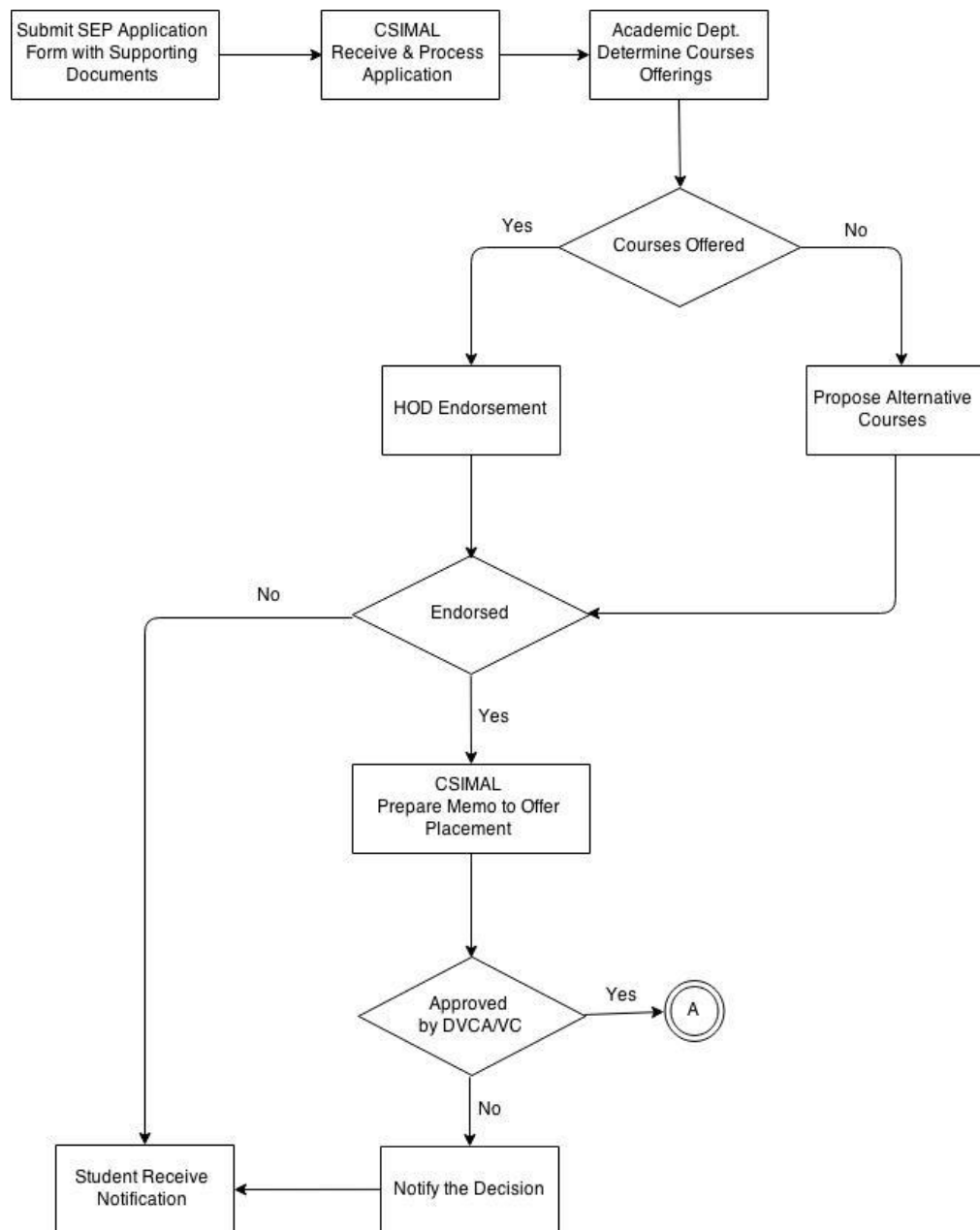


Figure 23: The process for the Inbound Students Exchange Program

Figure 24 below is the process for inbound student once they are accepted to undergo the program.

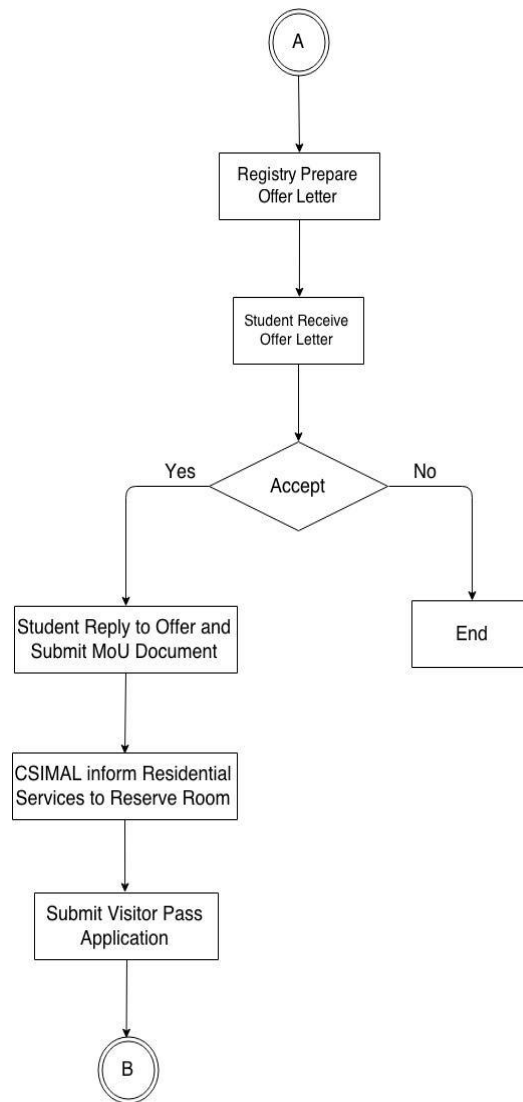


Figure 24: Process flow after accepting SEP offer

Figure 25 below is the admission process for inbound student exchange in order to continue their academic process.

