

INTERACTIVE WEB SCIENCE STANDARD SIX



UNIVERSITI TEKNIKAL MALAYSIA MELAKA



INTERACTIVE WEB SCIENCE STANDARD SIX

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This report is submitted in partial fulfillment of the requirements for the Bachelor of  
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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2016

### DECLARATION

I hereby declare that this project report entitled

**INTERACTIVE WEB SCIENCE STANDARD SIX**

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

STUDENT :  Date: 21/8/2016

(NURUL AMIRAH BINTI MUHAMMAD YAZID)



I hereby declare that I have read this project report and found this project report is sufficient in term of the scope and quality for the award of Bachelor of Computer Science (Interactive Media) With Honours.

SUPERVISOR :  Date: 21/8/2016

(DR HAMZAH ASYRANI BIN SULAIMAN)

## DEDICATION

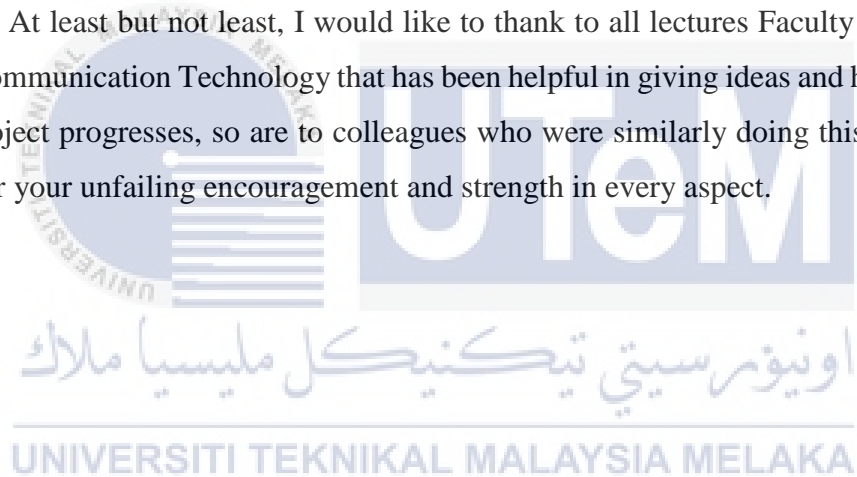
I dedicate this dedication to my beloved parents for their invaluable support regardless of physical or moral support to me in preparing this project.



## ACKNOWLEDGEMENTS

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## ABSTRACT

Interactive Web Science Standard 6 is an online learning module based on the Science subject of Year-6 primary school syllabus that allow students to access notes, learning experiments and doing exercises by using the computer or laptop. The purpose of developing this site is to help and assist the students understand science better through notes and exercises. This interactive website has mainly become useful in today learning environment as it quickly help the students to know more about their science subject in interactive mode. The main objectives for this project is to educate student in interactive way, providing additional components in assisting teacher in teaching the student, and also making the class learning environment becoming exciting and fun. In our project, we will use the methodology AGILE in which the development of this project will go through the stages of a planned well, so the result of multimedia products have a good quality and appropriate for use in learning. At the end, this project is expected to be useful for both teacher and student in assisting them in teaching and learning in interactive and fun way so it will helps them to quickly grasp and understand the meaning of each chapter in science subject based on the syllabus.

## ABSTRAK

*Interaktif Web Sains Tahun Enam adalah modul pembelajaran dalam talian berdasarkan subjek Sains Tahun 6 sukatan pelajaran sekolah rendah yang membolehkan pelajar sekolah rendah mengakses nota, melihat eksperimen dan membuat latihan menggunakan komputer atau komputer riba. Tujuan utama membangunkan laman web ini adalah untuk membantu dan memudahkan pelajar memahami sains dengan lebih baik melalui nota dan latihan. Interaktif web ini amat berguna dalam proses pembelajaran kerana ia mudah dan ringkas dalam membantu pelajar untuk mengetahui lebih lanjut mengenai subjek sains di dalam bentuk interaktif. Objektif utama projek ini adalah untuk mendidik pelajar dengan cara interaktif, menyediakan komponen tambahan dalam membantu guru dalam pengajaran pelajar dan juga membuat persekitaran pembelajaran kelas menjadi menarik dan menyeronokkan. Dalam projek kami, kami akan menggunakan metodologi AGILE di mana pembangunan projek ini akan melalui tahap-tahap yang terancang dengan baik agar produk multimedia yang dihasilkan mempunyai kualiti yang baik dan tepat untuk digunakan dalam pembelajaran. Pada akhirnya, projek ini dijangka akan berguna untuk guru dan pelajar dalam membantu mereka dalam pengajaran dan pembelajaran dengan cara interaktif dan menarik kerana ia akan membantu mereka untuk cepat memahami makna setiap bab dalam matapelajaran sains berdasarkan sukatan pelajaran sekolah.*



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## CHAPTER I

### INTRODUCTION

#### 1.0 Introduction



Nowadays, people are relying on technology to learn something. In current situation, people loved to use gadgets like computer, laptop, tablet and mobile devices rather than books. Besides that, it will make people easy to access online stuff. In computer or laptop has a browser that can view an interactive content like e-learning website. In addition, interactive website can be the book with more interactive way.

As primary school student, the main recommendation for students is learn through the books. With the advent of this technology, introduced interactive web will help the students learn from different angles and more effective. Then, this project is about “Interactive Web Science Standard 6“ will help the 12 years old student to be more understand about science subject in term them to face their examination. This project will be developed in *Bahasa Melayu* and it will based on science textbook syllabus.

Besides, this interactive web will help student to quickly grasp and understand the subject by doing exercises in interactive way rather than doing on the paper.

### 1.1 Problem Statement(s)

- The textbook have a lot of text. There are does not have an interactive look like animation, video or audio.
- Student do not understand the terms of subject in term of the language of the module is change.
- The current website on the browser, that have a lot of website that are provided the module in English languages. Other than that, in *Bahasa Melayu* version, there are only provided in blogspot and not a proper website.

### 1.2 Objective

- To study the potential of respective chapters science syllabus for standard 6 primary school for interactive web.
- To assess the level of understanding of science subject for the student in traditional learning method.
- To develop an interactive web based on specific chapter for standard 6 science syllabus by using html programming language.
- To provide testing and analysis for the created interactive web.

### 1.3 Scope

The project scope focused on two areas, the specific user and the content of interactive web. Each specified in section 1.3.1 and 1.3.2 for specific user and content of interactive web.

#### 1.3.1 Specified User

The target is for 12 years old student which is standard year 6 student. The content of the interactive web is literally similar to a science textbook, but it will be more interesting and easy for student to understand about the topic with the large images and experiment videos. The

#### 1.3.2 Content of Interactive Web

**Table 1.1 Content of Interactive Web**

| No | Learning Object   | Description  |
|----|-------------------|--|
| 1  | Animated Image    | Enable user to watch the .gif image with the explanations  |
| 2  | Interactive Image | Enable user to see and click the images, when click the image, it will pop up to show the large image to get clear vision. |

|   |       |  |
|---|-------|--|
| 3 | Video | Enable user to watch experiment videos that included in interactive web. The video will be edited after recording. |
|---|-------|--|

#### 1.4 Project Significance

Interactive web is an interactive application that can be view on browser like Chrome, Internet Explorer, and Mozilla Firefox and it can be used on computer or laptop. Student will get easily bored to learn and read the book that has a lot of text and a static picture. So, interactive web is the solution for the student to learn and read in a fun way.

Therefore, the interactive web is a platform for student to understand the subject in a different way. Furthermore, interactive web and textbook will be use a variety of media like the combination of text, animation, audio and video and by this combination, it will help to engage students in learning process. Engaging interactive elements give students a big opportunity to more understand and remember the syllabus.



#### 1.5 Conclusion

In this chapter, we will get the review and understanding the project. Therefore, this project will be developed based on the objective and also includes the contents of the project and the project significance. By using interactive web and textbook, it will make student easy to understand and remember the syllabus.

## CHAPTER II

### LITERATURE REVIEW AND PROJECT METHODOLOGY



#### 2.0 Literature Review

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This chapter will discuss about the literature review related to the development of “Interactive Web Science Standard 6” using the website platform viewed by browser on computer. The analysis of the existing project will be discuss in this chapter.

Literature review is a process about the information that publish in a particular subject area or research resources from books, journals, or articles. The literature review need to review the latest publications of research to provide advantages and disadvantages of the subject research.

## 2.1 Domain

This project is to develop an online module for Science subject in an interactive way. This interactive web is one of the learning process besides the textbooks. Education website is choose to introduce the user about science subject based on textbook in interactive way. There have two chapter selected which is chapter 3 and chapter 8 that contain notes with picture, video and exercise.

## 2.2 Existing System

1. First article “A theory for eLearning”:

According to Mark Nichol (2003) “A theory for eLearning” online learning can be describes the education that occurs only through Web does not consist of any physical learning material. It also used for eLearning tools in the Web as a sole medium for all student learning.

In this project, by using eLearning tools, the web-based can be one of the method in interactive way besides the books.

2. Second article “Interactive Multimedia-Based E-Learning: A Study of Effectiveness”

According to Dongsong Zhang (2005) the student divided into two group, which is student learning in traditional classroom instruction and online learning. The student

given the same amount of learning time, students in an interactive multimedia-based e-learning environment can achieved higher test scores than those in a traditional classroom.

In this project, this statement can be the advantages of the project to proceed in development.

### 2.2.1 Comparison of Existing System

In Malaysia, interactive web in reference materials still not widely use. This is because the developer is still not aware about the current situation, where we need changes in learning process and use a new method to attract student love the core subject.

#### **Example 1: Science Kids Fun Science & technology for kids!**

Science Kids Fun Science & technology for kids is a website to learn a science subject. This website is about science lessons for kids which is contains experiments, games, quizzes, project and lessons.



Figure 2.1 Main Page website

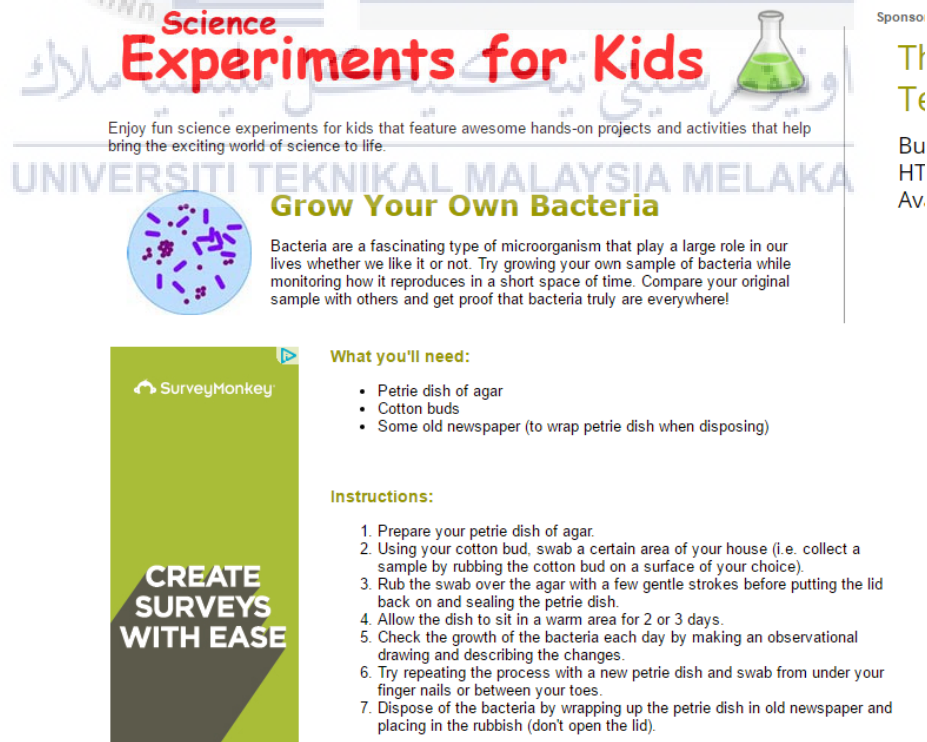


Figure 2.2 Screenshot of website content



## Characteristics

In this website, it just provided image and steps for the experiments. The content in this website is good but full of text with an image.

### Example 2: Website for certain subject (in English language)

This website is captured from (<http://interactivesites.weebly.com/science.html>) and this website have many subject and sub topic. The content full with icon and images. They have a learning game but the learning game is link from another site.

