Chapter 1: Introduction

1.1 Introduction

Institut Sukan Negara is an agency under Ministry of Youth and Sports which responsible in developing good athlete and coach for the future excel of Malaysia sports team. This small step can begin from providing good platform for coaches to extend their ability and reputation. As a good athlete comes from good coaches.

Hence, Institut Sukan Negara has its own academy for respected coaches to improve their coaching skills which Akademi Kejurulatihan Kebangsaan. This academy provides courses and license for the coaches to master in their own respected field.

This academy is a small leap to achieve good result in any future sports game soon or later. However, there is no specific website or system available to manage the academy business. Currently all application and management are handled physically. Hence, this will be a difficulty to respected coach and potential student to manage their application and courses.

1.2 Project Background

This system is for Akademi Kejurulatihan Kebangsaan under the management of Institut Sukan Negara. The current system for Akademi Kejurulatihan Kebangsaan is fully physical process where the applicants will be needed to download the applicant form online, filled up and submit it physically to the nearest Institut Sukan Negara office near to their respective location.

This new system that soon will be developed will benefits all the potential user of the system from the applicants to the admin. It will help in boosting the performance of Akademi Kejurulatihan Kebangsaan in recruiting more students for their courses and also providing license to potential certified coach. For the students and potential certified coach perspective, this system will ease their applications as the previous method is fully physical and manual where to many places need to go just to apply for their respective business.

Other than that, problem such as managing courses will be in ease as the new system will have the feature in handling the courses in terms of the facilitator, schedule and the student for the courses. Lastly, issues of payment can be overcome by online banking services. As the current system, the payment externally and hard to trace for future reference.

1.3 Problem Statement

I.   **Difficulty for applicant to apply for sport course registration**

The current system of applying for courses are very complicated as the procedure is too inconvenience from the beginning to the end. The potential student needs to download the form and print out. Then they need to fill up the form and submit to the nearby Institut Sukan Negara office. Plus, the form might be rejected, and the applicant need to come again for multiple times to the office just to apply for the courses.

II. **Difficulty for sport coach to renew or apply for coaching license**

This same goes as the potential student applying for the course registration. The procedure is most likely the same. Where it is much troublesome for the applicant to apply.

III. **Risk in handling rejection from the applicant of the courses**

The current system is prone to loss as the payment is made on the first day of the courses. Where applicant might withdraw on the last second of time.

IV. **Difficulty in handling coaching log for the licensed coach**

To apply for new or renew license for coaching, coaching log is needed as it is part of the requirement. In the current system, the coaching log is written in a logbook. To convert it from hardcopy to softcopy for the coach will be complicated.

V.   Difficulty for facility staff in requesting or cancelling courses

All of the courses are managed by the headquarters which is Institut Sukan Negara office at Kuala Lumpur. Therefore, any request for a new course or cancelling must be made there. This will be a burden to person that is from far places such as Kedah, Kelantan and etcetera. As they are needed to travel to headquarter just to applying the courses.

VI.   Difficulty for the headquarter staff to manage facilitator staff information

Facilitator staff information is all been saved physically. Hence, any changes or assignment are difficult to be made.

1.4 Aim and Objectives

a. Aim

This project goals are to develop a website for Akademi Kejurulatihan Kebangsaan to centralize the management of courses and coaching license that will ease the task to be dealing with.

b. Objective

The objectives of the systems are:

1.   To obtain enough and complete requirement for the whole system
2.   To develop the system accurately according to requirement provided
3.   To test each module functionality and flow to meet the given requirement

1.5 Scope and Limitation

This Coaching and Courses Management Web Application for Akademi Kejurulatihan Kebangsaan system is developed to provide platform for the potential student to apply for sport science course registration. As all known, the previous system is too complicated and burden the student to apply for the courses.

Other than that, this system will produce a convenience page for the sport coach to renew or apply for coaching license. Also providing the coaching log so that all of the coaches can update their coaching log with ease. All of these improvements surely benefit the coach so much.