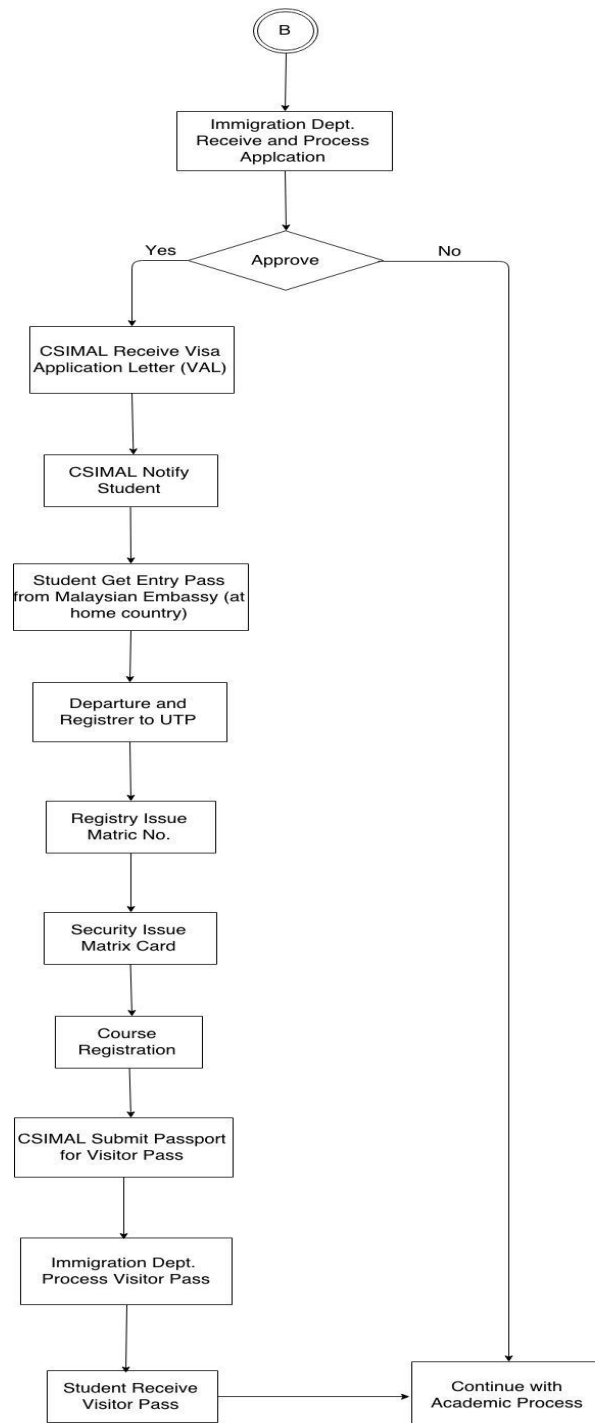


Figure 25: Process flow on the admission of SEP

In Table 5 are the functional and non-functional requirements that regarding to the figure above.

Table 5: Function Requirements and Non-functional Requirements

Functional Requirements	Non-functional Requirements
The web application shall accept user submission	The web application shall be easy to use by all users
The web application shall be able to connect with the database of the system	The web application shall have a good performance to the user
The web application shall available for 24 hours per week	The web application shall be available whenever the user wants to use it
The list of users applied shall be seen by the administrator through the admin web based system	The web application shall be available to be viewed by the administrator at any time and have a good performance

### 3.4 Gantt Chart and Key Milestone

Table 6: Gantt chart for Final Year Project 1

No	Task	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Title Selection/Proposal														
2	Submit Proposal														
3	Literature Review and research on the subject matter														
4	Requirement Planning														
5	Prepare survey questions														
6	User interface design and system architecture														
7	Develop Gantt Chart														



As for Final Year Project 2, this project will be focusing on the prototype development and the implementation part. Also will consider and analyse for any further lacking of functions and improvements so that the system will meet the objective of this study. The works that are being done during the FYP 2 are as shown in the Table 7.

Table 7: Gantt chart for Final Year Project 2

No	Task	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Develop the web-based system	■	■	■	■	■	■	■							
2	Develop the database			■	■	■	■	■							
3	Testing the system and functionalities- meet project requirement							■	■	■	■	■			
4	Publish the website and run test on user										■	■	■		
5	Input new functionalities of the system (if needed)								■	■	■	■	■		
6	Prototype ready to be used												■	■	
7	Demonstrate during the presentation													■	■

### 3.5 Tools

The tools that needed for implementation of this project are:

1. PHP and phpMyAdmin



- This tool is free software which released under the PHP License and it is a server-side scripting languages which use to develop a dynamic website. For

this project, PHP is used to develop a web-based system that able to capture data and feedback from user.

- phpMyAdmin is a software that is written in PHP where the purposed of the tools is the administration of MySQL over the webpage. It's able to run the task of creating, modifying or deleting the database as well as executing SQL statements. This database is used to store the data and feedback from user.

## 2. Wamp Server



- This tool is for the web server to develop a platform in order to create a web application with Apache2, PHP, phpMyAdmin and MySQL database. Whenever the user request to view the web page, the server will receive the file request and look for particular files. Once the file is found, it will send to the user.

### 3.6 System Architecture

This section of the project will describe the system architecture where it explains the structure and representation of the system. Besides, there will also be an explanation of the requirements of the system.

For students, the browser will display the web system once the user opens the website and choose one of the sections such as Home page, Application Form, Checklist page or any other sections that they are attracted to. Then the section will appear where the user can view on the information or apply for the program. Then the data that the user input in the application form will automatically store in the database.

While for administrator, the log in page will be displayed in the browser and once they have logged in, the data will send to the database, thus, users can view

another section in the browser which is the list of applicants that apply for the program. Moreover, the user can click on edit status to update on the applicant status, whether their application is approved or disapprove. The system architecture of this project is as shown in Figure 26.