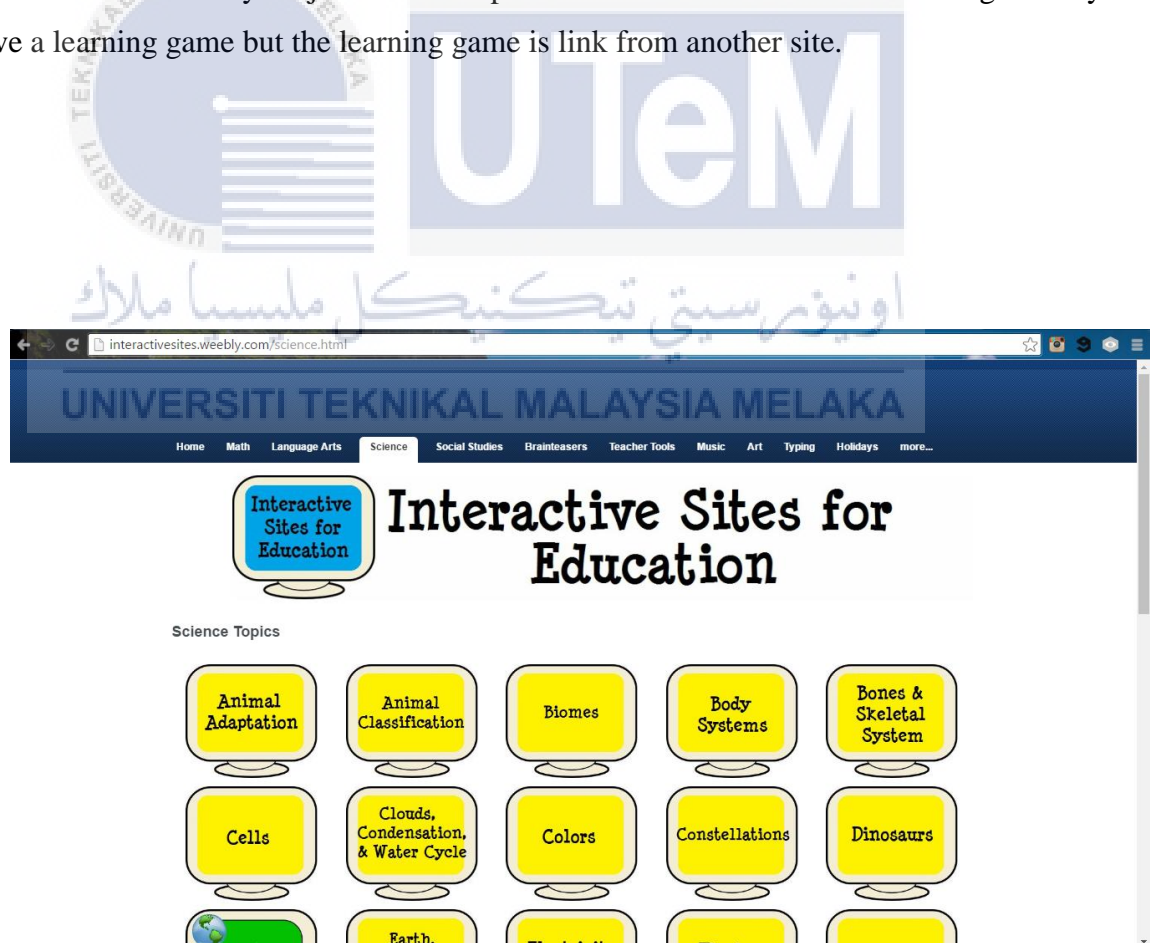


Figure 2.3 Screenshot of Interactive website

## Cells



Figure 2.4 Screenshot of game learning



In this website, writer use other website contain which is their learning game. If click on the learning game contain, it will not link back into previous page. This problem will make student not understand how to go the previous page.

### Example 3: Blogspot for subject science (*Bahasa Melayu* version)

This blogspot (<http://chuahlayyuen.blogspot.my/2012/11/mikroorganisma.html>) describe all concepts in simple explanations and example. Besides that, this blogspot is very crowded with sidebar advertisement. In this blogspot, they contains text, image, and video from youtube and exercise from exam paper.

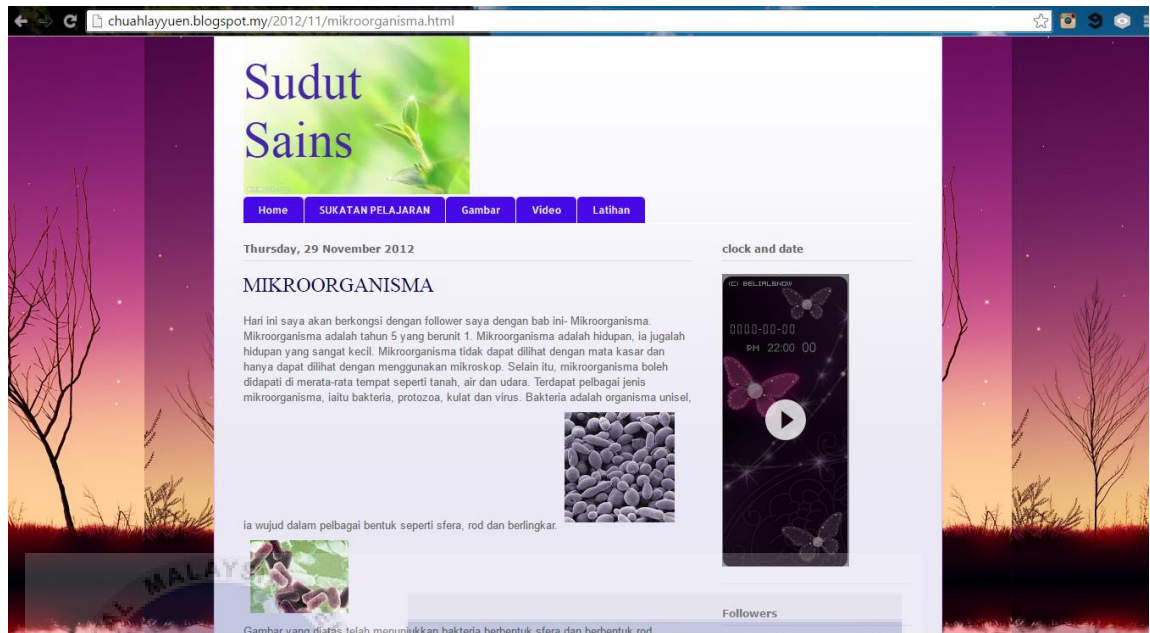


Figure 2.5 Screenshot of blogspot

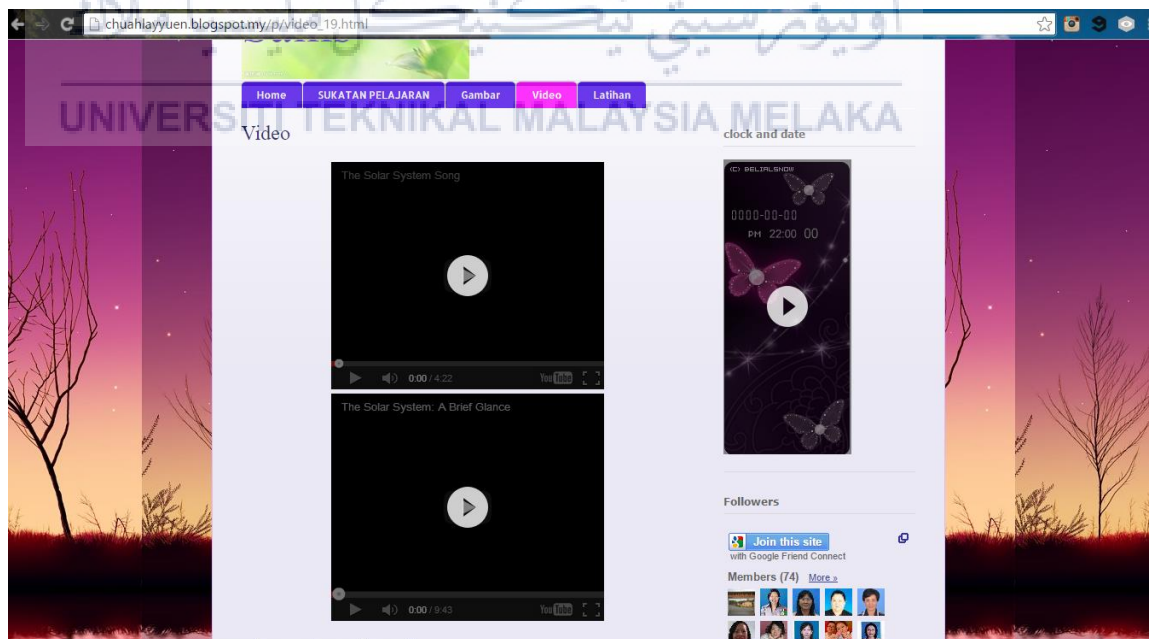


Figure 2.6 Screenshot of blogspot video page

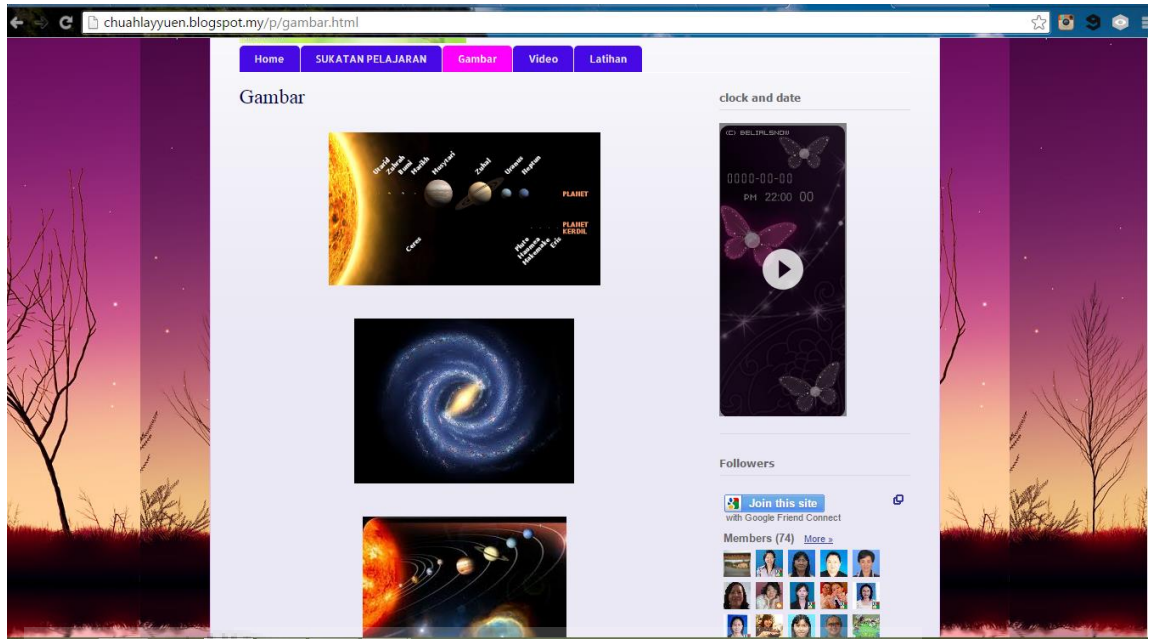


Figure 2.7 Screenshot of blogspot image page

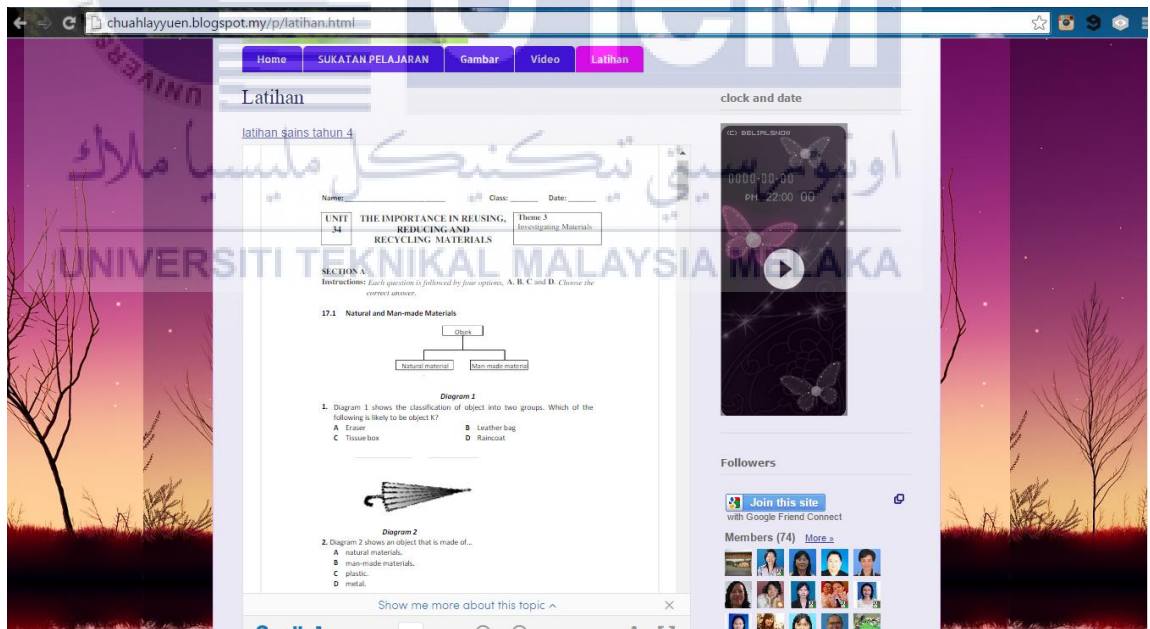





Figure 2.8 Screenshot of blogspot exercise page

## Feature

In this blogspot, all description about the topic provide in syllabus, but it too limited to explain. In addition, there have no interactive element provided.