Now from the branch manager perspective, handling course management is now more practical as all of the business can be done via the website. For the admin, all of the profile of all the users are now more manageable and easily executed if any modification is needed.

For the security side of the system, this new system will be more secured as it is developed with security concern from the beginning to the end of the product. Moreover, payment is now can be made via online banking. With that, the loss from late withdraw student or coach can be avoided. Lastly, this system will be well integrated to the available Institut Sukan Negara as it will be suit well according to available website mechanism.

One of the limitations of the system is to fully understand the business flow of Akademi Kejurulatihan Kebangsaan. Although such documentation provided, still there is no such information of the business flow provided for both courses online learning environment and coaching license application by Akademi Kejurulatihan Kebangsaan.

1.6 Significance of Study

The outcome is a web application which centralize all the courses and coach management of Akademi Kejurulatihan Kebangsaan. Hence, admin can manage the system thoroughly from the coaches till the courses. This also include coaches can manage their study material and assessment. While the course participants can review their learning material and view their courses assessment marks.

The output of the study will provide the best business process flow and design for the system. This will help the system to be more accurate in functionality and the process flow. Hence, the study will help in solving the gap pre-exist in the previous system.

Chapter 2: Literature Review

2.1 Introduction

In this chapter, a total of research projects of recent years is compared. The aim of this comparison is to find the gap which exists in previous projects. This comparison also aims to find the similarity of previous papers to study the trend and effectiveness of certain method or decisions.

2.2 Previous Studies

i. **Tunku Abdul Rahman University College Student Intranet**
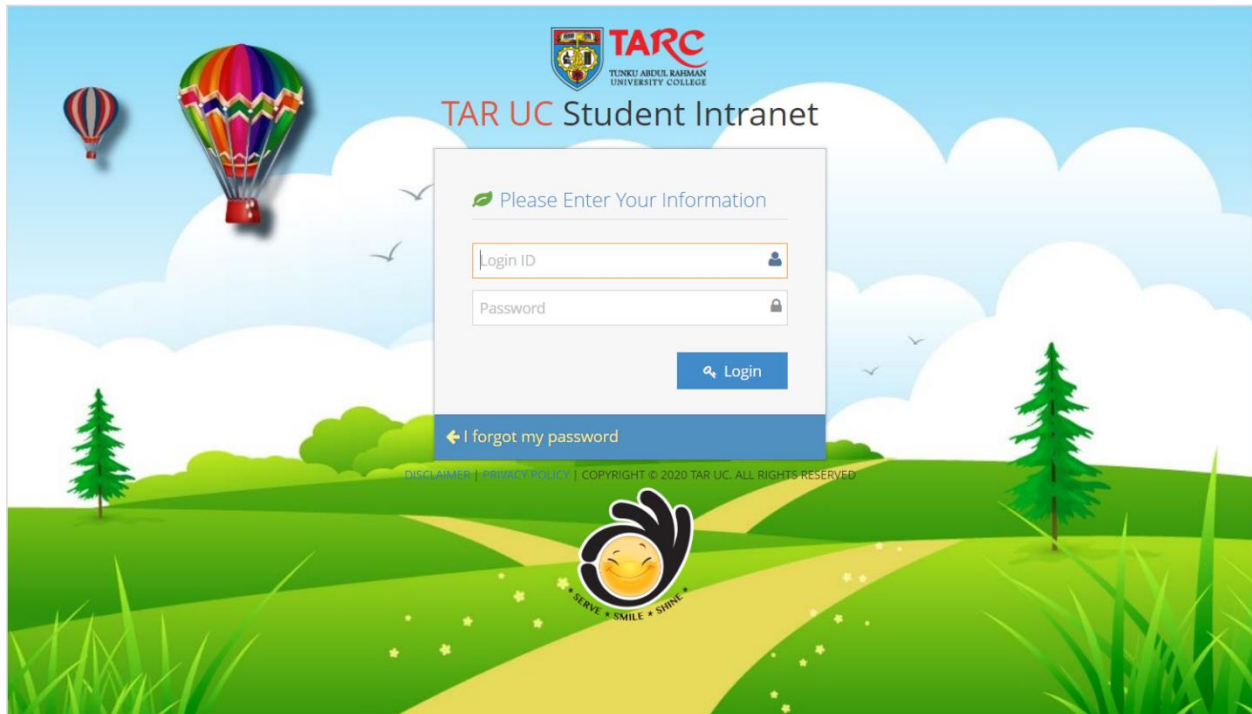
E-Learning Tunku Abdul Rahman University College is the same environment as Universiti Kuala Lumpur Virtual Learning Environment (VLE). This is where all such learning resources are shared by the lecturer and accessible by all the student took the respected course. This environment is the same as the system that will be developed. Where coach can share learning resources and the course participant would be able to view the learning resources. Plus, this previous system is also the same platform with the soon developed system which is online website platform.

