

TRAINING KITS FOR JPJ

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## **EXECUTIVE SUMMARY**

The Training Kits for JPJ is a courseware which enables the candidate to understand better on the rules and regulations on the road. The purpose of this report was to examine the implications of the current Driver's Education Curriculum (DEC) test. The candidates who sit for the test feel bored with the text based test especially the long question with many words. Beside this, some specific term also makes candidates didn't understand the question as well. Internet searching, journals, books and other related resource are part of the methods for doing this analysis. With the potential to solve these problems, the Training Kits for JPJ has been developing. This Training Kits for JPJ is a courseware which use the Driver's Education Curriculum (DEC) test's questions combined with some interactive multimedia elements. With this, candidates will be able to understand better about what the question asking about and will have a better understanding. After the findings, Software Development Life Cycle (SDLC) phase has been chosen to be used to build up this Training Kits for JPJ's system and make sure the process of building it become more systematics. The main purpose for this Training Kits for JPJ is to create an interactive environment for the candidates and make sure they can understand the law of traffic better through the courseware which made up with the Driver Education Curriculum (DEC) test's questions and multimedia elements. If the candidates clearly understand the rules and obey them, then it can really decrease the rate of accidents that occurs on the road. This project is target on the candidates who are going to take the written test before proceed to driving test.

## **RINGKASAN EXECUTIVE**

Training Kits for JPJ ini merupakan satu aplikasi yang membolehkan calon lebih memahami undang-undang jalan raya. Tujuan laporan ini adalah untuk mengkaji implikasi Pemandu semasa Pendidikan Kurikulum (DEC) ujian. Calon-calun yang menduduki ujian itu berasa bosan dengan ujian berasaskan teks terutama soalan panjang dengan terlalu banyak perkataan. Selain ini, ada perkataan menyebabkan calon tersilap memahami soalan tersebut. Mencari internet, jurnal, buku dan sumber lain yang berkaitan adalah sebahagian daripada cara untuk menjalankan analisis ini. Dengan potensi untuk meyelesaikan masalah ini, the Training Kits for JPJ telah dibangunkan. Training Kits for JPJ telah campur soalan yang terkandung soalan ujian Driver's Education Curriculum (DEC) dengan penambahan unsur-unsur multimedia interaktif. Dengan unsur-unsur multimedia interaktif ini, calon boleh lebih memahami soalan dan jawapan yang terkandung dalam Driver's Education Curriculum (DEC). Selepas penemuan, Software Development Life Cycle (SDLC) fasa telah dipilih untuk digunakan untuk membina Training Kits for JPJ dan memastikan proses membinanya menjadi lebih sistematik. Tujuan utama Training Kits for JPJ ini adalah untuk mewujudkan persekitaran yang interaktif bagi calon-calun dan memastikan mereka dapat memahami undang-undang lalu lintas yang lebih baik melalui ujian Driver Education Curriculum (DEC) dengan penambahan elemen-elemen multimedia yang disediakan. Jika calon-calun jelas memahami peraturan dan mematuhi, maka ia dapat mengurangkan kadar kemalangan yang berlaku di jalan raya. Projek ini adalah sasaran kepada calon-calun yang akan mengambil ujian undang sebelum meneruskan untuk ujian memandu.

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## CHAPTER 1 : INTRODUCTION

In past, the written driving test was start about year of 1937. The written driving tests play a very important role in order to get driving license. Before beginning to drive, a person acquires a driving license first. JPJ or Road Transportation Department in Malaysia is the department in charge in this written and driving test.

In my final year project, I came to a decision to develop a Training Kits for JPJ courseware. Training Kits for JPJ is a written driving test courseware which will provide good informational elements based on the JPJ or Road Transportation Department. The candidates who are going to take the L-license had been chosen to be the target user for this courseware. Every time many candidate facing the same problem which is difficult in understanding some term use by the JPJ or Road Transportation Department because there is no interactive multimedia elements provided beside the text. When facing the difficulty in understand the question then obviously it is very difficult for the candidate to score on that question. So this Training Kits will be develop to help those candidates to have a better understanding of the question in the DEC book by providing with some interactive multimedia elements.