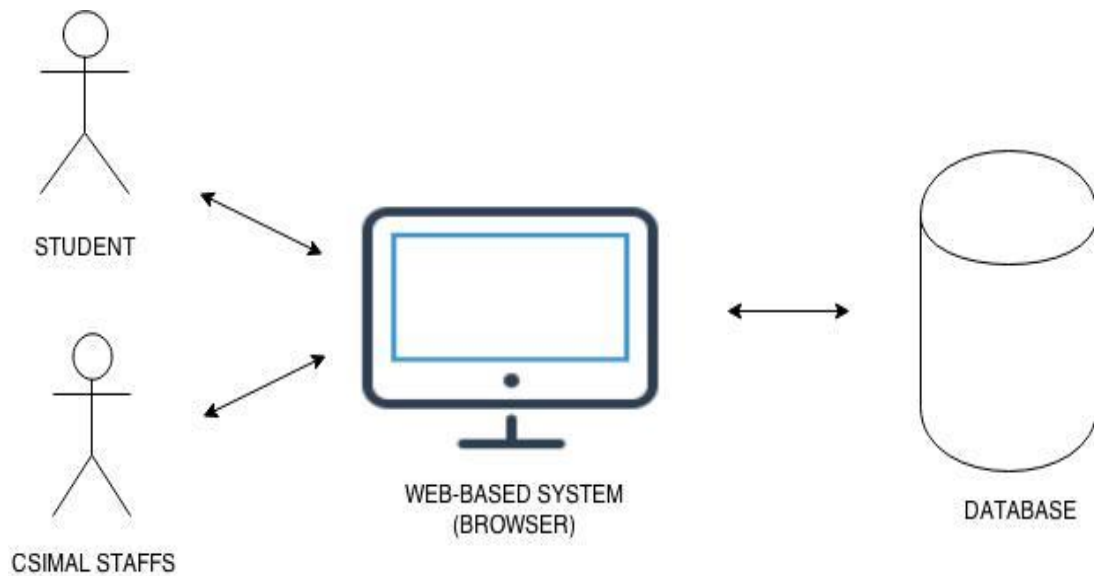


Figure 26: System Architecture

## **CHAPTER 4**

### **ANALYSIS AND DISCUSSION**

#### **4.1 Requirements and User Interface Features**

Every culture defines its own values and behaviors that depend on the cultural background. Based on Gert Hofstede, there are five elements of culture to develop a cross-cultural web-based system as explained in 2.3. Below are the requirements and user interface features:

The interface design in Power Distance for Student Exchange Program shows a low power distance because the author provides a minimal design. In the interface, author includes the objective, advantages and offer rich information on all different topics such as the Student Mobility Program, Student Requirement, Application Form, Checklist, Applicants Status and Contact. This is to ensure the interface has a clean design and a trustworthy content, structure which motivates the user to view the system. As stated in section 2.3, people with low power distance do not like to be controlled and the information provided allows them to decide on their own. On the other hand, communicate in an informal, direct and participative way is one of the ways to gain their trust and get engaged.

Next requirements is based on Individualism vs. Collectivism. The interface is focused more on the individual user because it has a clear design and offers a lot of details about the program with different kind of topics where user can view the requirements needed to apply the programs or view a list of students that apply the program and many more. Besides, the web system provides an online application form to apply which is an offer to the user. A user with a high individualism has their own initiative where they can act based on their needs and desires so that they can make their decision to apply for this program or not. This will be able to attract them into loyal user because they will visit the web system on their own interest and have their own goal. The idea of self-fulfillment will appeal to the user.

Masculinity vs. Femininity is the next requirements for the interface where the interface focuses more on the masculine side as the system provides a lot of details and benefits about the program prepared by UTP. For example, there is a

Students Requirement page where user can view the details on the requirements needed to ensure they are qualified to apply for the program. Besides, each section has different information such as the learning experience in UTP, status of the application, the checklist that guides the user and others. So, it makes is easy for users to view because they are able to get an honest and straightforward facts about the program. This is why the UTP offers a quality system so that it can grab user attention and motivate them to view the system and apply for the programs offered.

As for Uncertainty avoidance, the interface has a clear and classy design with the university logo, a comprehensive top navigation menu, a content area with lots of visual and footer with a secondary link included in the design. It also provides relevant information in a structured and user-friendly way that gives user safe and trustworthy feelings. The images in the interface help to relate to the program where it shows a real-life situation and gives a positive impression to the user.

The reason why the author chooses to develop a long-term orientation rather than short-term orientation is because the user can make decisions for the future either they want to apply for the program or not. It also does not force user into an immediate decision. The web system has its advantages where they provide an online application that could motivate the user to apply. This can convince them the value of the system that helps the user to make a reasonable decision.

## **4.2 Prototype and System Design**

This aim of this project is to aim on the user perspective in web application based on the diverse culture where the challenge is to develop a web application in order to satisfy the user needs. Hence, the purpose of developing this web application is to measure the most suitable features that needs to be considered when designing a user interface for Student Exchange Program (SEP) online application system which targeting users from diverse culture. The author is needed to develop a web based as a new web based system so that the author can analyse and investigate on the culture which may help to identify a valuable web application where it can motivate and make the user use to apply for the exchange program. This section will briefly explain the design interface of the system.

Basically, there are six sections for a user to view and get information about the Inbound Student Exchange Program that provided by CSIMAL. The main page of the web system is the Home page where the learning experience at Universiti Teknologi PETRONAS is explained clearly and some information is added in the page to ensure the user understand with the program. Besides, a link regarding on the Student Mobility Program is included for the user to click and view to give a better explanation to the user. In Student Mobility Program page, it explains on the programs provided by CSIMAL such as Student Exchange and Summer Program. Figure 27 shows the interface of the Home page and Figure 28 shows the interface on the Student Mobility Program page.