**Table 2.1 Comparison Existing System**

| Existing Module            | Textbook  | Website(English)   | Blogspot (Bahasa Melayu)  |
|----------------------------|---|--|---|
| <b>Interface design</b>    |  |  |  |
| <b>Text</b>                | Yes   | Yes  | Yes   |
| <b>Audio</b>               | No  | No   | No  |
| <b>Video</b>               | No  | Yes  | Yes   |
| <b>Animation</b>           | No  | Yes  | No  |
| <b>Image</b>               | Yes   | Yes  | Yes   |
| <b>Interactive</b>         | Yes   | Yes  | No  |
| <b>Graphic appearance</b>  | No  | No   | No  |
| <b>Interface design</b>    | The background color is simple with text.   | The background simple with white background.                                       | The content of the site look crowded with the advertisement at the sidebar.         |
| <b>Multimedia elements</b> | Limited use of multimedia elements  | Have multimedia element such as video but it from another website                  | Has an element of multimedia like text, images and video.                           |

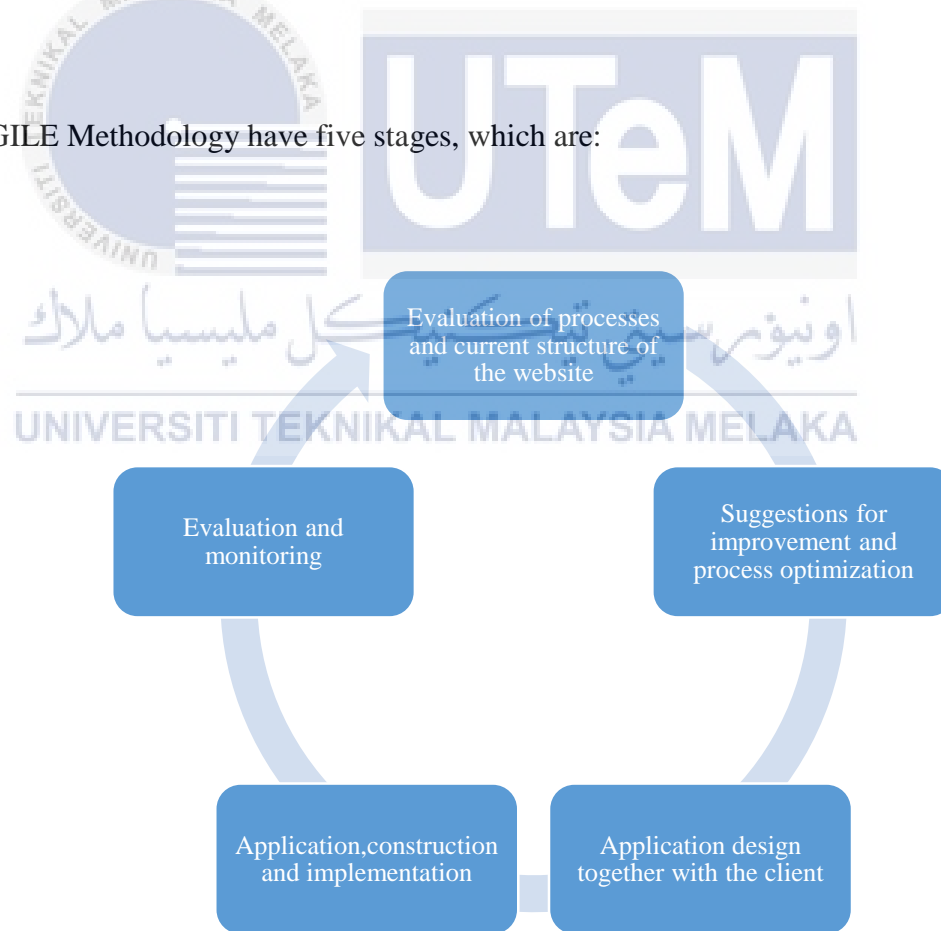


|                               |     |          |          |
|-------------------------------|-----|----------|----------|
| <b>Level of interactivity</b> | Low | Moderate | Moderate |
|-------------------------------|-----|----------|----------|

### 2.3 Project Methodology

The research design to identify the procedures by which the study population will be selected, how these subjects will be used to yield the required data and how the data be collected. There are a lot techniques are capable to compile and analyze data. To select a development methodology, a few studies have been done to find the suitable method for developing new learning object.

AGILE Methodology have five stages, which are:



**Figure 2.9 AGILE Methodology**

**i. Evaluation of processes and current structure of the website**

First step in this phase is begin with mapping the process to determine the starting point an idea that will be refine with the requirement of the project and the objectives as well. Thus, the purpose and types of the project to be developed is important to discuss first.

**ii. Suggestion for improvement and process optimization**

This stage to optimize a process with a right combination of technology. In this phase will discuss what software and tools will be used that suitable with current technology.

**iii. Application design together with client**

In this stage, we need to choose technologies and review options with the client. This phase is a process for gathering everything needed in this project. Regarding how the product will be design based on requirement.

**iv. Application, construction and implementation**

This stage need weekly delivery of developments for the end user to operate and request for changes. The end user is a part of the process of development and testing.

**v. Evaluation and monitoring**

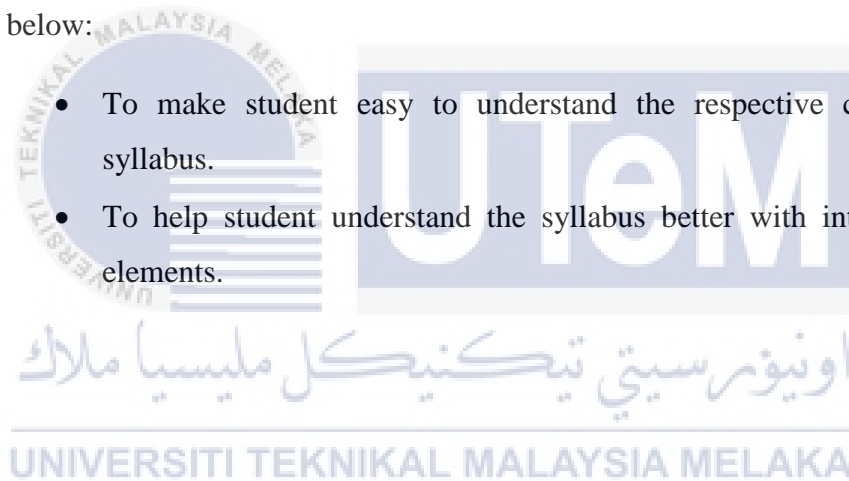
This stage determine the project, reports and other standard of measurement in order to monitor that the process is working as planned.

**2.3.1 Instructional Design**

**i. Educational Goals**

The goal for the module course “Interactive Web Science Standard 6” is shown below:

- To make student easy to understand the respective chapter science syllabus.
- To help student understand the syllabus better with interactive media elements.





ii. Flowchart

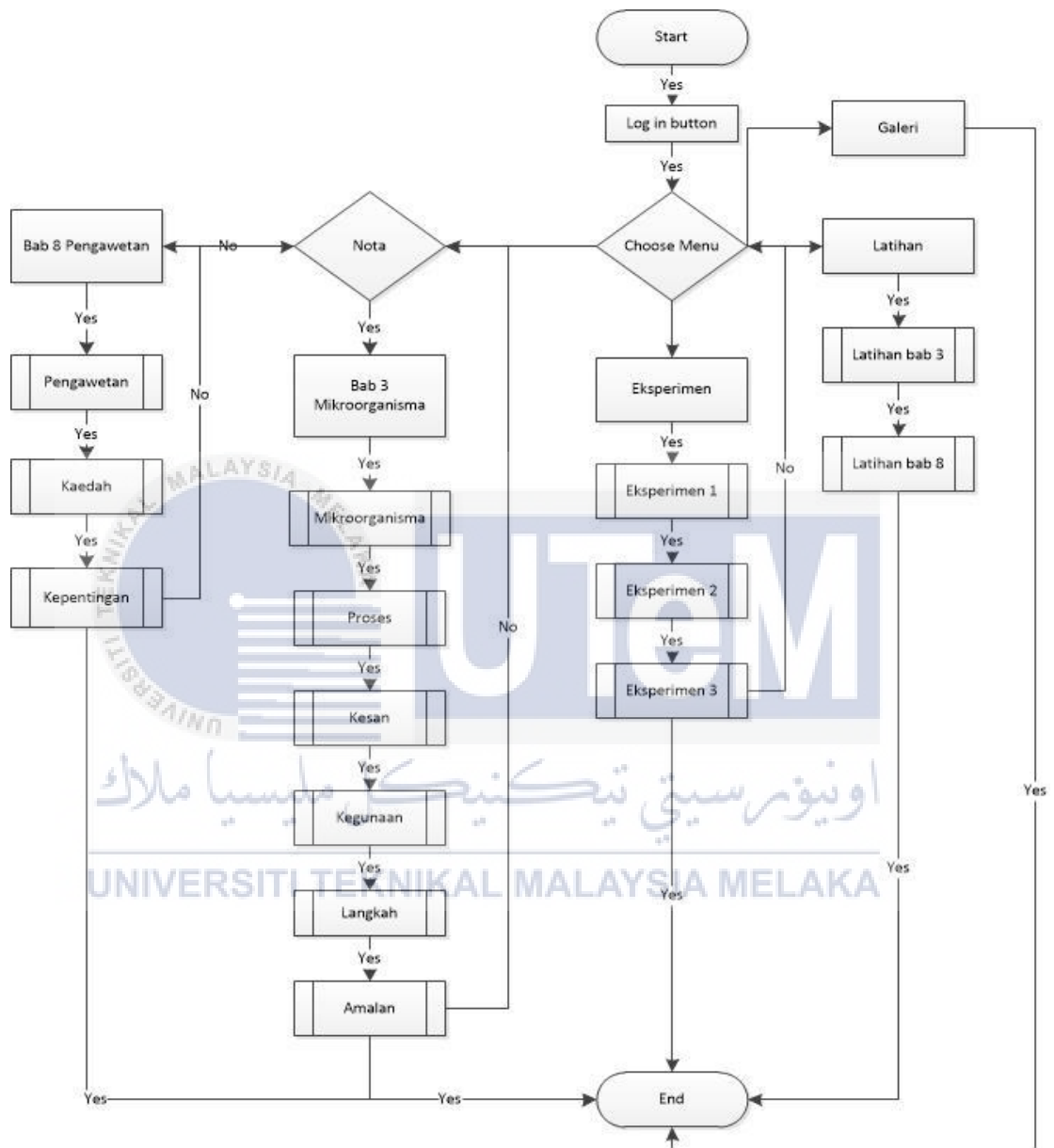


Figure 2.10 Flowchart of system

### **iii. Detailed Course Content**

There are four content and their sub content that will be developed in this project. Four content is in the form of notes, video, quiz, and interactive image. All the processes of this content will be illustrated to the real-life activities to make the user more understand.

### **iv. Metaphor**

There are lot kind of multimedia elements that will be used in this interactive web that will help users to be more understand about the syllabus. This module will used a multiple of multimedia elements such as images, video, and text. The design of interactive web is simple and modern with color of content suitable for primary school students. By using a moving picture will attract the user to explore the web and by doing this, users will be more understand and enjoy to learn.

## **2.4 Project Requirement**

Project requirement explains about the use of hardware and software requirements, which is will be used to build up this interactive web.

### 2.4.1 Software Requirement

Below state the software development tools that will be used in the process of developing content of development:

- Adobe Dreamweaver CS6
- Adobe Illustrator CS6
- Adobe Photoshop CS6
- Adobe Premiere Pro CS6
- Adobe Captivate 9
- Microsoft Office 2013
- Microsoft PowerPoint 2013

### 2.4.2 Hardware Requirement

#### Computer

- ACER ASPIRE 4750G
- Processor: 2.3GHz Intel Core i5-2410M dual-core
- Ram: 6.00GB DDR3: 64-Bits OS
- Nvidia GeForce GT 520M discrete graphics
- Window 8

#### Camera

- Olympus PEN
- Fujifilm FinePix AV200
- Sony Xperia M2 Smartphone

## Other

- Printer Canon Pixma Ink Efficient E510

**Table 2.2 Specification of hardware**

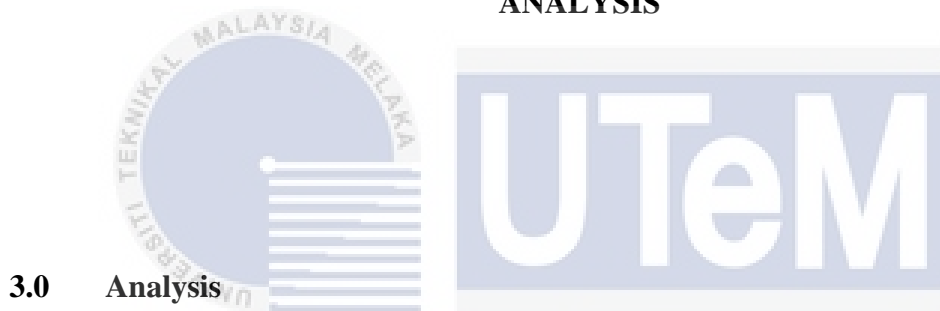
| Hardware       | Specification                   |
|----------------|---------------------------------|
| Printer        | Print the documentation results |
| Processor      | 2.3GHz dual core                |
| Type of System | 64-bit operating system         |
| Hard Disk      | For storing data                |

## 2.5 Conclusion

The literature review show to us the importance of review literature in development process and making the ideas of this interactive web. By doing this literature review, the comparison can be made between existing module and project that available on marketing. It also show that the user need a changes and up to date version on learning. The next chapter will be discuss about the analysis that have made before developing the development content.

## CHAPTER III

### ANALYSIS



#### 3.0 Analysis

This chapter will discuss about the process in analysis phase. This chapter provides a general idea of the process that occur in analysis phase. In this requirement, the system should be defined in more detail as in system inputs, processes, products and interfaces. The important of this phase is to decide which function is more suitable and how it works. All the data and information will be implement from the resources like books and website.

To develop the project, it needs to identify the requirements for the software, hardware and the user. The software requirement for this project are Adobe Dreamweaver CS6, Adobe Illustrator CS6, Adobe Photoshop CS6, Adobe Premiere ProCS6, Adobe Captivate 9, Microsoft Office 2013, and Microsoft PowerPoint 2013. Whereas the hardware requirement which are laptop, camera, printer and earphone.