Limitation of the system:

a) Complicated design of the system causes the user need to learn on how to use the system which make the system less efficient to use.
b) Complicated procedure of the system causes the user need to spend longer time to do such things involving the system such as uploading learning resources

ii.   Universiti Teknologi Mara E-Learning
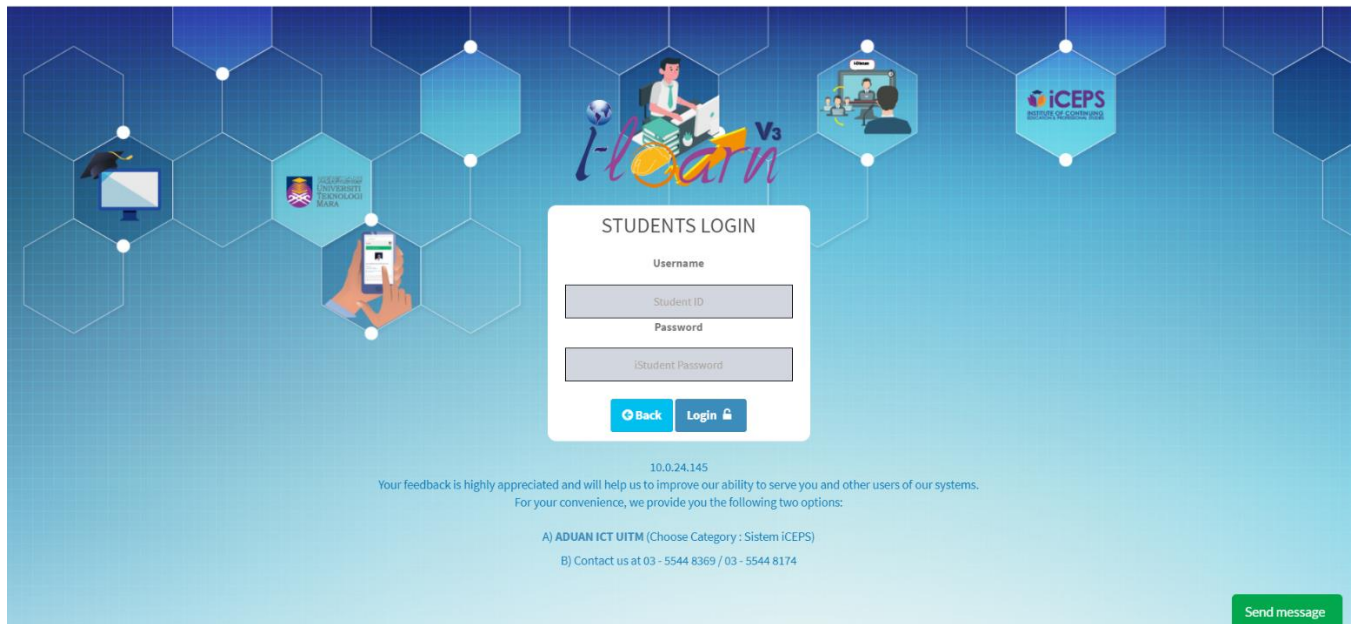
This system provides the students in UiTM an ability to access the course materials and lecture notes as well as to the interaction among students and between students and the lecturers.