This courseware will contain 10 questions which will be chosen from the JPJ or Road Transportation Department written driving test. There will be few answer options provided for every question. There will have interactive multimedia elements provided in order to make those candidates understand about the questions and answer options. So it will be irrelevant if only text being used, which is why the consideration about this must be made in order to avoid the same problem like the test that had been provided by the Road Transportation Department nowadays. According to the Marc Andreessen, 'People are so



bad at driving cars that computers don't have to be that good to be much better. Any time you stand in line at the D.M.V. and look around, you're like, Oh, my God, I wish all these people were replaced by computer drivers.' So the written driving tests playing a very important role in order to ensure the safety of the road user.

There will be an administrator who will look after this Training Kits for JPJ courseware. This admin will take the responsible to maintain the system to prevent any error occurs. If there is any error or problem occurs, then the administrator will have to repair the system. So the administrator has the heavy responsible in order to ensure the courseware can be running smoothly without any problem.

### **1.1 Problem Statement**

The problem statements of this project are:

- Nowadays the JPJ written test had only been set by using the text and a little bit of the still picture only. The text normally uses to describe about the question requirement and the answer selection only.
- There is little bit of the still picture provided in the JPJ written test but usually, the still picture is just used to improve the question structure only. For example, the still picture is just use to represent the road symbol and the road sign only. So it will not cause those candidates to understand better about the question requirement and answer options.
- Seem all the still picture did not improve the understanding of those candidates, thus it will causing difficulty in memorizing those laws.
- Memorizing will be affected if those candidates not understand about it. Some candidates will even misunderstand about the meaning of specific term of the question requirement and answer options. So, it will cause those candidates facing the problem in memorizing all the rules and regulations.
- When they face this kind of not understanding problem, so consideration must been made and it will cause them to wasted more time. As a human being they need longer

time to understand about the question requirement and make a decision to choose the appropriate answer from one of those answer options that provided.

- When all of the JPJ written tests were based on mostly text based without the interactive multimedia elements provided, the candidate will feel bored when looking at a very long question. Some of the candidates will even lazy to read about the question and they just simply choose an answer from the answer option. Eventually this will cause that candidate to lose their mark in this particular question.

### **1.1.1 Objective**

The objectives of this project are:

- To develop the prototype of Training Kits for JPJ.
- To verify candidates understand the questions and answers in JPJ written driving test by providing the interactive multimedia elements.
- To validate improvement JPJ tests method by making a courseware which is easier to understand and more interesting.

### **1.1.2 Scope**

The target users of this Training Kits for JPJ are candidates who sit for written driving test, JPJ tester and administrator.

- Candidates who sit for written driving test  
Those candidates going to sit for the written driving test can easily understand about the questions requirement and answer options. They can more clearly about the rules and regulations with the help of the interactive multimedia elements.
- JPJ Officer  
The JPJ Officer is to manage those candidates' computer and observe those candidates while they having the JPJ written driving test. The JPJ officer has to log in to the courseware to allow the candidate to use the courseware.

- Administrator

Administrator will maintain the system. Administrator also playing very important role to update the system and ensure the system is up to date. Besides that, the administrator has to ensure the system can run smoothly without any error occurs. If there is any error or bug, the administrator has to repair the system until it can run without error occurs.

## **1.2 Description of existing system**

There currently have the Driver's Education Curriculum (DEC) test and this test system using the mainly text based test and some multimedia elements, but the multimedia element is mostly the part of the question so it does not help to improve candidates understanding. The Driver's Education Curriculum (DEC) test before this current Driver's Education Curriculum (DEC) test is worse. During that time Driver's Education Curriculum (DEC) test is manual test which didn't using the computer. Beside this, the test questions have to answer in the question paper provided and no online database during that time. So the paper is the proof for the test.