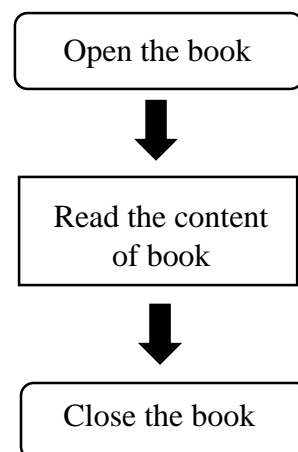
### 3.1 Current Scenario Analysis

This is a process to analyze the possible outcome by study the existed system or current scenario. All the information that gathered from this analysis to figure out the strength and weakness of the current system. When all information has been collected, the information will be implement into a new proposed project and this situation will enhance the quality of the proposed project.

#### a) “Sains Tahun 6 Sekolah Kebangsaan” in TextBook Module

As mentioned before in Chapter II, this textbook do not involve in any device technology. It is a printed papers that allow the students to read the content on it. “Sains Tahun 6 Sekolah Kebangsaan” is a textbook that published by Dewan Bahasa dan Pustaka(DBP). This book about all science subject syllabus standard six.

In this textbook have an illustration to explain about the content, but it too much illustration and text in certain page that not suitable. Each pages contains the conversation and explanation on it.



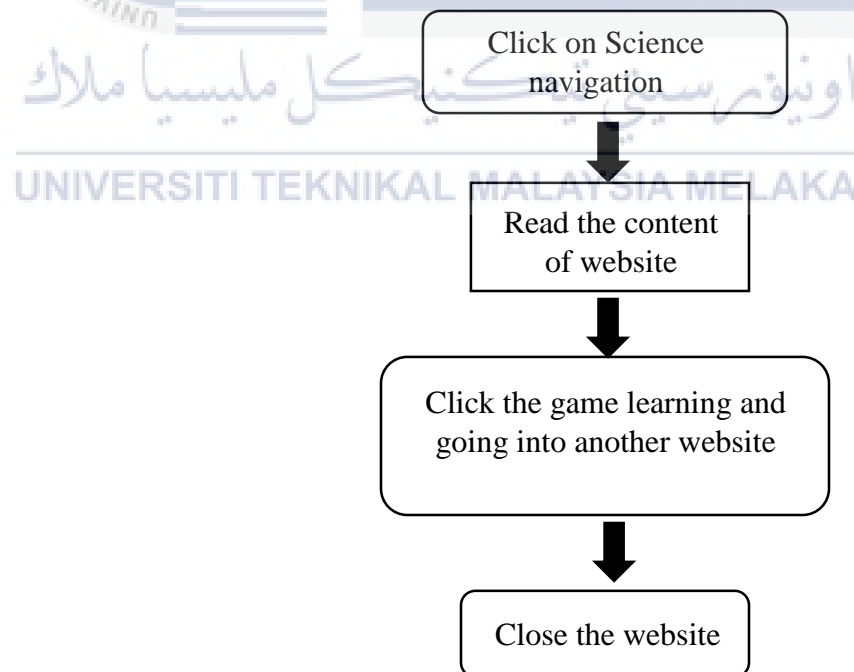
**Figure 3.1 Flowchart of Textbook**

**Table 3.1 Advantages and disadvantages of “Sains” Textbook**

| Advantages  | Disadvantages  |
|---|--|
| <ul style="list-style-type: none"> <li>• Explanations about the topic is detail.</li> </ul> | <ul style="list-style-type: none"> <li>• This book contains illustration and text not suitable on certain page.</li> <li>• Colorful</li> </ul> |

**b) Website for certain subject (in English language)**

In this website contains icon, image and game learning. If click on game learning it will link into other website and it difficult to going back into previous page. Besides that, this website do not same on school syllabus.

**Figure 3.2 Flowchart of Interactive website (English language)**

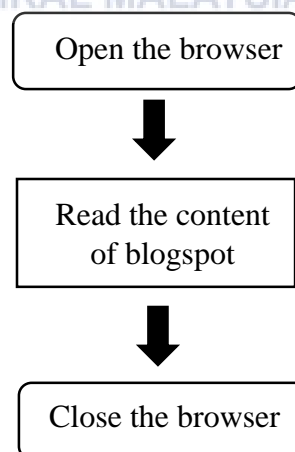
**Table 3.2 Advantages and disadvantages of interactive web (English language)**

| Advantages   | Disadvantages   |
|--|---|
| <ul style="list-style-type: none"> <li>• Have some interactive elements</li> </ul> | <ul style="list-style-type: none"> <li>• Interactive element from other website.</li> <li>• This website do not follow syllabus.</li> </ul> |

**c) Blogspot for subject science (*Bahasa Melayu* version)**

This blogspot explains about the each topic on syllabus with a simple way. Besides that, this blogspot look crowded with advertisement on the sidebar of the blogspot. In this blogspot have explanation, images, example of exam paper and video on Youtube.

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**Figure 3.3 Flowchart of blogspot**



**Table 3.3 Advantages and disadvantages of blogspot**

| Advantages   | Disadvantages   |
|--|---|
| <ul style="list-style-type: none"> <li>• Explanations in simple way</li> <li>• Have images and videos</li> </ul> | <ul style="list-style-type: none"> <li>• Have an advertisement on the sidebar page.</li> <li>• Interactive element less.</li> </ul> |

### 3.2 Requirement Analysis

Requirement analysis is a process of understanding user needs and their expectation from the application they used. Besides that, it is about description of how a system or application should react and it also helps to ensure the user needs towards the product.

#### 3.2.1 Project Requirement

##### a) Need Analysis

Need analysis is to specify the reason to develop the latest learning object which is interactive web. The functional requirement are relates to the learning development process the information that need to have and show how it is perform in the right way.

Thus, this project is developed to make sure the user easy to understand the syllabus, and its functional requirement relates directly to a process has to perform or information that needs to perform.

## b) User Analysis

The most important in user analysis phase is deciding the multimedia elements that need to be used in interactive web to fulfil the structure project. Need to consider what material there is no longer effective to use. In this analysis must be complete to build the flow of project and need meet with the user's requirement.

This interactive web is developing for the user to make reference in an interactive way and the information will follow the syllabus.

## c) Technical Analysis

The development of learning module produces a lot of effort and time. One of the multimedia elements that will be use is a video. The video that will be developed must meet the user requirement.

There have two topic selected and have three experiments video in interactive web. Interactive web is a website on browser that viewed by user on computer or laptop. This interactive web will be able to use as a new education learning technique.

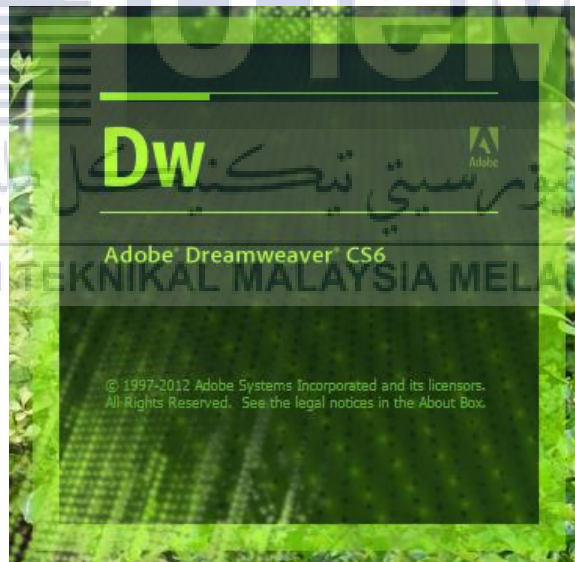
#### d) Resource Analysis

The module of this project will covers two chapters with nine sub-topic of science textbook. All elements of content are developed in this project are based on “Sains Tahun 6 Sekolah Kebangsaan” in Textbook syllabus. All the picture and video are taken by own.

### 3.2.2 Software Requirement

#### i. Adobe Dreamweaver CS6

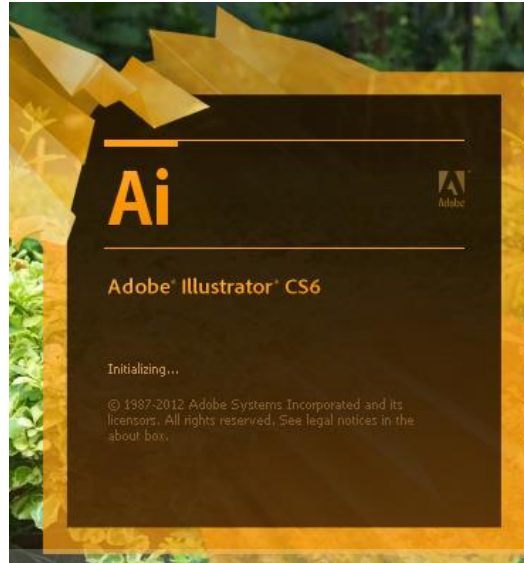
Adobe Dreamweaver is a software to develop a website by using HTML and CSS.



**Figure 3.4 Adobe Dreamweaver CS6**

#### ii. Adobe Illustrator CS6

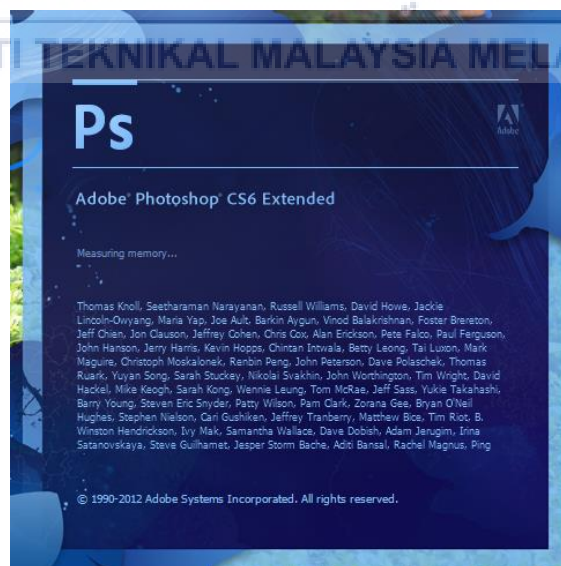
This software used to create or design the graphic part inside the interactive web. The graphic part is vector images, illustration image and etc.



**Figure 3.5 Adobe Illustrator CS6**

### iii. Adobe Photoshop CS6

Adobe Photoshop is a graphic editing software. This application is use to edit the bitmap picture that will be used in interactive web.



**Figure 3.6 Adobe Photoshop CS6**

**iv. Adobe Premiere Pro CS6**

Adobe Premiere Pro is a video editing software application based on timeline. This software will be used to edit the experiment part.



**Figure 3.7 Adobe Premiere CS6**

**v. Adobe Captivate 9**

Adobe Captivate is a software application that can generate a quiz slot for the quiz page.



**Figure 3.8 Adobe Captivate 9**

### 3.2.3 Hardware Requirement

**Table 3.4 Hardware Requirement**

| Hardware         | Description   |
|------------------|---|
| Laptop           | This hardware is used to make and develop all type of multimedia elements.                                      |
| Mouse            | Mouse is needed to make work easier rather than use the mouse pad while doing tracing in Adobe Illustrator CS6. |
| Camera           | This device is used for capture image and also record video that will be used in interactive web.               |
| External Hardisk | This hardware used for backup all file of the project.  |
| Printer          | Printer is needed to print out the documentation like report.   |

### 3.3 Project Schedule and Milestones

The milestones will be describing the project schedule and the activities that involved during the project development.

**Table 3.5 Details description and milestones**

| No. | Activity                                    | Roles                  | Start Date     | End Date       | Result  |
|-----|---|------------------------|----------------|----------------|---|
| 1   | Propose Supervisor                          | Student                | 20 Dec<br>2015 | 25 Dec<br>2015 | Propose preferred supervisor                          |
| 2   | PSM proposal                                | Student                | 25 Dec<br>2015 | 31 Dec<br>2015 | Submitted proposal                                    |
| 3   | Redo PSM proposal                           | Student                | 25 Dec<br>2015 | 31 Dec<br>2015 | Acceptance or rejected                                |
| 4   | Proposal defend and submit the proposal     | Student                | 22 Feb<br>2016 | 26 Feb<br>2016 | Supervisor and AJK PSM check the proposal             |
| 5   | Proposal correction and improvement         | Student                | 29 Feb<br>2016 | 4 Mar<br>2016  | Make correction for proposal                          |
| 6   | Develop product and submit Chapter 1 and 2  | Student and supervisor | 7 Mar 2016     | 11 Mar<br>2016 | Start develop the project with guided from supervisor |
| 7   | Developing project and redo Chapter 1 and 2 | Student                | 14 Mar<br>2016 | 18 Mar<br>2016 | Improve the product                                   |

|    |   |                                   |               |               |                                     |
|----|---|-----------------------------------|---------------|---------------|-------------------------------------|
| 8  | Product demonstration and Chapter 3 and 4 | Student and evaluator             | 28 April 2016 | 28 April 2016 | Presenting the progress             |
| 9  | Final presentation                        | Student, supervisor and evaluator | 8 June 2016   | 8 June 2016   | Supervisor and evaluator give marks |
| 10 | Submit final report                       | Student                           | 10 June 2016  | 12 June 2016  | Finish PSM 1                        |

### 3.4 Conclusion

Analysis phase is a major phase to develop a product. In analysis, the advantages and disadvantages of the existing product can be taken out from the comparison among them. By recognizing the disadvantages, it will help to develop and improve the product that will be developed. This is good to make the user satisfied with the new product that will be developed. Thus, the right software and hardware are the important role to help in developing the product that is “Interactive Web Science Standard 6”.