From the system, some aspects have been pointed out:

a) Delivery Method in E-Learning

    i.   Video presentation
    ii.   Audio notes
    iii.   Written notes

b) Content in E-Learning

    i.   Notes
    ii.   Exercises
    iii.   Past examination paper
    iv.   Assessment marks

c) System operations

The system should be available in all type of devices which consist of laptop, computer and mobile phones. Hence, the best platform is should be web application where it is accessible by all types of devices.

d) Communication facilitation

Most E-Learning system does not provide communication facilitation. Hence, the communication between lecturer and student is going to be difficult as they need to be done outside of the system. This pointed out the importance of having communication function in the system.

e) User Satisfaction

User Satisfaction is directly related to the four aspects above. Hence, the efficiency of the system can be achieved at most.

v. Kentucky Transportation Center
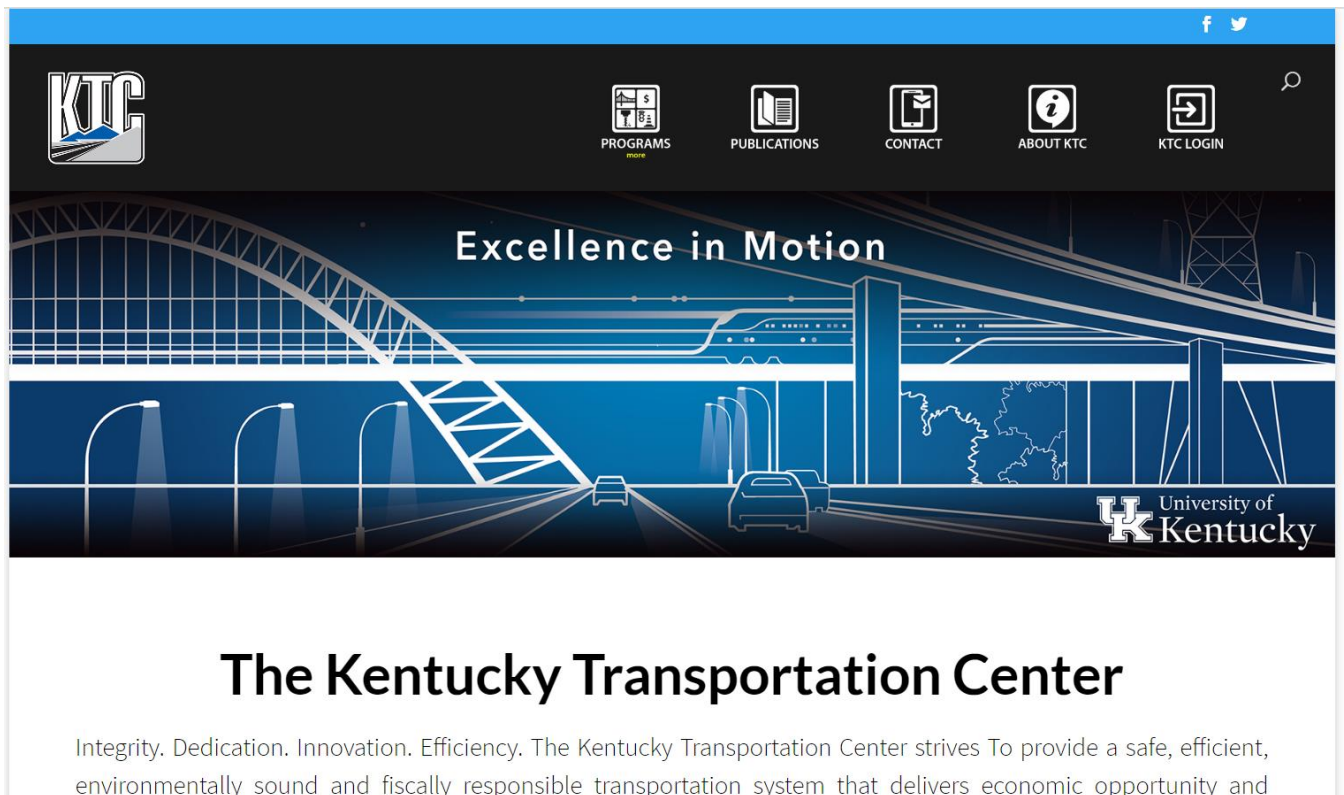
This system is responsible in providing online driver's license renewal. This system has been developed due to the high demand by respected country driver.