### **1.2.1 Current Driver's Education Curriculum (DEC) test system**

Nowadays before getting the driving license, all the candidates are required to pass their written driving test. This written driving test actually give candidates understand about some rules and regulation about the rules and regulations. In this DEC system, normally almost all the test question and answer were in text based and there is quite number of specific term used like hydroplaning. All this term cause those candidates to misunderstand the meaning of the question or answer.

DEC system is responsible to test the understanding of those candidates about some driving rules and regulations. They have to pass this test so that they just can get their L license and proceed for the driving test. So this DEC system is very important. If those candidates really clearly understand about all the rules and regulations then the accident rate on the road can be reduce. Then it can reduce huge losses to the economic output of the country.

Nowadays, there are many things have been computerized like doing notes, e-books, games and other. This DEC system has also been computerized. This DEC system needs to

install in a computer and it require an internet connection. If there is some internet problem then the test cannot be carry out. All the record about the result of those candidates will be recorded in database so that the officer can use it as a reference or proof to show that the candidates have already taken and pass the test.

There is some advantage of using this DEC system. It can filter out those candidates who really understand and who do not understand the rules and regulations for those road users. So only those candidates that really understand can proceed to the driving test. While for those candidates who fail in this DEC system then they have to study again. Then they have to pay the fee again so that they can have another test. Those candidates will keep repeating until they pass the test then they just can proceed for the driving test. So this can ensure the quality of the candidates who take the test. All the result for those candidates who already sit for the written driving test was recorded in the database of the JPJ department. So if the computer spoils then they can get the information about the candidate directly from the server or the place they store the data. So the data is very safe and highly available for those examiners. They can view it by just clicking a few buttons, so it is very simple and easy.

### **1.2.2 Driver's Education Curriculum (DEC) test system before**

Before this, computer is very expensive and not popular, so not many things had been computerized during that time. Those old computer are very slow if compare with now. So before the year 1997, the written driving test was carry out in written form. Those candidates had to go to the class and use the pencil to answer the question like sitting for the test in secondary school.

During that time no DEC software yet, so no need to use the computer and internet technology. Just a pencil and paper needed then the written driving test can be carried out. The table arranged into row by row and separate with a certain distance to prevent the cheating happened. Then the written driving test question paper will be given by the tester in charge. There will be some instructions given as well like what you should do during the test duration, ways to write the answer, and more. So those answers will be in written form, not using any typing or clicking.

There are many advantages for carry out the written driving test. It can filter out those candidates who clearly understand and who do not understand the rules and regulations for those road users. So only those candidates that really understand can proceed to the driving test. While for those candidates who fail in this DEC system then they have to study again. Then they have to pay the fee again so that they can have another test. Those candidates will keep repeating until they pass the test then they just can proceed for the driving test. So this can ensure the quality of the candidates who take the test. All the results will be recorded using handwritten form.

### **1.3 Limitation of the existing systems**

Nowadays, in this advance technology era, there are so many devices have been invented and widely used. Those devices include PCs, smartphone, tablet and others. So there is many things have been computerized and the internet's technology also playing a very important roles. That is the reason that the DEC system has been computerized.

The limitation of the existing system like the KPP system before which is not yet computerized is not environment friendly. Before this DEC system has been computerized, every question and answer option will be printed out for those candidates. And after checking by the tester then the printed paper cannot be used again. Beside this the result after marking not store using the database. so if there is any accident happen like the result had been drop then the tester can't check back the result if there don't have a backup.

Besides this, the limitation of the existing system like the DEC system before which is not yet computerized is the candidates facing the understanding problem. During that time, the question and answer options were all in text based. There is some research show that dynamic and interactive representations were designed to encourage the children to relate their current understanding to the concepts being represented and to test their assumptions via these concepts [9].