## CHAPTER IV



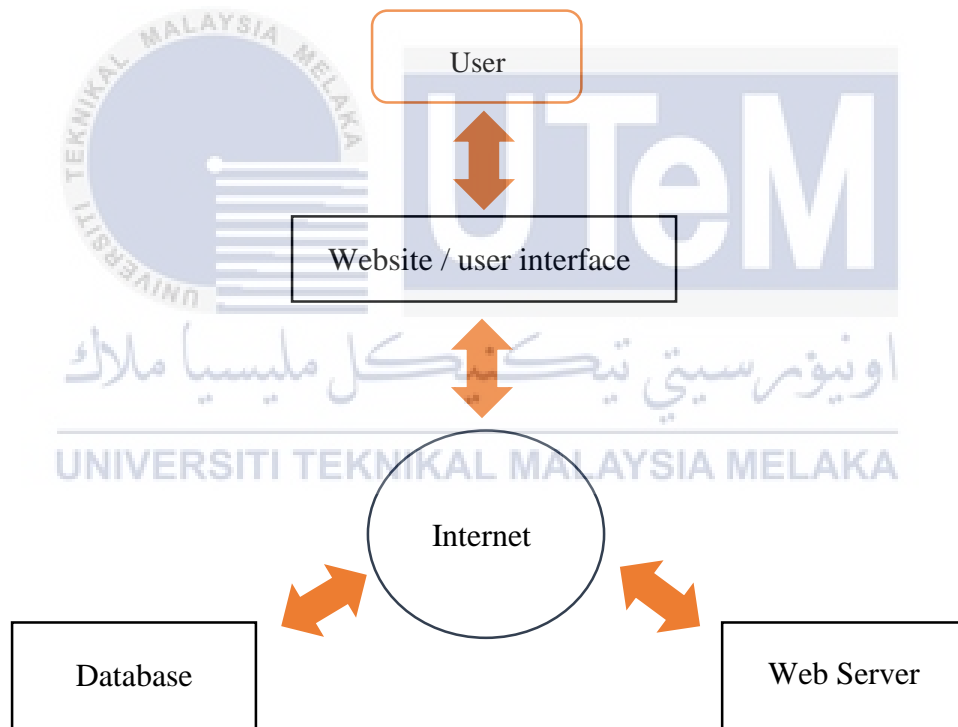
4.0 Design

This chapter is for design phase and will be elaborate briefly by used the entire requirement was gathered on the previous chapter.

Design phase is important in development of learning object, that it will lead the developer to design the project based on the information gathered. Design architecture will state the major flow need to follow by the developer. Besides that, Preliminary design will describe about the interface of the products referring to the storyboard. Each elements must be related to each other and detailed in term of images, text, audio, and video because they are needed during the assembly of this product.

#### 4.1 Design Architecture

Design architecture show the basic flow for interactive web and how it work. This interactive web be able used by using computer and laptop. All user can access the module because does not need to sign up first.

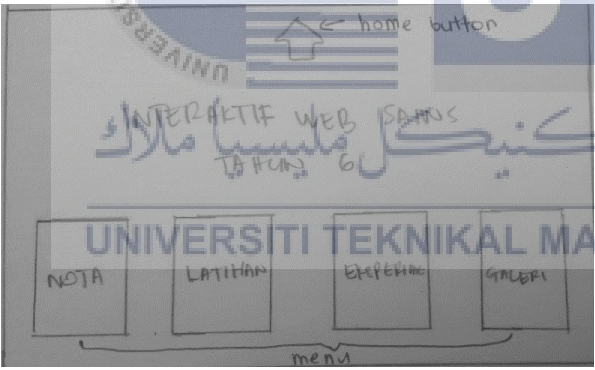
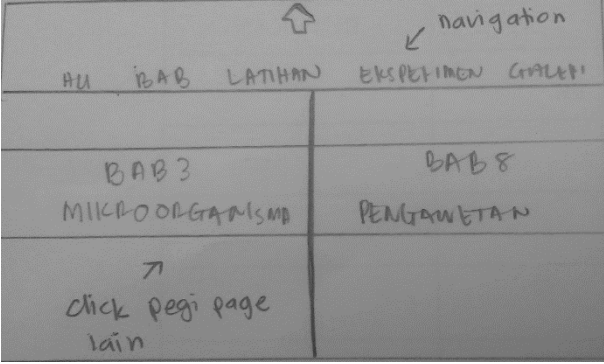


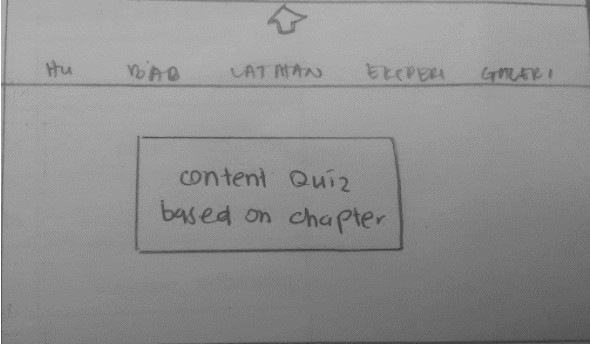
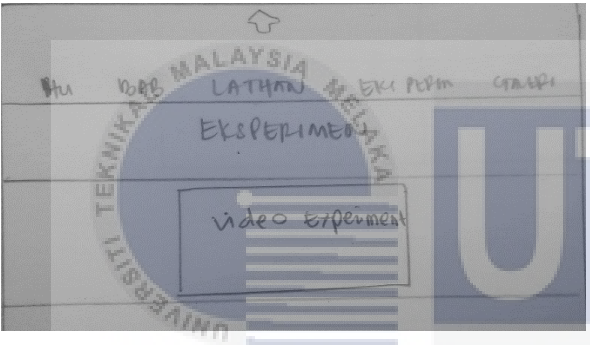
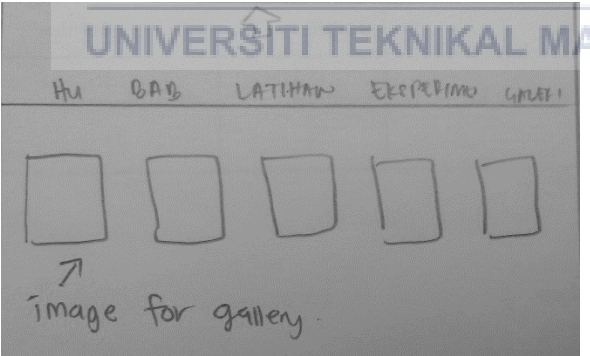
**Figure 4.1 Website design architecture**

## 4.2 Preliminary Design

Preliminary design is stage where general design concepts were determined. In this project development, the preliminary design is separated into few parts which is storyboard design, color design and topic layout.

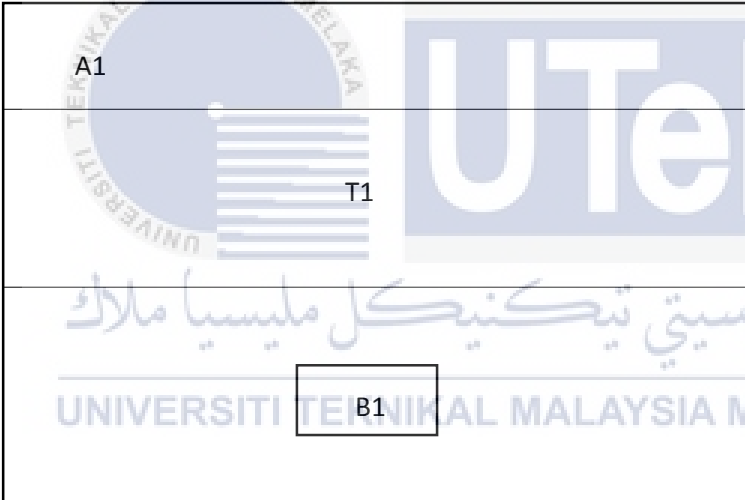
### 4.2.1 Storyboard Design

| Menu   | Descriptions                             | Access      |
|--|--|-------------|
| <p>Halaman Utama</p>  | <p>Show the main menu on the screen.</p> | <p>User</p> |
| <p>Nota</p>           | <p>Show the main topic selected.</p>     | <p>User</p> |

|  |   |             |
|--|---|-------------|
| <p>Latihan</p>      | <p>Show the quiz page each topic provided.</p>                            | <p>User</p> |
| <p>Eksperimen</p>  | <p>Show the experiment video that provided step by step instructions.</p> | <p>User</p> |
| <p>Galeri</p>     | <p>Show the combination of picture that have in interactive web.</p>      | <p>User</p> |

**Screen interface:**

|         |  |          |                                    |
|---------|--|----------|------------------------------------|
| SUBJECT | PSM                                      | DESIGNER | NURUL AMIRAH BT<br>MUHAMMAD YAZIID |
| PROJECT | INTERACTIVE<br>WEB SCIENCE<br>STANDARD 6 | PAGE     | 1 starter.html                     |

|   |  |
|---|--|
|  | <p><u>Interaction</u></p> <ol style="list-style-type: none"> <li>1. This page is main page of interactive web.</li> <li>2. User need click B1 to log in the page.</li> </ol> <p><u>Graphic</u></p> <p>A1=Background: white</p> <p><u>Title</u></p> <p>T1: Interaktif Web Sains Tahun 6</p> <p><u>Button</u></p> <p>B1: Log in button</p> |
|---|--|

**Figure 4.2 Home interface**

|         |  |          |                                    |
|---------|--|----------|------------------------------------|
| SUBJECT | PSM                                      | DESIGNER | NURUL AMIRAH BT<br>MUHAMMAD YAZIID |
| PROJECT | INTERACTIVE<br>WEB SCIENCE<br>STANDARD 6 | PAGE     | 2 pagedepan.html                   |

The screenshot shows a web page layout. At the top left is a box labeled 'A1'. At the top right is a box labeled 'B1'. In the center is a large logo for 'UTeM' (Universiti Teknikal Malaysia Melaka) with the text 'T1' next to it. Below the logo are four buttons labeled 'M1', 'M2', 'M3', and 'M4'.

Interaction

1. This page is main page of menu
2. User can click any button to explore.

Graphic

A1=Background: image

Title

T1: Interaktif Web Sains Tahun 6

Menu

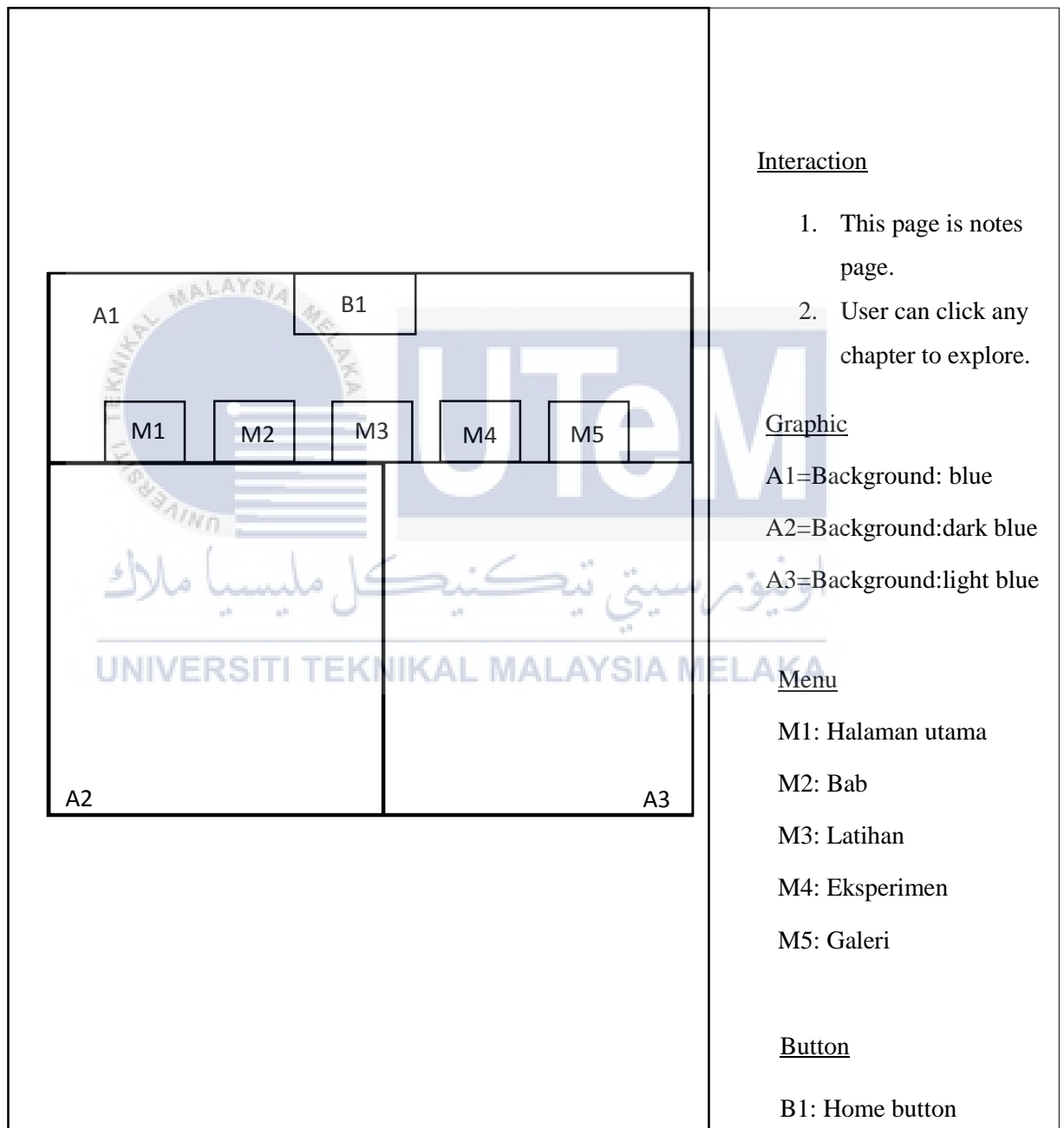
M1: Nota  
M2: Latihan  
M3: Eksperimen  
M4: Galeri