Benefits of the system:

     a. Decrease the number of customers line on the branch offices.
     b. Can provide cheaper cost compare to in-person renewal
     c. More convenient for the customer
   d. Encourage driver to renew their license

Difficulty faced after developed the system:

a. People still preferred in person renewal due to less exposure of explained process procedure

b. Some people does not have valid online banking account to make payment

c. System cannot support high traffic

Aspect need to take account for applying license:

-Restriction (e.g. Applicant has bad reputation as a driver before.)

-Eligibility Requirements

-Payment type

vi.   Universiti Teknologi Malaysia E-Learning
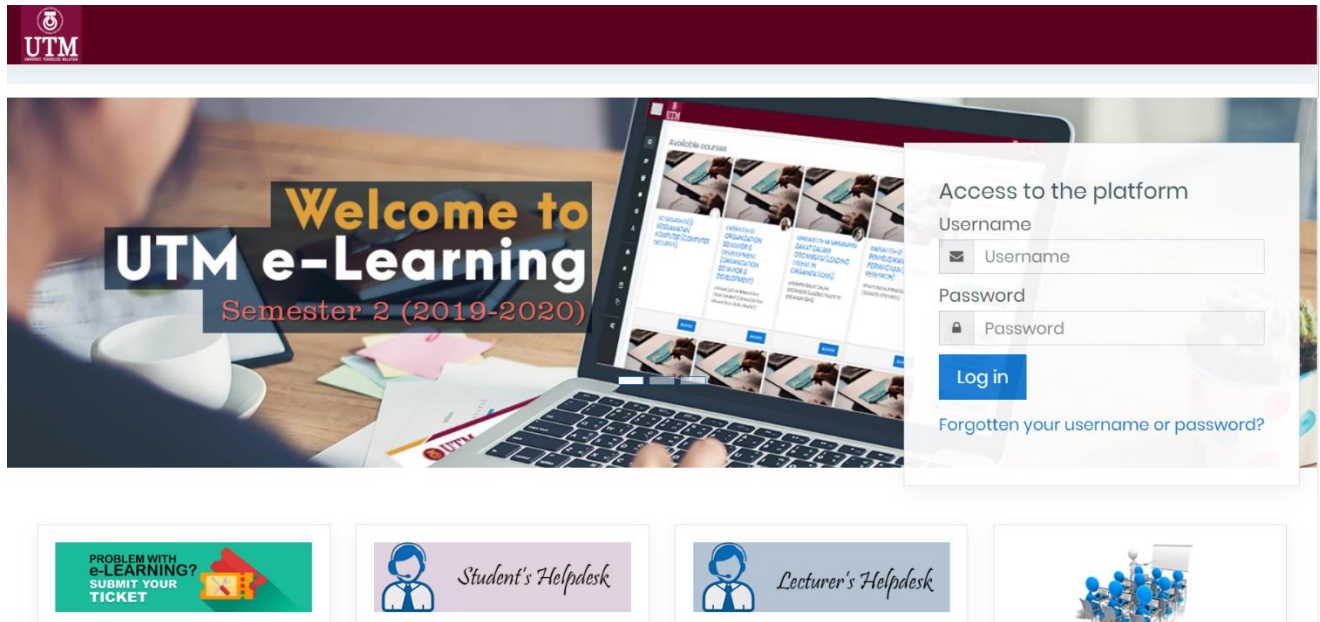
This system is developed to facilitate student's access to information about their subject, hence, to increase student interest and understanding about their subject which to make it easier to access information and also make it easier to study with unlimited concept.