The limitation of the existing system like the DEC system using now is candidates facing the problem in understanding the questions and answer options. When those specific terms used in the questions and answer options like hydroplaning and other, then the candidates will spend a lot of time to think and guess about the meaning of the specific term. If they guess wrong then they will most probably lose marks on that particular

question. When the candidates not understand about the specific term, then they can't remember about the rules clearly.

The last limitation of the existing system like the DEC system using now also facing the problem of don't have the interactive multimedia elements. Almost the entire images that show on the question are normally the image of the sign board. So it didn't help the candidate to understand those specific term, it is just a part of the question only. So this interactive multimedia element should be implementing to let those candidates to understand about the questions and answer options.

#### 1.4 Comparison on the Existing Product

Table 1: Comparison between the existing systems

	DEC test system before	Current DEC test system	Training Kits for JPJ
Interaction	No	No	Yes
Internet	No	Yes	Yes
Online Database	No	Yes	Yes
Multimedia Element	No	Yes, a little bit of picture but normally is part of the question	Yes, which will help to improve understanding
Limitation	Waste Resource	Difficult to memorize and understand	The file size very large

## CHAPTER 2 : REPORT BODY

### 2.1 User Requirement

Client Name:

Introduction

This is an interaction written driving test for the candidates who are going to sit for driving test. This project develop to allow candidates to learn easier and memorize better compare with the old style text based written driving test that we use to take now. By using this, it can let the candidates understand easier about the rules and regulations on the road, thus it can eventually reduce the accident rates.

User requirements as follows:

Login Module

- This instructor or admin for the Training Kits system must have the login user ID and password in order to let the candidates to take the test.
- If the instructors or administrators enter the wrong user ID or password, then the system cannot proceed to the following page.
- The administrators have the power to add and delete the instructor's accounts.
- This login module is target for the instructor or admin to login only. Candidates do not require to login, they just need to fill in their personal information into the system.

Application Module

- Computer or laptop will be the media to run this application.
- After the candidates fill in their personal information, then they just can proceed to the page to take theirs written driving test.
- There are some interactive questions with the multiple choice answers provided in the written driving test.

- If the candidates answer the question with a wrong answer, then they require to do it again until they really know the correct answer.
- If the candidates answer the question with a wrong answer, then they require to do it again until they really know the correct answer.
- After the candidates finish took the test, and then the candidates have to click the finish button to end the test system.

#### Database Module

- This database module will keep the data for the user ID and password for the instructors and also administrators.
- This database module will record the candidates' personal information like their name, identification number, address, phone number and so on.

Signature,

.....  
( )

Date:



## 2.2 Technique/theory/modeling/flow chart/storyboard/all relevant diagrams

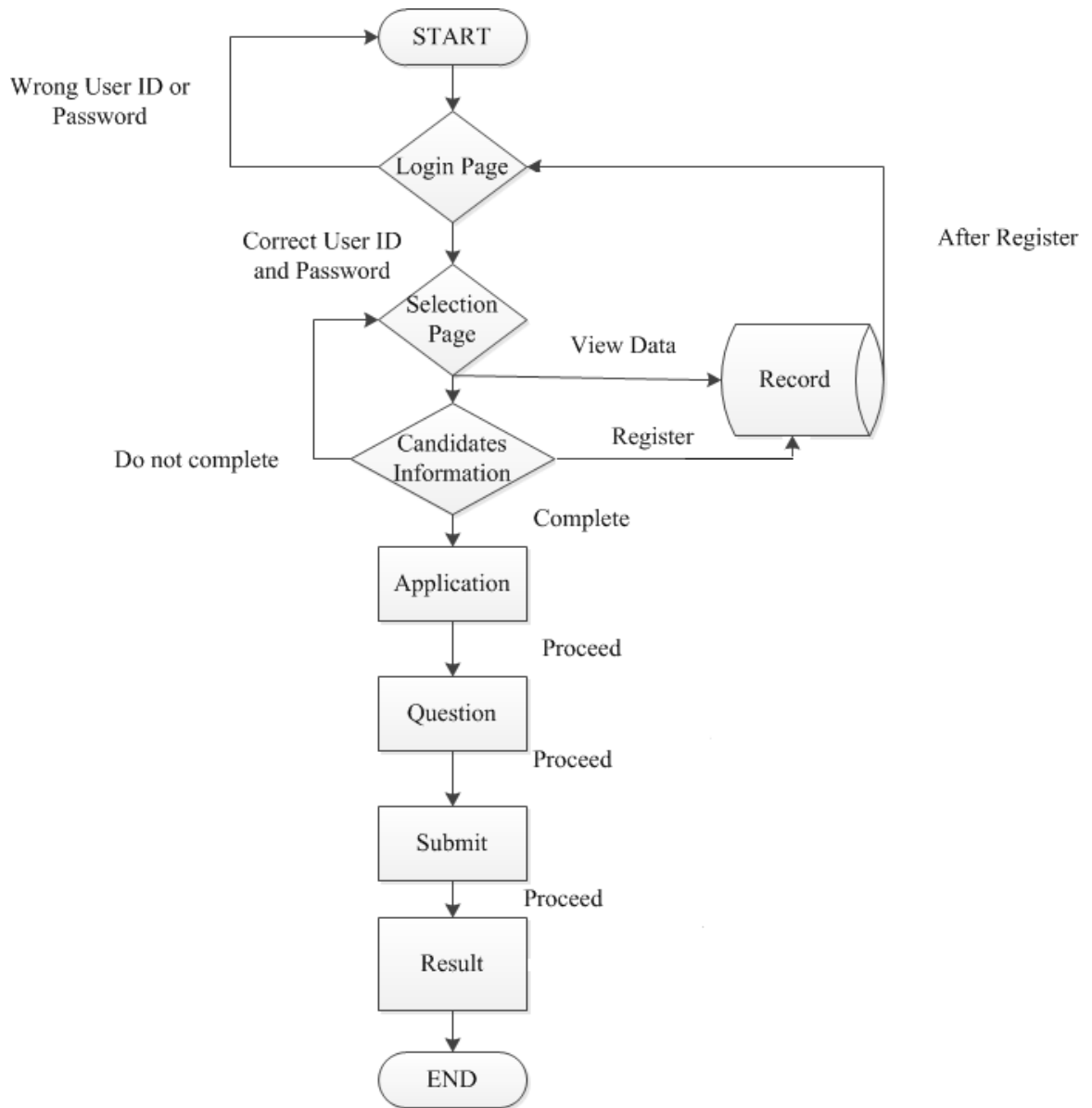


Figure 2.1 Flow chart of the system

Firstly, the JPJ officer needs to insert the correct username and password to login to the system. If insert wrong username or password, then the system cannot be used. After login to the system, the officer will enter a selection page where the officer can select to view the data of candidates or proceed to the testing system. So when click check candidate

information then the data from database can be view. If select to proceed to test, then the candidate has to fill in his personal information. After complete fill in then it just can proceed to the application. Then the question will be shown, the candidate has to submit the answer option that selected then he or she can directly know whether the answer they choose is correct or wrong. So when the entire question has been finish answer, then the candidate can click finish button to close the application.

### 2.3 Method and material used

To develop the Training Kits for JPJ, the method System Development Life Cycle (SDLC) has been chosen to be used. There have six phases in the System Development Life Cycle (SDLC) methods which are planning, Analysis, Design, Development, Implementation and Operation and maintenance.