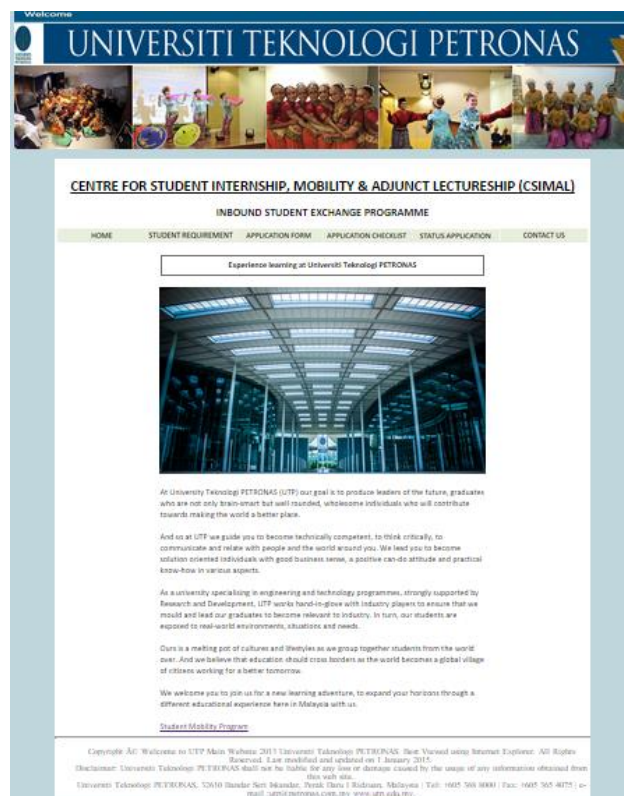


Figure 27: Home Page

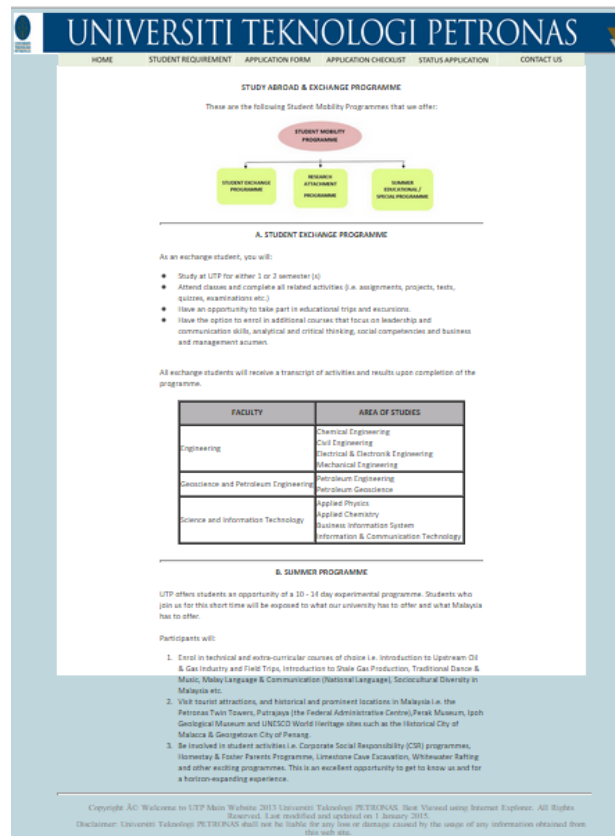


Figure 28: Student Mobility Program Page

Next is the Student Requirement page that includes the eligibility, length of exchange, credit transfer, faculty advisor and report that ensure the user meet the requirements needed by UTP in order for them to apply for this program. This also to ensure the user is alert and understands with the information provided. Once the user has viewed the requirement needed to apply for Student Exchange Program, they are able to decide whether they qualify to apply for the program or not. If they are qualified as the requirement needed, they can apply the program via online by clicking on the Application Form page. Figure 29 is the interface for the Student Requirement page:

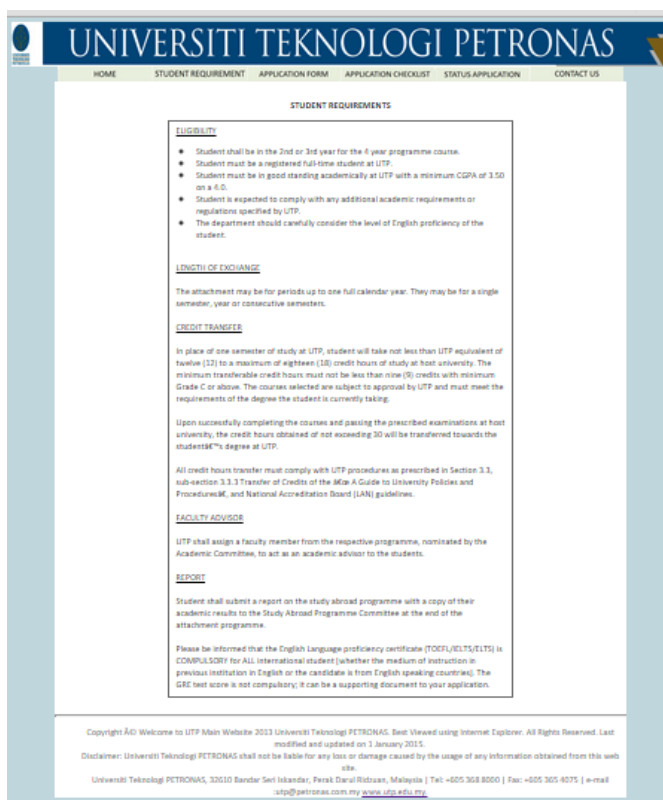


Figure 29: Student Requirement Page

To apply the program via online, user can go to Application Form page and fill in the form based on the information needed in each of the sections provided. Once the user has fulfilled all the details and information in the form, the user can submit the information by clicking on the submit button and a confirmation notification will appear. However, a notification will appear on the screen if the user does not complete the form. Once the details have completely filled and submitted by the user, the data will be captured and send to the database. Figure 30 shows the Application Form page:



**UNIVERSITI TEKNOLOGI PETRONAS**

HOME STUDENT REQUIREMENT APPLICATION FORM APPLICATION CHECKLIST STATUS APPLICATION CONTACT US

**Closing dates:**  
 SEMESTER JANUARY - 01 OCTOBER (every year)  
 SEMESTER MAY - 01 FEBRU (every year)  
 SEMESTER SEPTEMBER - 01 JUNE (every year)

**NOTE:** Students are advised to apply as early as possible to avoid visa delays.

**APPLICATION FOR ADMISSION**

**1. APPLICANT'S INFORMATION**

Name:

Address:

Contact Number:  E-mail:

Gender:  (Male/Female) ▼

Age:  Date of birth:

Country of Birth:

Passport Number:

Nationality:

Marital Status:  (Male/Female) ▼

Sponsor (if applicable):

Sponsor's Address:

Sponsor's Contact Number:

**2. MAIN CONTACT PERSON (in case of emergency)**

Name:

Relationship:

Address:

Contact Number:

**3. CURRENT STUDIES AT HOME UNIVERSITIES**

Level of Current Studies:  (Male/Female) ▼

Year of Study:

Name of Degree:

Main Area of Study:

Country of Current Studies:

Figure 30: Application Form Page

The next section in the web-based system will be the Checklist page where CSIMAL wants the user to attach their supporting details once they have submitted the application form. A list of the checklist is provided to the user to make it easy for the user to check. In the page, contact details are included for user to view so that they know where to send the attachment and how to submit either by email or post to CSIMAL. Figure 31 shows the Checklist page.