Below are several aspects that affect the efficiency of the system:

1. Learner Interface of E-Learning

    According to Chiu et al.,(2005) state both the quality of the educational software and interfaces are related. With that, a proper design of modules in e-learning will also encourage in problem solving skills. The construction of the interface will greatly affect on how the user sees and fully grasp of the system thus will bring great impact on the functionality.

2. Learner Community of E-Learning

    If the system is user-friendly, it is seen more use full thus they will have stronger intentions to use online learning. According to Nonaka and Nishiguichi (2001) the student improves the communication and sharing of information by interacting with others in online learning community.

3. Perceived Usefulness of E-Learning

    When the student gain fulfilment in using online learning, they are more confident on Perceived Usefulness. This was confirmed through other researchers (Roval,2004). However, perceived ease of use influence learner's satisfaction.

vii.   GoBusiness Licensing

GoBusiness Licensing is a licensing portal that is mainly used in Singapore. Here, there are compilation of all licensing services that available in Singapore. Singapore citizens can apply or renew their respective licenses online via this portal

Some aspects that are been highlighted in the system:

1. User need to have an account before applying any licenses
   This prior requirement before making any application is a compulsory because this ease the application process. Other than that, it can avoid the unnecessary spamming of application.

2. Any supporting document is needed acknowledgement for better checking for requirement eligibility
   In the process of application, there is a step where user must acknowledge their documents and details provided. With that, it can prevent fake identification and details in applying for such license.

3. Applicant can review their application once submit the application
   After application submitted, the applicant still can review their application before the admin approve or reject the application. This step would make the applicant more secure in applying such license as they still can review their provided details to prevent application rejection.

2.3 Comparison with Previous Studies

E-Learning Environment

System / Function	Tunku Abdul Rahman University College Student Intranet	Universiti Teknologi Mara E-Learning	Universiti Teknologi Malaysia E-Learning	Kursus Sains Sukan E-Learning
Ability to auto-logout when inactive	✗	✓	✓	✓
Allow communication between users	✗	✓	✓	✓
User-friendly interface	✗	✓	✗	✓
Support multiple type of files	✗	✓	✗	✓
Provide timetable	✓	✓	✓	✓
Separate profile page with e-learning page	✓	✗	✗	✓
Available on multi-platform	✓	✓	✓	✓
Provide guide to use the system	✓	✓	✓	✓
Can view assessment marks	✗	✓	✗	✓
Provide repository	✗	✓	✓	✗
Support online quiz/test	✓	✓	✓	✗

Licensing Application Environment

| System / Function	Kentucky Transportation Center	GoBusiness Licensing	Akademi Kejurulatihan Kebangsaan Coaching Licensing
Login needed prior to application	✖	╱	╱
Requirement eligibility checking	╱	╱	╱
Review application after submission	✖	╱	╱
Document acknowledgement	✖	╱	✖
Non-complicated application process	✖	✖	╱
Support online banking	╱	╱	╱
Timed out session when inactive	✖	╱	✖
User can view application progress	✖	╱	╱
Accessible on multiple platform	╱	╱	╱
User-friendly interface	✖	✖	╱

Chapter 3: Methodology

3.1 Introduction

In software development, the methodology follows a Software Development Life Cycle (SDLC) Model. It is a framework used to structure, plan and control of the overall development process. This chapter will discuss the SDLC of choice for this project and how it is relevant to the project.