Button

B1: Home button

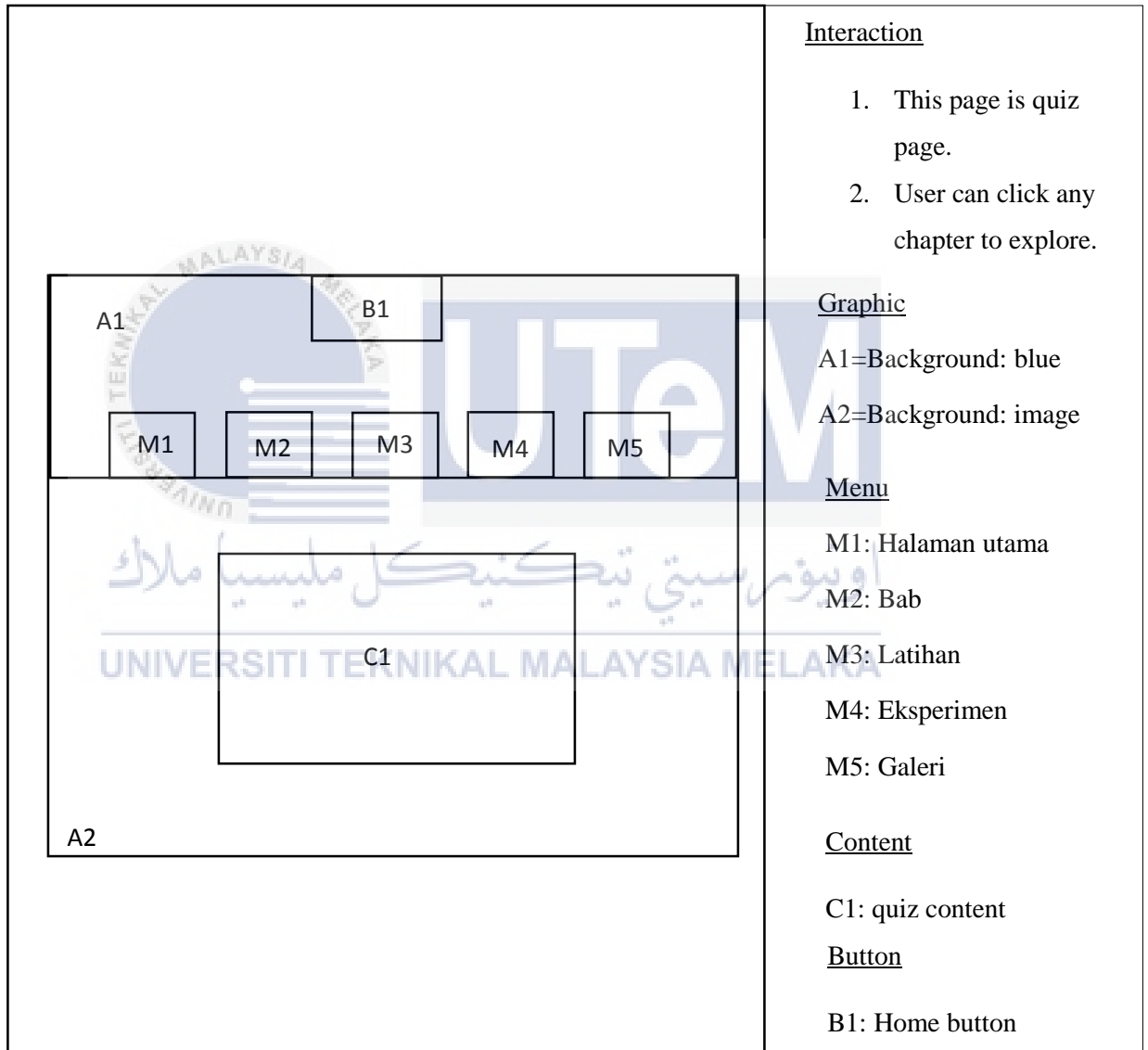
**Figure 4.3 Menu interface**

|         |                                      |          |                                    |
|---------|--------------------------------------|----------|------------------------------------|
| SUBJECT | PSM                                  | DESIGNER | NURUL AMIRAH BT<br>MUHAMMAD YAZIID |
| PROJECT | INTERACTIVE<br>SCIENCE<br>STANDARD 6 | PAGE     | 4 nota.html                        |



**Figure 4.4 Chapter interface**

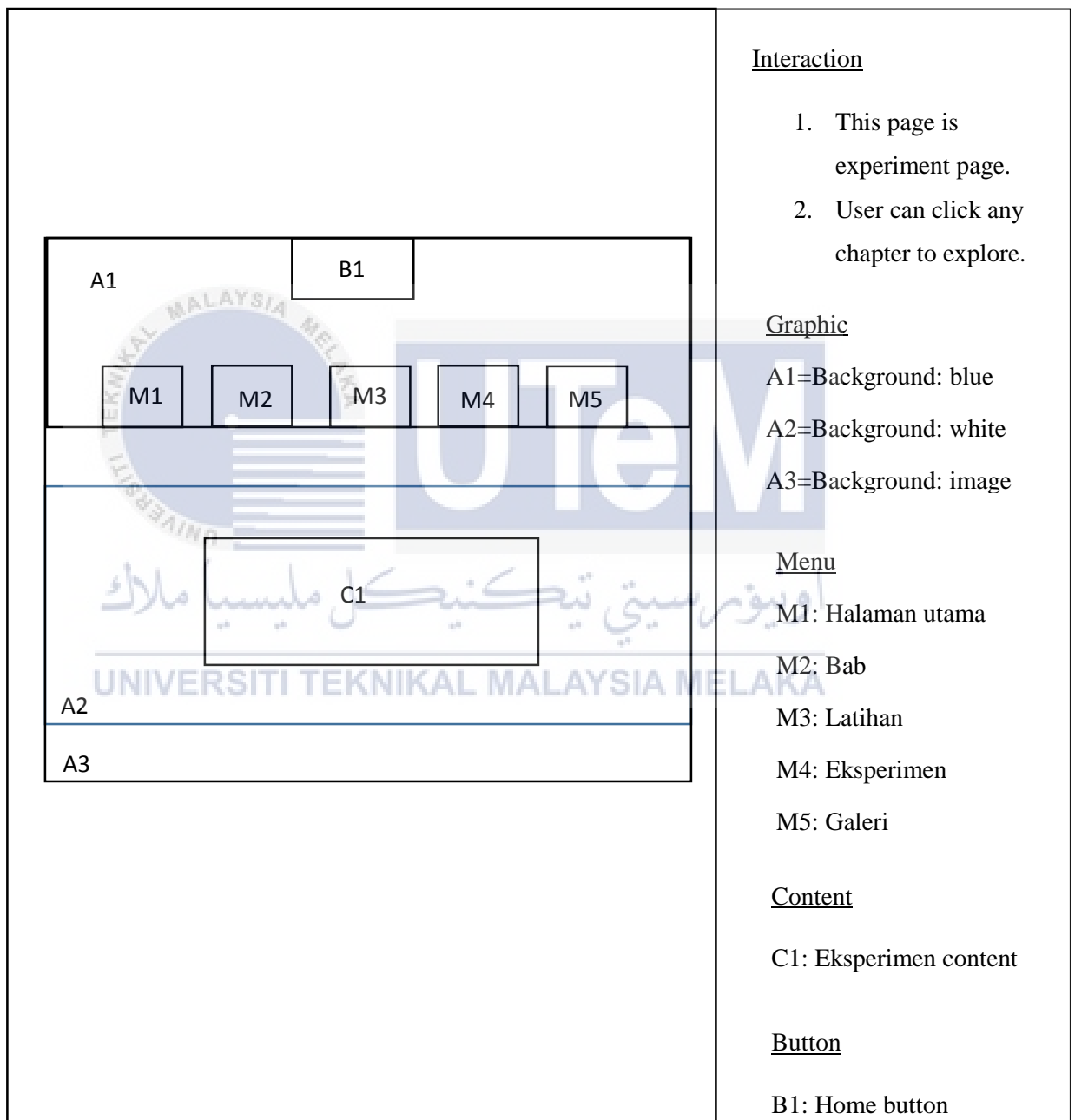
|         |  |          |                                    |
|---------|--|----------|------------------------------------|
| SUBJECT | PSM                                      | DESIGNER | NURUL AMIRAH BT<br>MUHAMMAD YAZIID |
| PROJECT | INTERACTIVE<br>WEB SCIENCE<br>STANDARD 6 | PAGE     | 5 kuiz.html                        |



**Figure 4.5 Exercise interface**

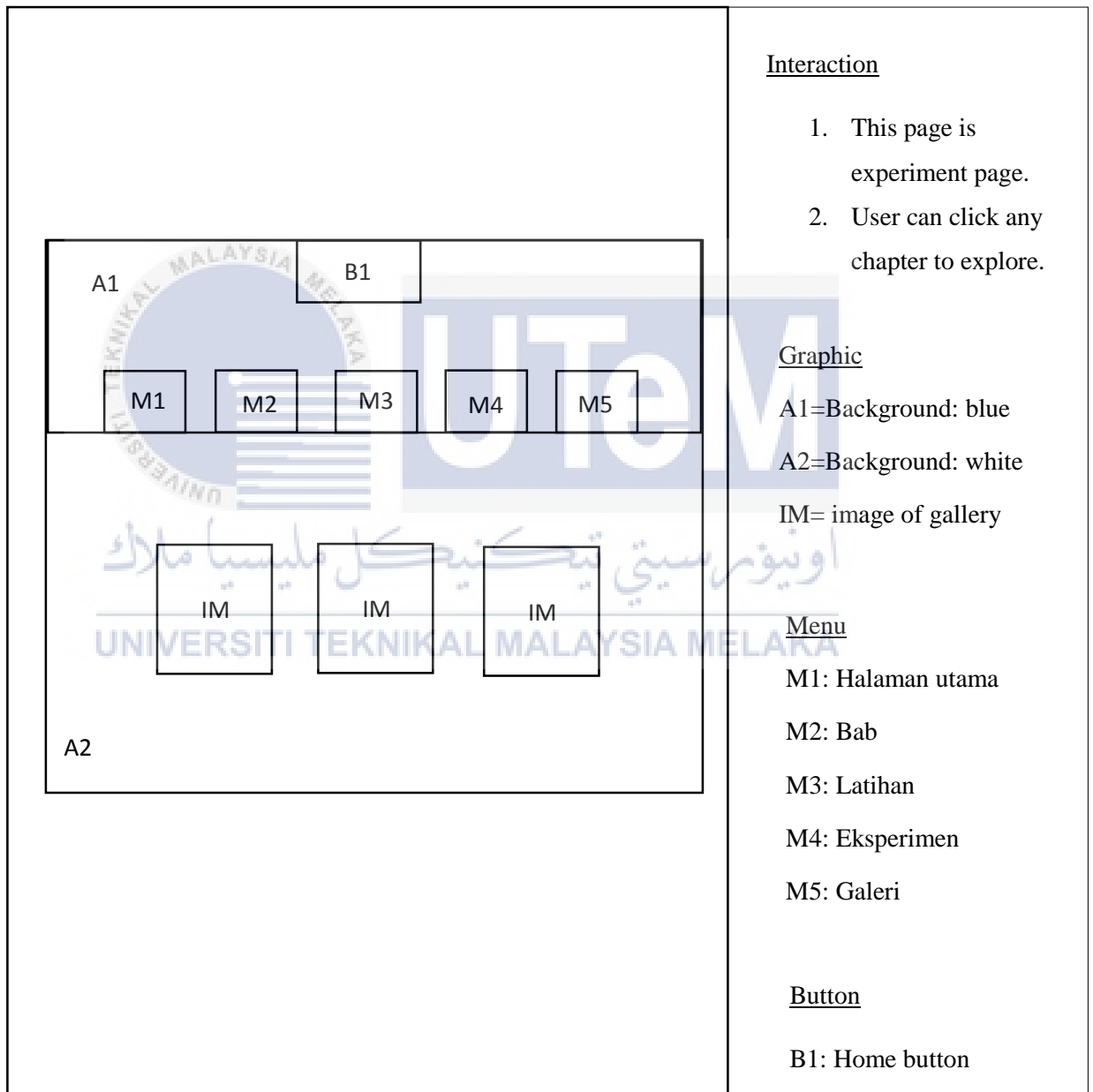


|         |  |          |                                    |
|---------|--|----------|------------------------------------|
| SUBJECT | PSM                                      | DESIGNER | NURUL AMIRAH BT<br>MUHAMMAD YAZIID |
| PROJECT | INTERACTIVE<br>WEB SCIENCE<br>STANDARD 6 | PAGE     | 6 eksperimen.html                  |



**Figure 4.6 Experiment interface**

|         |  |          |                                    |
|---------|--|----------|------------------------------------|
| SUBJECT | PSM                                      | DESIGNER | NURUL AMIRAH BT<br>MUHAMMAD YAZIID |
| PROJECT | INTERACTIVE<br>WEB SCIENCE<br>STANDARD 6 | PAGE     | 7 galeri.html                      |



**Figure 4.7 Gallery interface**

### 4.2.2 Metaphor

The image and graphic used in interactive web are simple and colorful suitable for primary student. This is because, to make user easily to read the content. Besides, the user love to learn something through images and videos. Thus, the color design is an important part in this development content process. A colorful images can attract the user to be more enjoy learning the content. The figure 4.7 and Figure 4.8 below show an example of using color in interactive web.