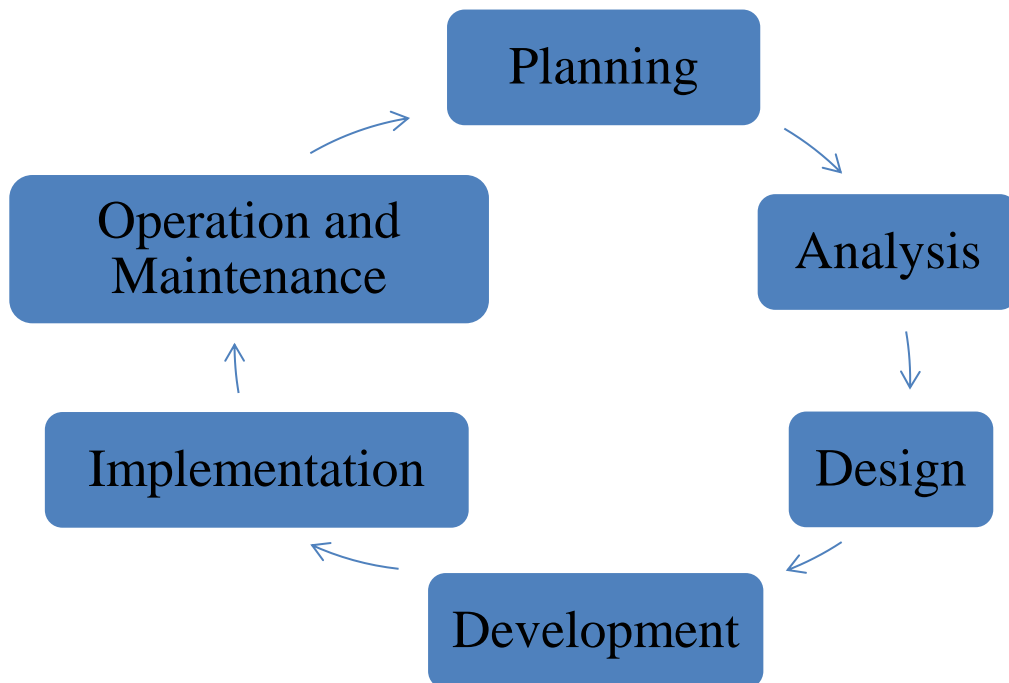


Figure 2.2 System Development Life Cycle (SDLC)

### **2.3.1 Planning**

Planning is the first phase in the Software Development Life Cycle (SDLC) process. Firstly, get the topic from the supervisor. Then plan see which resource that acquires to do the courseware. And do a Gantt chart to view the progression see what task should be do and what task should be done during a certain period of time.

### **2.3.2 Analysis**

After get the title, and then I start to collect the information and data about the written driving test by the JPJ through the internet, journals, thesis and other resource which is useful to collect the data about the problem of previous written driving test. For the pass system, the written driving test by the JPJ is mostly text based neither question nor answer option provided. This is the reason why the Training Kits for JPJ is planning to develop. This Training Kits for JPJ project is aim to make the candidates that are going to sit for the written driving test feels more interesting, more interactive and easier to understand about those question and answer in the Driver Education Curriculum(DEC) books by providing which some interactive multimedia elements.

### **2.3.3 Design**

This design phase is the third phase in the System Development Life Cycle (SDLC). During the design phase, I start to do the flow chart and storyboard see how is the flow for the system. Beside this, I also plan for the architecture design and also system context diagram to see the requirement needed to done the system. So all this will specific the technical requirement which the system required to operate. The design phases can be including designing the interface of the system.