3.2 Agile Model

For this project, the chosen SDLC is the Agile Model. In this model, the software is developed in small, quick segments. With that, changes can be made more frequently. This model differs from traditional software development such as waterfall where each phase has to be completed to proceed to the next one.
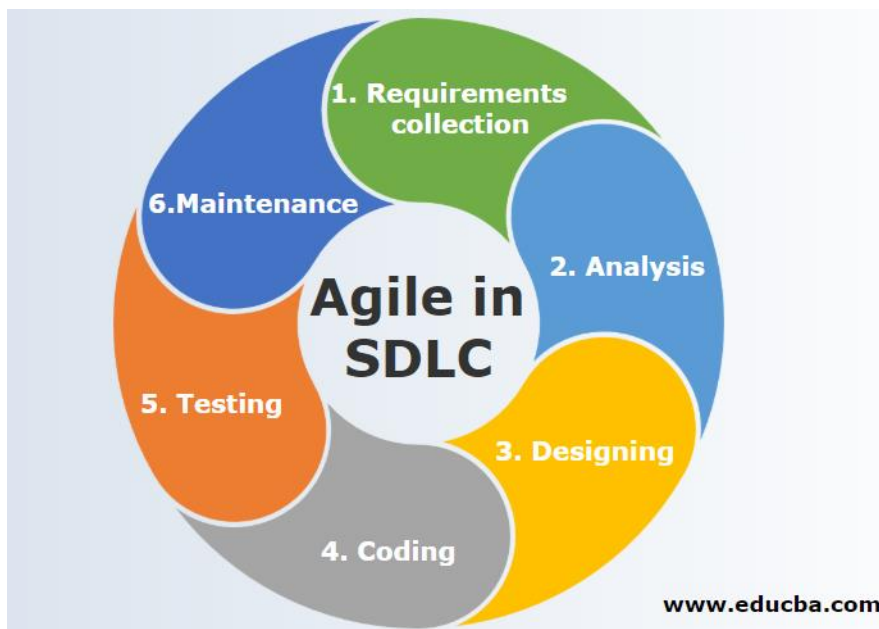
3.2.1 Requirements Collection

In the beginning of the project, requirements are defined clearly. All details requirements are discussed with project supervisor. Hence, clear goal was set for the system. As it is, requirement phase does not take much time in the project development. Details requirement can be obtained in the Software Requirement Specification document of the project.

3.2.2 Analysis

From the requirement obtained from requirement phases, analysis should be done next. All requirements will be reviewed and analysed in referred to the system that will be built. The requirements will be classified according to their priorities. This is for the ease in the development later.

3.2.3 Designing

After analysed such requirements, all designs will be made. This include database design, system architecture, and user interface. This design needs to be done to ensure the flow of the system is aligned along the development process.

3.2.4 Coding

In this coding phase, system development began. The system was built in approaching towards expected final product of the system. The system was being developed based on user module below:

1.	Admin Module
2.	Branch Manager Module
3.	Coach Module
4.	Course Participant Module
5.	Guest Module

3.2.5 Testing

When each module has been developed, testing will be made. This to ensure every module functionality is fully satisfied based on the requirements given from requirement phase. Starting from the second module has been completed, integration testing will be done to ensure the interaction for every module that supposed to happen is executed gracefully.

1	Unit Testing	This test level focuses on testing of individual module component.
2	Unit Testing + Integration Testing	Starting from the second module, both unit testing and integration testing will be done to ensure the completeness of functionality.
3	Unit Testing + Integration Testing + System Testing	After the last module development has been completed, these three testing will be done which are unit testing, integration

		testing and system testing. These need to be done to test the functionality of the whole system.
4	Acceptance test	The acceptance test is where the test is conducted by the client. The client will decide if the system has fulfilled their requirements.

3.2.6 Maintenance

After each testing has been done, if there are flaws, maintenance need to be done. This include fail to reach user requirements, system failure and integration failure. All maintenance should be done before entering new loop cycle of development. This to ensure the smoothness in system development.

3.3 Project Resources

Software	Description
Microsoft Windows 10 64-bit	Microsoft Operating System
Android Studio IDE	An official integrated development environment for Google's Android operating system
PHP	Server-sided scripting language used to develop website
phpMyAdmin	Graphical user interface database management system.
MySQL	Database platform
Apache HTTP Server	A public-domain open source Web server
Komodo Edit	Code editor

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