**UNIVERSITI TEKNOLOGI PETRONAS**

HOME STUDENT REQUIREMENT APPLICATION FORM APPLICATION CHECKLIST STATUS APPLICATION CONTACT US

**APPLICATION CHECKLIST**

Please prepare the scan copy of the following documents into PDF format and email to [admission@petronas.com.my](mailto:admission@petronas.com.my) or through postal within 7 working days after submitting the online application form;

1. Completed the application form.
2. Identity Card for Malaysian / International Passport for Non Malaysian (if available)
3. Passport-size photo (5 pieces).
4. Home University's offer letter.
5. Evidence of meeting UTP's English language requirements.
6. Official academic transcript.
7. Health Examination Report.

**\*NOTE:**

- Please be informed that original copies of the above documents will be required during registration.
- Send only **COMPLETE** documents. **INCOMPLETE** documents will not be processed.

**NOTE: if documents are not in English, please provide a translation approved by your international Office.**

**POSTAL & CONTACT DETAILS**  
Please complete the attachment application to:

Chairman, Student Study Abroad and Exchange Program  
Centre of Student Internship, Mobility and Adjunct Lecture (CSIMAL),  
Universiti Teknologi PETRONAS,  
31750 Tronoh, PERAK, MALAYSIA.  
Phone: +6 05 368 8380  
Fax: +6 05 368 8386

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Figure 31: Checklist Page

On top of that, a Status page is provided to use in order for them to view their application status once they have been approved or disapproved by CSIMAL. On the page, their ID number, name and status application is shown as Figure 32.

**UNIVERSITI TEKNOLOGI PETRONAS**

HOME STUDENT REQUIREMENT APPLICATION FORM APPLICATION CHECKLIST STATUS APPLICATION CONTACT US

**Application Status**

ID	Name	Status
1	Syaffa	Approve
2	Staci	Approve
3	Selvi	Disapprove
4	Faklari	Approve
5	Fateen	Approve
6	Rafsan	Approve
7	W'uman	Disapprove

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Figure 32: Applicant Status Page

Last but not least is the Contact Us page where there will be contact information such as its address, contact number and fax number of users to be able to contact CSIMAL by themselves regarding on the Student Exchange Program or any inquiries. Figure 33 shows the interface of the page.




Figure 33: Contact Page

On the other hand, the author also develops another web-based system for administering that prompt out the summary or a list of students who applied for the program. The particular web system can only view by the administrator of CSIMAL for the purpose of recording, analyzing and updating the data. However, an administrator need to log in using their staff ID and password before they can view and update on the student record. The Log In page is shown in Figure 34.



Figure 34: Log in Page

Once the user have logged in to the system, user can view a list of students who apply for the program and by having the database, the details about the students is more secure and less human error. The details about the applicants are divided based on the section as it makes it easy for the user to view one by one. A search button is provided to make the user find certain students easy and can save time. In the database, there will be an edit status button so that users can click on that button to update the applicant's status as shown in Figure 35.



UNIVERSITI TEKNOLOGI PETRONAS

Search

1. Personal Information

ID	Name	Address	Contact Number	E-mail	Gender	Age	Date of Birth	Country of Birth	Passport Number	Nationality	Marital Status	Sponsor	Sponsor's Address	Sponsor's Contact Number
1	Syiffa	Kedah	0174751014	sitiunivsyiffa@gmail.com	Female	22	29/01/1993	Malaysia	A345673	Malaysian	Single	Private	none	0174751414
2	Suci	Indonesia	016478622	suci@gmail.com	Female	22	04/11/1993	Indonesia	B889266S	Indonesian	Single	PETRONAS	PERAK	053828837
3	Selbi	Turkmenistan	0123667281	selbi.melayeva@gmail.com	Female	24	13/04/1990	Turkmenistan	1234654	Turkmenistan	Single	PETRONAS	Perak	035638832
4	Fakhr	Indonesia	0193488212	fakhdms@gmail.com	Male	22	23/10/1993	Indonesia	8277310	Indonesian	Single	PETRONAS	Perak	0343552714
5	Fateen	Seremban	01934883723	stph@gmail.com	Female	22	27/11/1993	Malaysia	A3345245	Malaysian	Single	MARA	Kuala Lumpur	035544345
6	Refat	Egypt	0193288717	m.refat@gmail.com	Male	24	8/05/1993	Egypt	8817727	Egyptian	Single	PETRONAS	PERAK	033848823
7	Wunna	Myanmar	0135664234	wunna@gmail.com	Male	23	12/02/1992	Myanmar	288391123	Myanmar	Single	Private	none	none

2. Main Contact Person

ID	Name	Relationship	Address	Contact Number
1	Rohana Yusof	Mother	Kedah	0124751014
2	Astrini	Mother	Indonesia	0136647262
3	Melayeva	Father	Turkmenistan	012345678
4	Akhda	Father	Indonesia	0134567883
5	Maistor	Father	Malaysia	0123734746
6	Sharefedm	Father	Egypt	0123889212
7	Kyuv Soe	Father	Myanmar	0135334572

3. Current Studies at Home University

ID	Level of Current Studies	Year of Study	Name of Degree	Major Area of Study	Country of Current Studies	Name of Home University	Length of Current Degree	Current CGPA
1	Undergraduate	Final Year	ICT	Software Engineering	Malaysia	UTP	4 years	3.14
2	Undergraduate	Second Year	BIS	Finance	Malaysia	UTP	4 years	3.45
3	Undergraduate	Second Year	ICT	Software Engineering	Malaysia	UTP	4 years	3.24
4	Undergraduate	Third Year	ICT	Software Engineering	Malaysia	UTP	4 years	3.56
5	Undergraduate	First Year	ICT	Software Engineering	Malaysia	UTP	4 years	3.14
6	Undergraduate	Third Year	PG	PG	Malaysia	UTP	4 years	3.37
7	Undergraduate	Second Year	CV	CV	Malaysia	UTP	4 years	2.76

4. Study Plan at UTP

ID	Study Program	Mode of Study	Commencing Semester	Commencing Year of Study	Course Name
1	Student Exchange Program	Taught Course	January-May	2016	ICT
2	Study Abroad Program	Taught Course	January-May	2016	Finance
3	Student Exchange Program	Taught Course	May-September	2016	ICT
4	Student Exchange Program	Taught Course	September-January	2016	HRM
5	Student Exchange Program	Taught Course	January-May	2016	Networking
6	Study Abroad Program	Taught Course	January-May	2016	Petroleum
7	Student Exchange Program	Taught Course	January-May	2016	Civil