### 2.3.3.1 Architecture Design

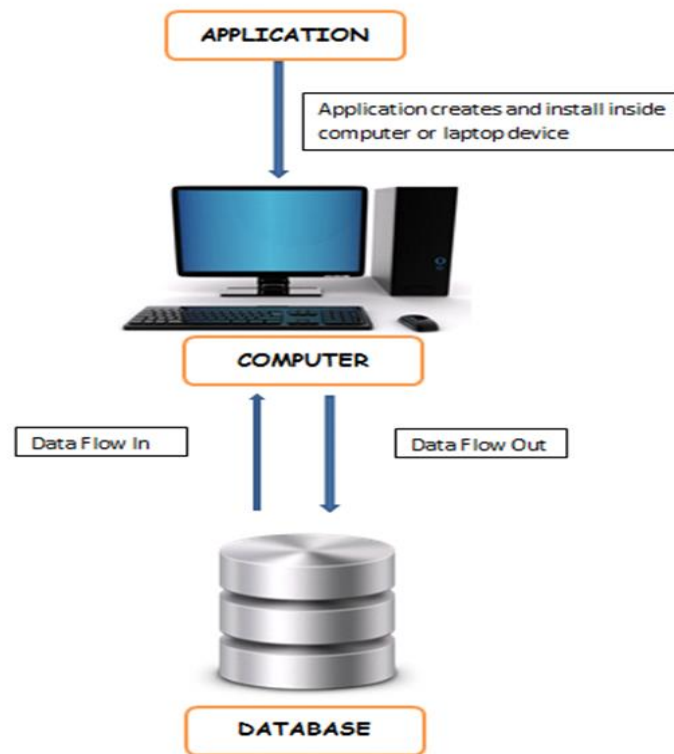


Figure 2.3 Architecture design of the system

### 2.3.3.2 User design

Data Flow Diagram (DFD) is a common tools used during this design phase of the System Development Life Cycle (SDLC). A DFD diagram is created to evaluate the flow of the data for the entire system and also its logical storage.

Firstly, the training Kits for JPJ, will have the administrator to login to the system. Then the record of the candidates' information will be send to the training kits for JPJ to enable the admin to look at the information that has been entered. So when the candidates use the Training Kits for JPJ system, candidates will be given the questions. After they choose the answer, the candidate will be told about the result either they correct the question or not.

Figure 2.4 shows the DFD diagram:

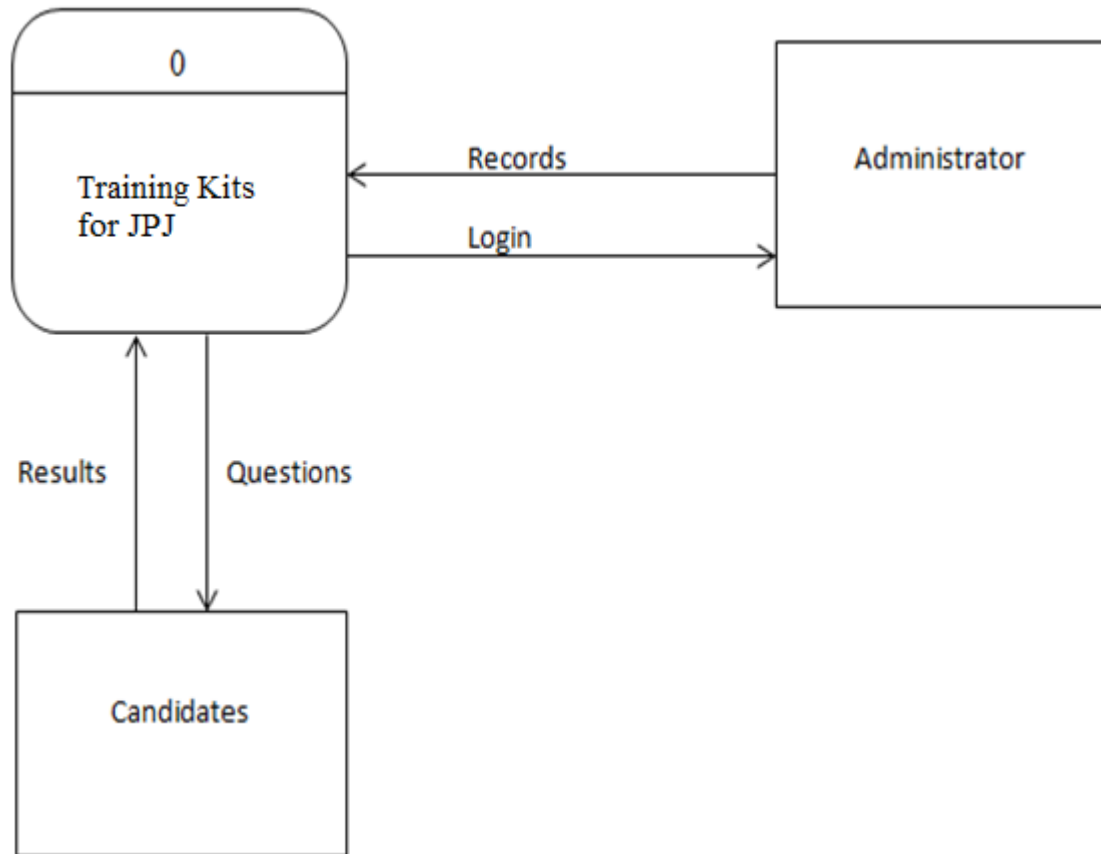


Figure 2.4 Data Flow Diagram (DFD)

### 2.3.4 Development

This is very important phases in the System Development Life Cycle (SDLC). This development phase is a realization of the technical specification or algorithm as a program, software component or other computer system. During this phase, the design will be converting into a complete system. Database will be created and tested also. Beside this, testing of the file, coding and compiling is very important too.

### 2.3.5 Implementation

During this phase, the Training kit for JPJ has been implementing into production environment. So the entire source code will be combining together and compile. Then if there is some problem or error that occurs, then have to try resolving those problems.

### 2.3.6 Operation and Maintenance

This is the last phase for this System Development Life Cycle (SDLC). During this phase, the system should be fully working. The administrator has to ensure that the system is working in the properly way and try to prevent any error occur in the system.

### 2.3.7 Material used

The hardware and software are the materials that require to be used for doing this Training Kits for JPJ system.

Table 2.1 Hardware Used in the system

Hardware	Specification	Purpose
Laptop	<ul style="list-style-type: none"> <li>• 800 MHz Intel Pentium III processor (or equivalent) and later</li> <li>• Windows 2000, Windows XP</li> <li>• 256 MB RAM (1 GB recommended to run more than one Studio 8 product simultaneously)</li> <li>• 1024 x 768, 16-bit display (32-bit recommended)</li> <li>• 1.8 GB available disk space</li> </ul>	To use to develop the system
Scanner	<p><b>Optical Resolution:</b> 6400 dpi  <b>Hardware Resolution:</b> 6400 x 9600 dpi  <b>Effective Pixels:</b> 54,400 x 74,880 (6400 dpi)  <b>Color Bit Depth:</b> 48-bit internal / external  <b>Grayscale Bit Depth:</b> 16-bit internal / external  <b>Optical Density:</b> 3.4 Dmax  <b>Maximum Scan Area:</b></p> <ul style="list-style-type: none"> <li>• 8.5" x 11.7"</li> <li>• TPU: 2.7" x 9.5"</li> </ul>	To use for scan the image that require to be used to the system

Table 2.2 Software used in the system

Microsoft Office Word 2010	Used to do the documentation
Microsoft Powerpoint 2010	Used to do presentation slide of the system
Microsoft Project 2010	Used to do the Gantt chart
Microsoft Visio 2010	Used to do the flow chart
Web Browser	Used to search information that require
Abode reader	Used to read those article and journal
Paint	Used to edit those photo
Adobe Photoshop	Used to edit photo needed
Macromedia Flash 8 pro	Used to create the interactive multimedia
Microsoft SQL Server 2008	Used to create database for the system
Microsoft Visual Basic 2010	Used to create the interface and login page

## 2.4 Design Description

### 2.4.1 Main page interface



Figure 2.5 Main page interfaces

Figure 2.5 shows that the main page interfaces for the Training Kits for JPJ. The user can click the exit button to close the application or they also can click on the login button to login to use the system.