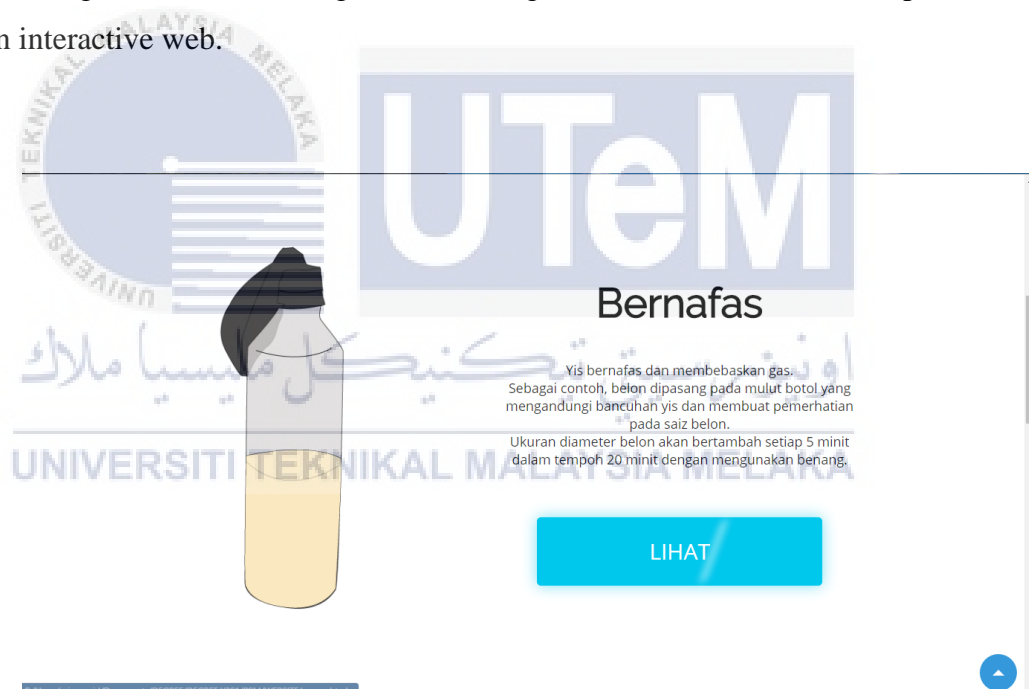


Figure 4.8 Example of learning content



**Figure 4.9 Example of color content**

### 4.2.3 Template Design

The main page of topic selected (Chapter 3 and Chapter 8) will be use same design to make user easily to differentiate main page topic and sub-topic. Figure 4.9 below will shows the example of template design.



**Figure 4.10 Example of template design**

### 4.3 Summary


Design phase is the one of the significant progress during the development of interactive web. Everything that was discussed before in this phase is development of storyboard design, input and output design and by doing this design phase, it was conducted and was concerted.



## CHAPTER V

### IMPLEMENTATION

#### 5.0 Introduction



Through the previous chapter, the design phase, design architecture, storyboards and all multimedia design elements that are used in the development of “Interactive Web Science Standard 6” has been discussed, planned and produced. All this process was done following the flow.

In this phase, the design is being modified and customized to meet the needs. The one of important issues is how much effective this website were delivered to the user with all of the basic multimedia elements were added in this project such as texts, graphic, images and video.

In this chapter will be discuss the related media creation, media integration, product configuration management and implementation status.

## 5.1 Media Creation

All kind of basic multimedia elements were used in favor of developing the interactive website. These multimedia elements that have been produced are intended to provide the users with a new learning environment. This is list of multimedia element used in developed interactive website.

- Production of text
- Production of graphic
- Production of video

### 5.1.1 Production of Text

During the development of website, various type of text was used to make the product be more appealing and looks interactive rather than other material. By using this interactive style, with suitable font and color, the integration of interactive website will be more fun to read and learn.

There are two type of text that have been used in the development of interactive website such as Open Sans and Raleway. This font was being chosen and used because these fonts are suitable for screen and looks modern and simple. It can make the user feels comfortable to read the sentence as these font simple and not decorative. Each of the web page used the same font to make to standardize the website font. It same as font size is used 18pt for the body font size, 20pt for each font title.

**Table 5.1 Text production in all website page**

| Interface       | Type font            | Font color     | Font size    | Font style | Example        |
|-----------------|----------------------|----------------|--------------|------------|----------------|
| Content website | Open Sans<br>Raleway | White<br>Black | 18pt<br>78pt | Normal     | MIKROORGANISMA |
| Video           | Arial                | White          | 18pt         | Narrow     | Font           |
| Quiz            | Trebuchet MS         | White          | 32pt         | Regular    | Font           |
| Image           | Arial                | White<br>Black | 18pt         | Regular    | Font           |



**Figure 5.1 Example text using Raleway font**

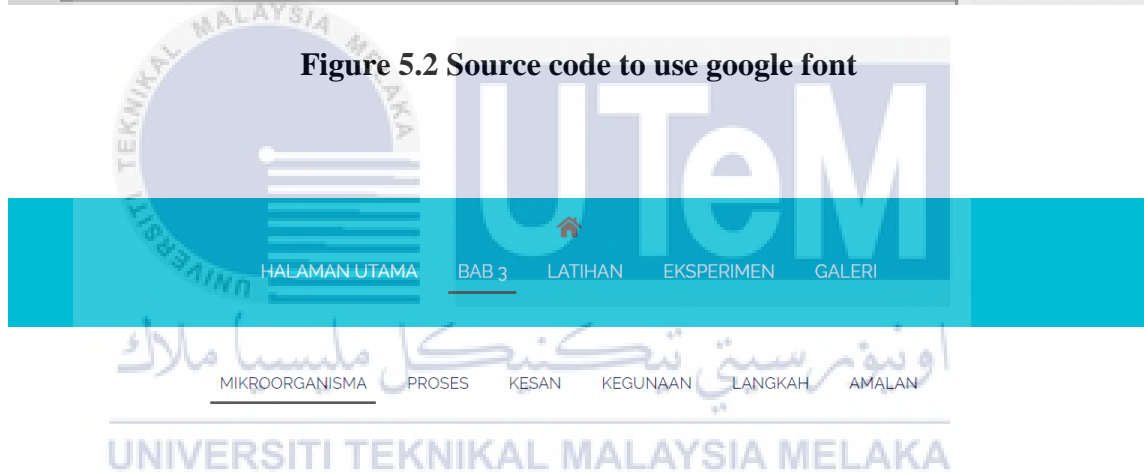


```

1 @charset "utf-8";
2 /* CSS Document */
3
4 /**credit to googleFont*/
5 /**ambil dari googleFont*/
6 @import url(https://fonts.googleapis.com/css?family=Raleway);
7
8 /**credit to github tutorial*/
9 /**hover for image*/
10 .hovereffect {
11 width:100%;
12 height:100%;
13 float:left;
14 overflow:hidden;
15 position:relative;
16 text-align:center;
17 cursor:default;
18 }
19
20 .hovereffect .overlay {
21 width:100%;
22 height:100%;
23 position:absolute;
24 overflow:hidden;
25 top:0;
26 left:0;
27 opacity:0;
28 background-color:rgba(0,0,0,0.5);
29 -webkit-transition:all .4s ease-in-out;

```

Figure 5.2 Source code to use google font



# MIKROORGANISMA

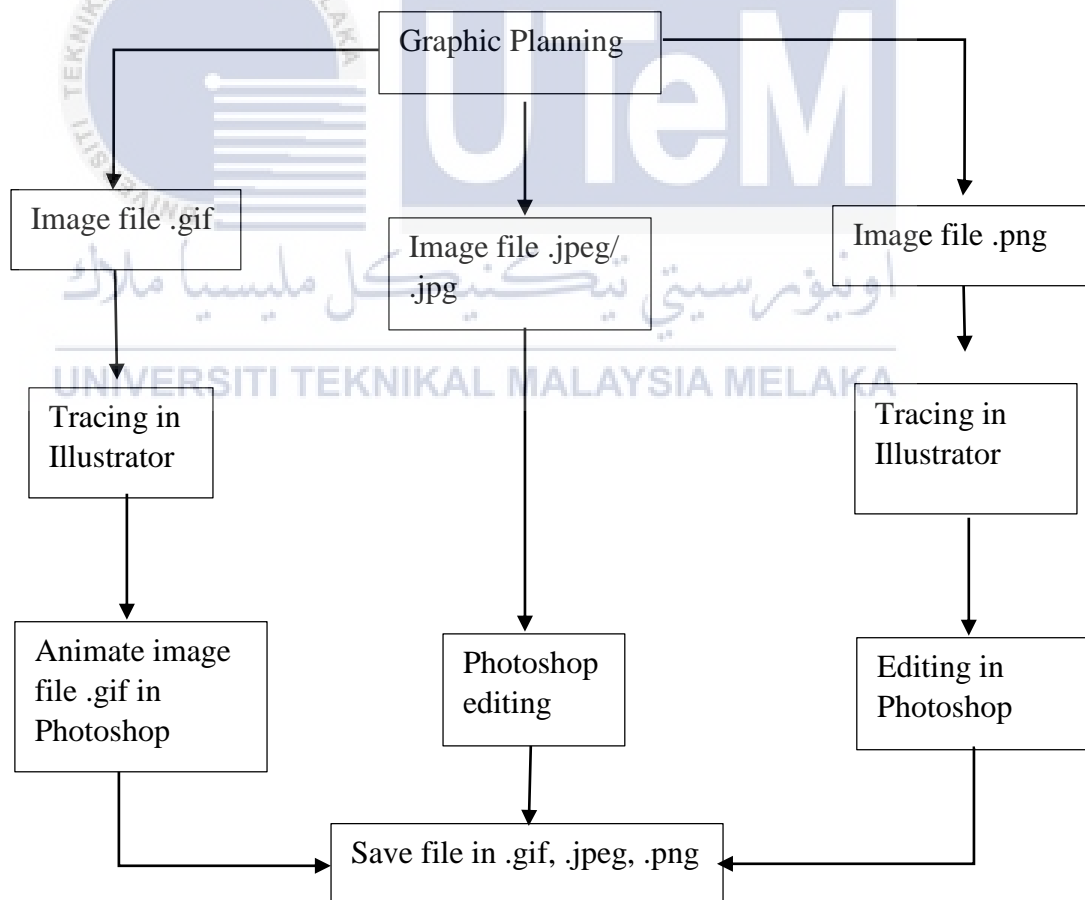
Mikro bermaksud sangat halus dan tidak dapat dilihat dengan mata kasar, manakala **organisma** bermaksud hidupan. **Mikroorganisma** ialah hidupan seni yang tidak dapat dilihat dengan mata kasar.

Figure 5.3 Website content using Open Sans font

### 5.1.2 Production of Graphic

The graphic is widely used in illustrating object, visual art and information's. They were known as two main type, which are the bitmap and vector. The output of bitmap images is pixel, while vector image is scalable without resolution loss.

In this project, all the graphic images are designed and drawn by using Adobe illustrator CS6 and Adobe Photoshop CS6. The format is .png, .jpeg, and .gif.