5. Signature of Coordinator

ID	Name	Title	Organisation Name	Mailing Address	Telephone Number	Fax Number	E-mail Contact
1	UTP	Student Exchange	UTP	utp@gmail.com	053388383	053788377	utp@gmail.com
2	UTP	Study Abroad	UTP	utp@gmail.com	053388383	053788377	utp@gmail.com
3	UTP	Student Exchange	UTP	utp@gmail.com	053388383	053788377	utp@gmail.com
4	UTP	Student Exchange	UTP	utp@gmail.com	053388383	053788377	utp@gmail.com
5	UTP	Student Exchange	UTP	utp@gmail.com	053388383	053788377	utp@gmail.com
6	UTP	Study Abroad	UTP	utp@gmail.com	053388383	053788377	utp@gmail.com
7	UTP	Student Exchange	UTP	utp@gmail.com	053388383	053788377	utp@gmail.com

6. Status

ID	Status
1	Approve <a href="#">Edit</a>
2	Approve <a href="#">Edit</a>
3	Disapprove <a href="#">Edit</a>
4	Approve <a href="#">Edit</a>
5	Approve <a href="#">Edit</a>
6	Approve <a href="#">Edit</a>
7	Disapprove <a href="#">Edit</a>

Logout

Figure 35: Database of the System

Then, in Edit Status page, user is able to update on the status by clicking on the status table. The status can be updated either it is approving or disapprove the students. Figure 36 shows the user interface of the page:

## Edit Status

Status:

Figure 36: Edit Status Page

After the user update the status, the user will go back to the database page and user can choose to update other applicants or log out from the web system.

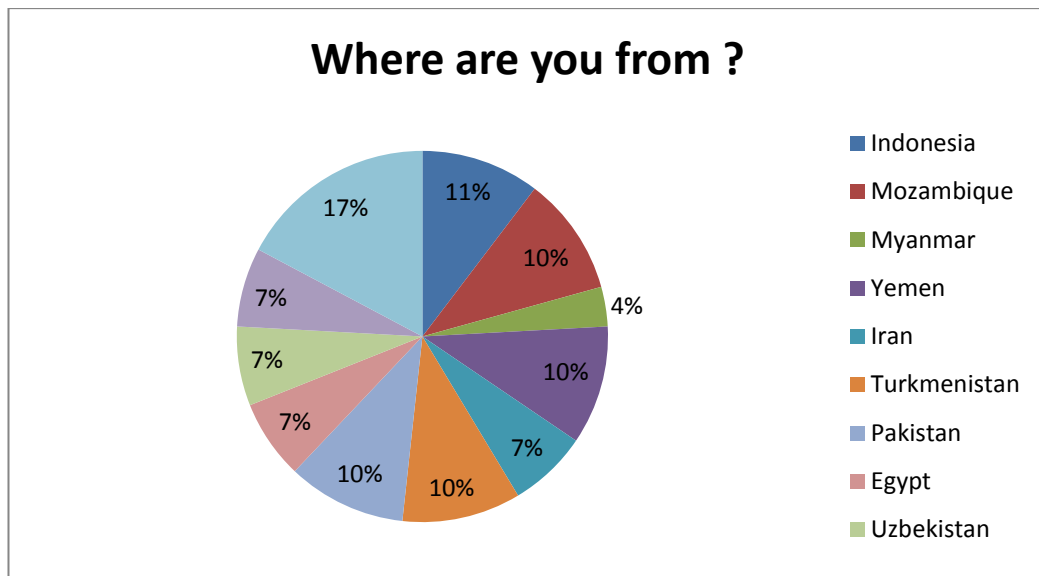
Basically, those are the prototype of the system and based on the researched that the author has made, a good features and design interface has been included in the prototype design according to Hofstede's five elements in developing the interface based on the cross-culture. The author has sort all the features in order to satisfy every culture so that they are motivated to use the web system as it ensures a good study has made.

### 4.3 Survey Analysis

A survey has been conducted to identify the students' opinion on Student Exchange Program Web Application. The survey is made via online and being able to get some feedback from 30 respondents from foreign students itself. There are 6 questions being asked and the results are as follows:

#### Part A: Demographic

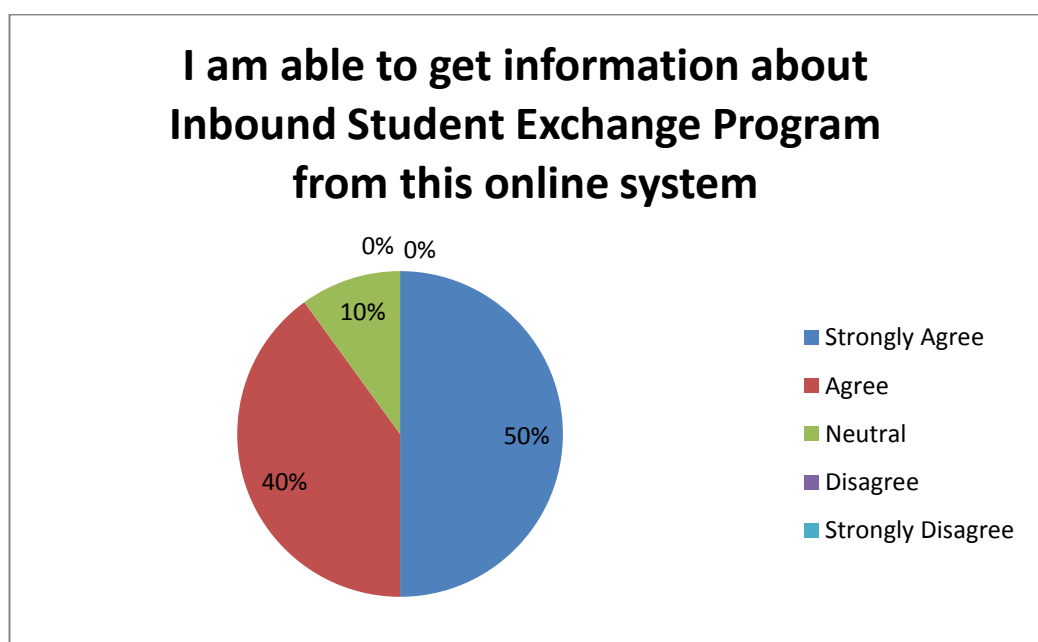
Basically, this part of survey question is asking for the demographic data about the respondents. To make a good web application, we need to identify some information in order to deliver the product to the target students. The data will be gathered and analyse the pattern once we receive the feedback based on the scope of study for this project. The questions are as below:



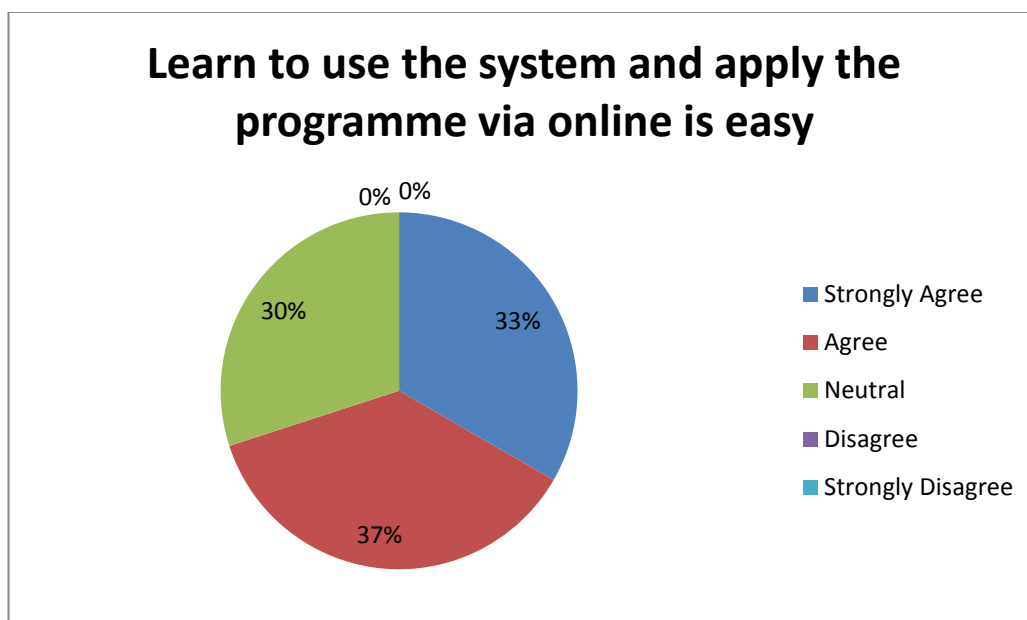
Question 1 is asking where the respondents came from. The survey shows that most of the respondents are from Malaysia itself, which is about 17% and 11% of the respondents are from Indonesia. 10% of the respondents are from Pakistan, Iran, Mozambique and Turkmenistan. The rest of the respondents came from Egypt, Uzbekistan, Myanmar and Yemen.

#### Part B: User attitude towards web application

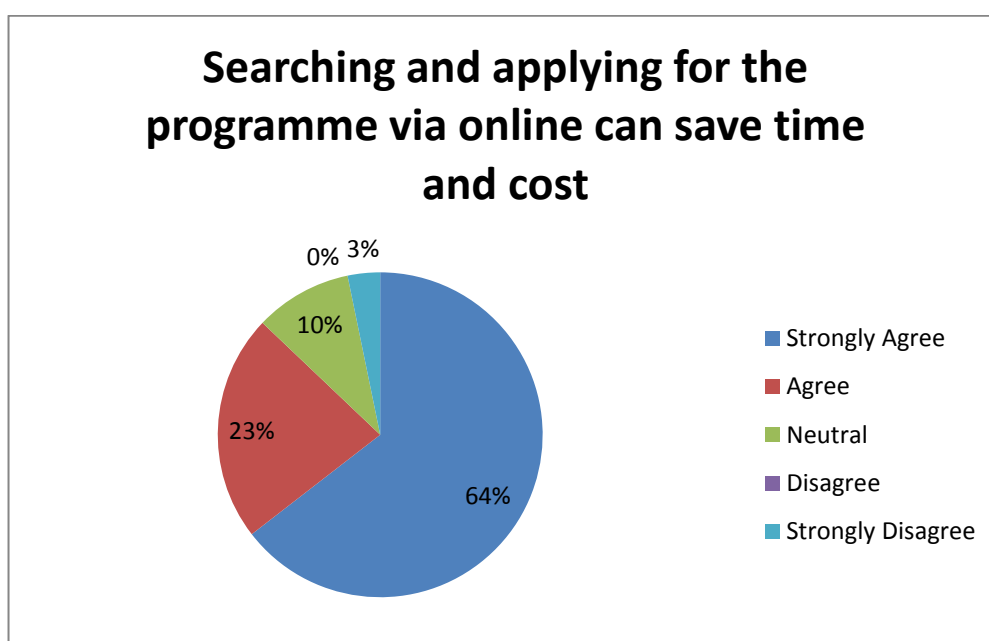
This part will analyse on the information on student attitude towards web application where the aim of this analysis is to investigate the awareness since web application can be considered as new trend to market its products or services.



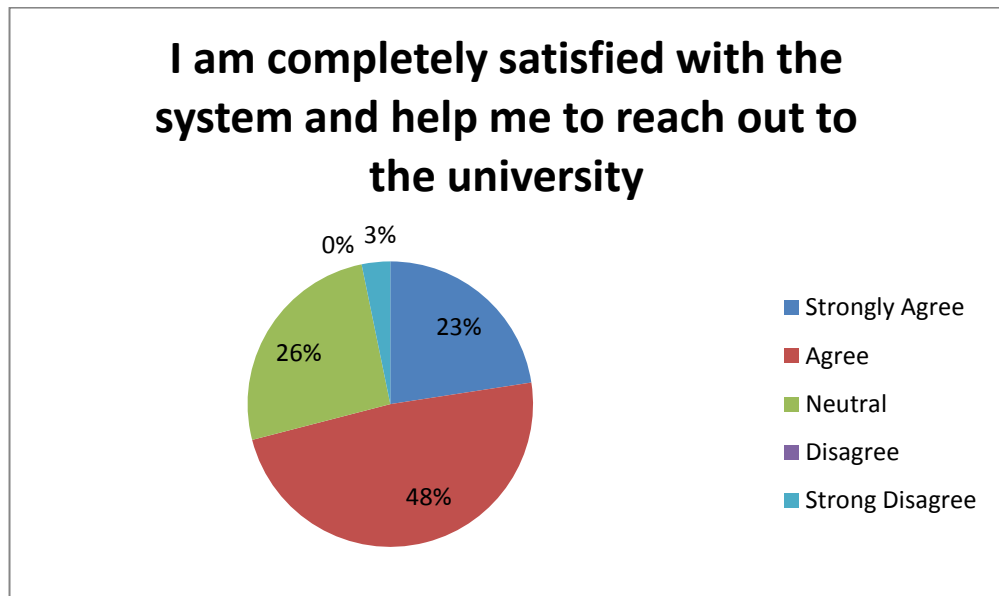
Question 2 is asking user on the usefulness of the system either they are able to get information about the Student Exchange Program easily or not. So, most of the respondents strongly agree which consists of 48%. 39% of the respondents agree, 10% of the respondent are neutral and none of the respondents say disagree and strongly disagree.



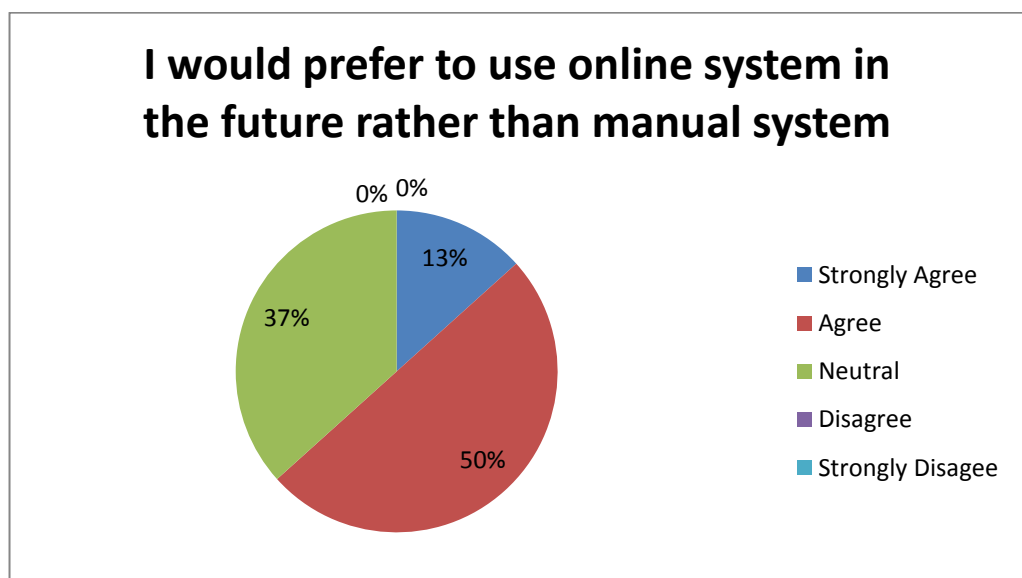
The next question is asked about the ease of use where the user can easily use and apply for the program via online or not. There are about 37% of the respondents strongly agree, 33% of the respondents are agree and the rest of the respondents are neutral.



Question 4 is to ensure that online application can decrease the time and cost than using the manual way. Most of the respondents which are 64% of them strongly agree while 23% of the respondents are agree and the rest are neutral.



For question 5 is about the user satisfaction whether the system satisfies the user or not and help them easily to contact with the university. 48% of the respondents strongly agree while 26% belongs to agree and the rest are neutral.





The last question is asked on the usability of the system where users will prefer to use online system in the future or stay with a manual system. Half of the respondents which is 50% of them are strongly agree while 37%, are agree and the rest of the respondents which are 15% are neutral.

The questionnaire is made based on the user acceptance to perceive usefulness, ease of use, user satisfaction and attribute to usability. This helps the author to develop a better web-based system that could attract them to view and apply the program. Besides, it could evaluate and analyse the user acceptance of the cross-cultural in designing the interface (Davis, 1993).

## **CHAPTER 5**

### **CONCLUSION AND RECOMMENDATION**

#### **5.1 Conclusion**

This section describes the final view of this project on whether the project had successfully done and also suggesting any further work that is suitable for a further enhancement of the project.

To summarize the project, the project is about developing a web application system based on the diverse culture in a foreign country and focus on the global side which to measure a user-friendly web application and the efficiency of the web. This is because the scope of study for this project is mainly based on the user perspective and culture. Moreover, the development is based on the problem statement and reflect the objectives, as mentioned previously being able to grab the concept of cross cultural, design help in developing a suitable and a user-friendly web application which is valuable to CSIMAL and UTP itself while consider the trend for business to promote more on an exchange program with a valuable message to deliver on the products and services to target user. Thus, being able to investigate the user interest would be important as it will lead to their satisfaction and will motivate them more to apply for an exchange program through online.

In relation to that, it is very relevant to apply based on the cross culture, design which evaluate and analyse the user acceptance of the information technology application. Using the five elements of cross-cultural features which are Power Distance, Individualism Vs. Collectivism, Masculinity Vs. Femininity, Uncertainty Avoidance And Long-Term Time Orientation. Also, the author is using Rapid Application Development (RAD) to identify the characteristics and features of web application based on the cross culture that user will attract and motivate more. The project is specifically to show and describe the diversity of culture in a web application with a potential contribution ton CSIMAL and UTP. The web application and system develop will let the user give feedback to ensure the satisfaction of the user where the system also able to capture the data input by the user will store in the database.

## **5.2 Recommendation**

For future work, knowing that this project able to get user feedback based on the system, it is highly recommended that the feedback gained is being used and evaluate to further prove the theory used in this study. Since the aim of the project is to develop a web application, for further studies, UTP or CSIMAL can develop a mobile application in order for users to apply through mobile. This also can enhance to a better project since nowadays users are more attracted to the mobile application.

On the other hand, CSIMAL can also develop a system where they can approve students for SEP via online once the students have been approved by the Deputy Vice Chancellor. Having this via online might save their time and less costly, thus the students can just only view and receive information regarding on SEP via online. Besides, CSIMAL can enhance the system by including the attachment needed in the online application so that students will not wasting time to post the attachments to CSIMAL. This will make it easier and motivate the user more to apply for an exchange program and provide more user-friendly application.

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