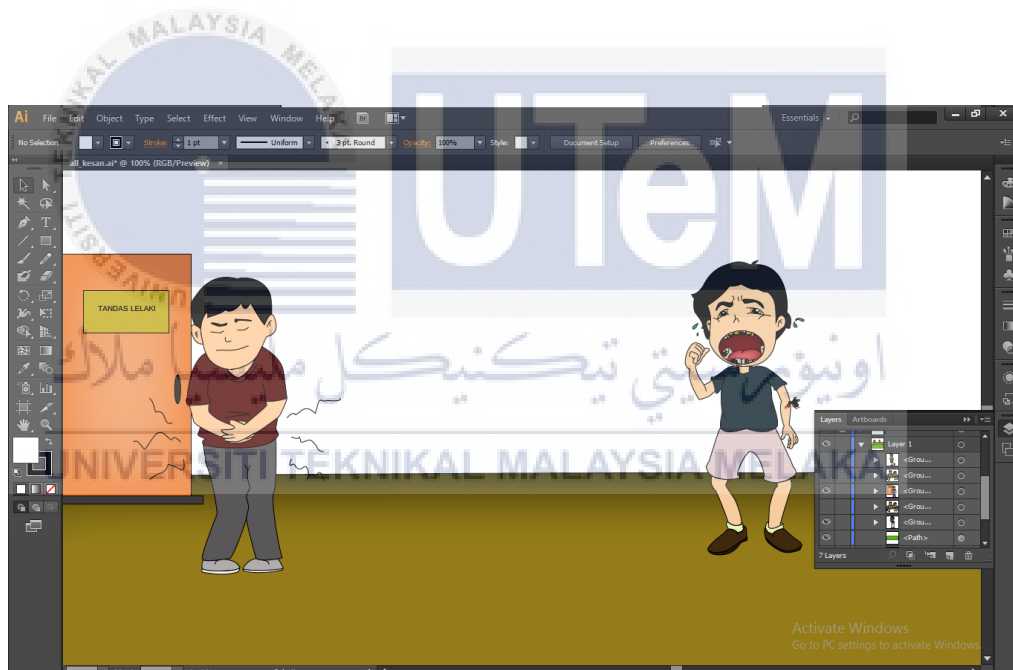


**Figure 5.4 The flow of graphic planning**

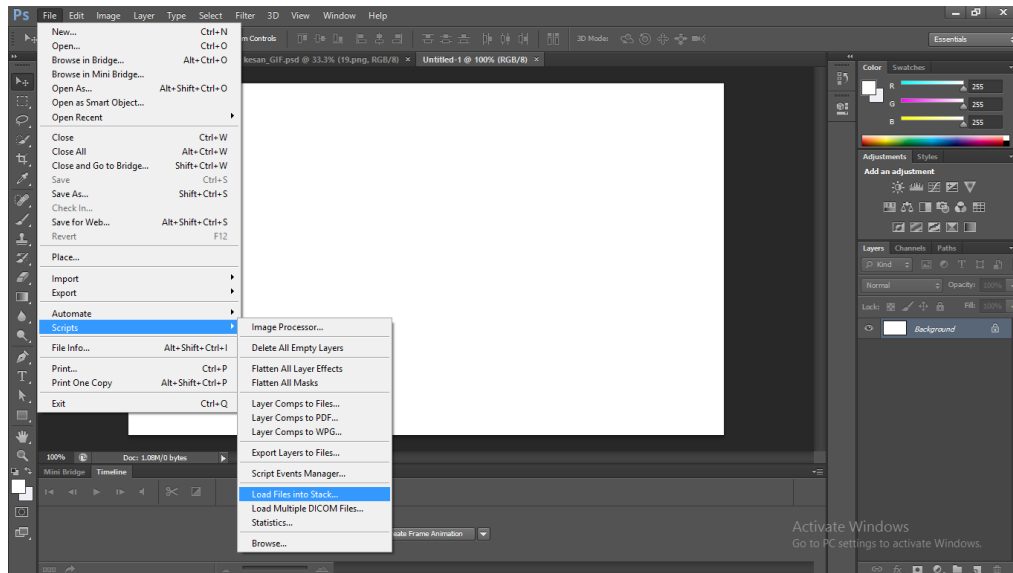
The image below is designed and drawn using Adobe Illustrator CS6 and edited in Adobe Photoshop CS6.

### Example A:

This is an example of trace the image in Adobe Illustrator CS6 and open in Adobe Photoshop CS6 to animate it into .gif file format.



**Figure 5.5** Tracing process in Adobe Illustrator CS6



**Figure 5.6 Load the file into Adobe Photoshop CS6**



**Figure 5.7 Animate the image in Adobe Photoshop CS6**

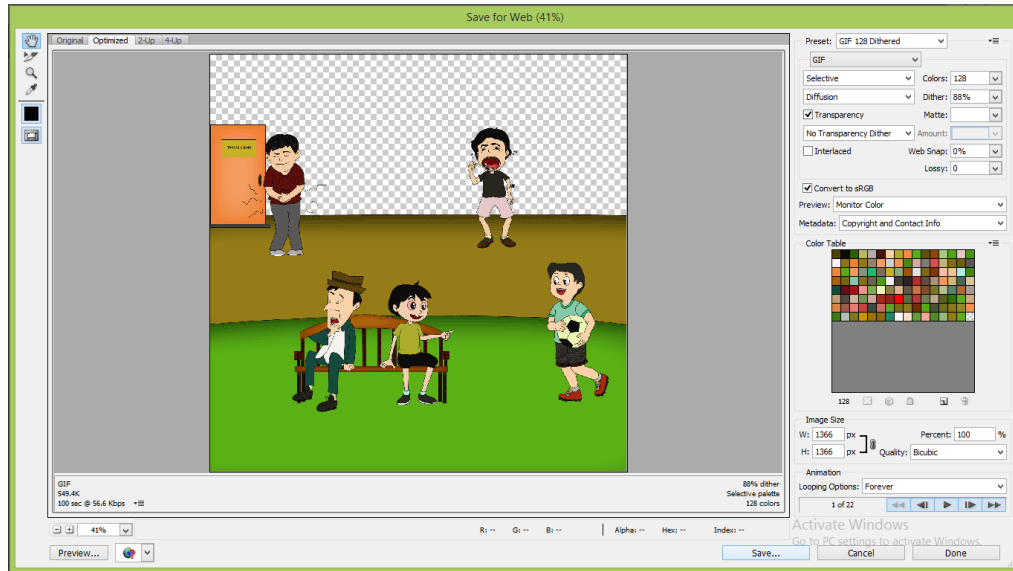


Figure 5.8 Save file into .gif format

Output:

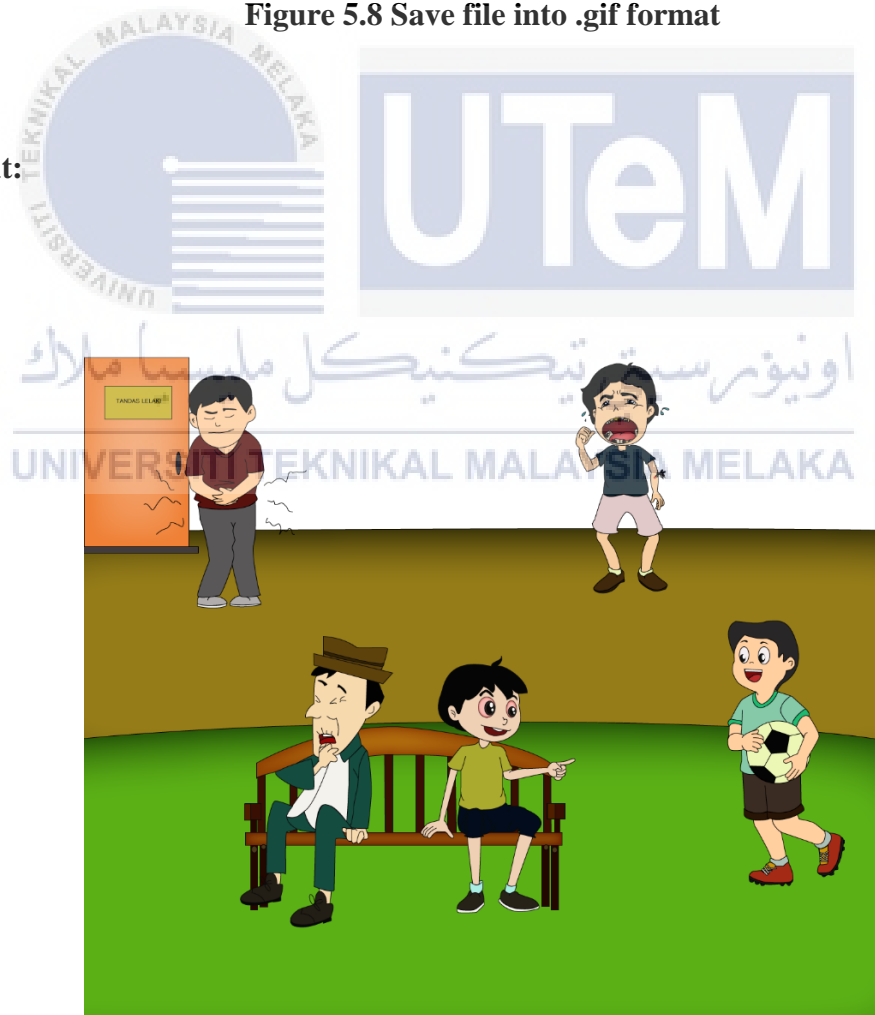


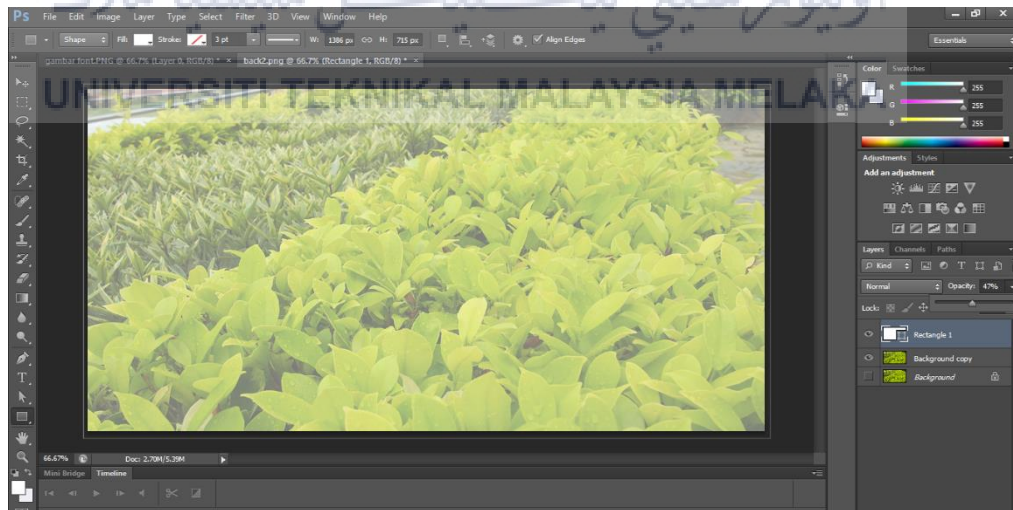
Figure 5.9 The output of .gif file

**Example B:**

This is an example of produce .jpeg file.



**Figure 5.10** The image used in main page



**Figure 5.11** Insert a new layer and adjust the opacity and fill.



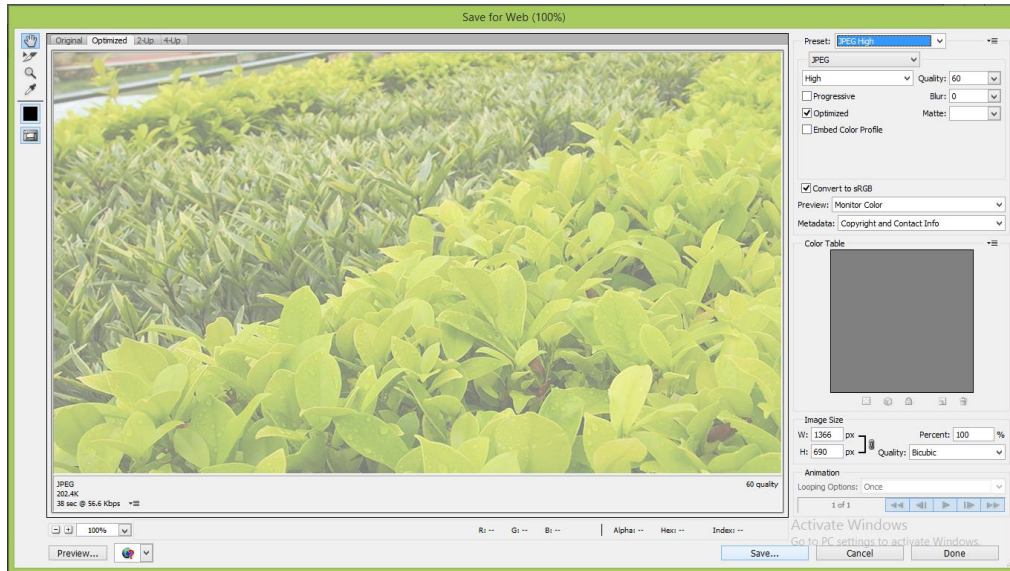


Figure 5.12 Save the file into .jpeg

Output:



5.13 The output after editing in Adobe Photoshop CS6

### Example C:

This is an example of .png file format

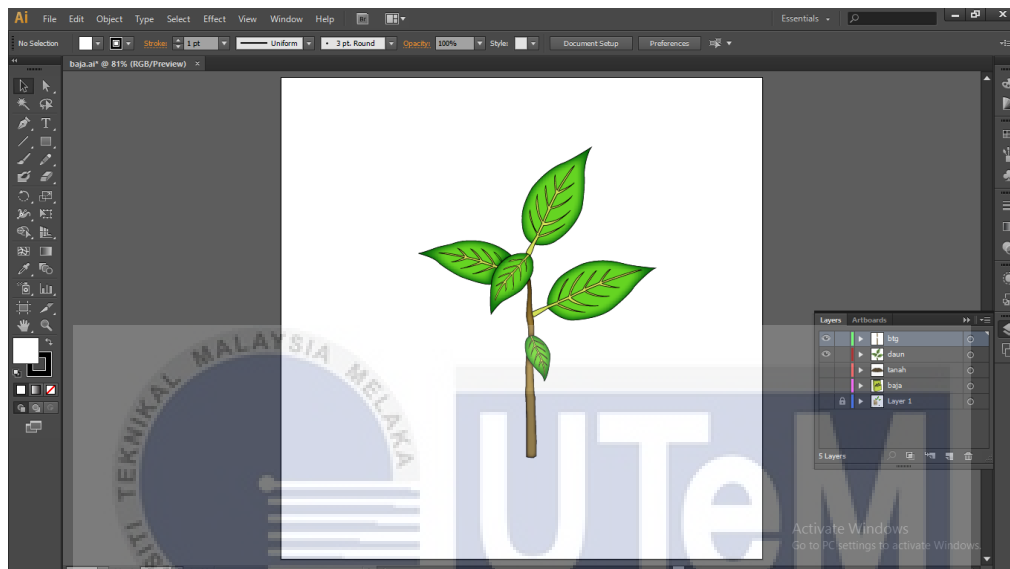


Figure 5.14 Tracing the tree using Adobe Illustrator CS6



Figure 5.15 Add new item to trace



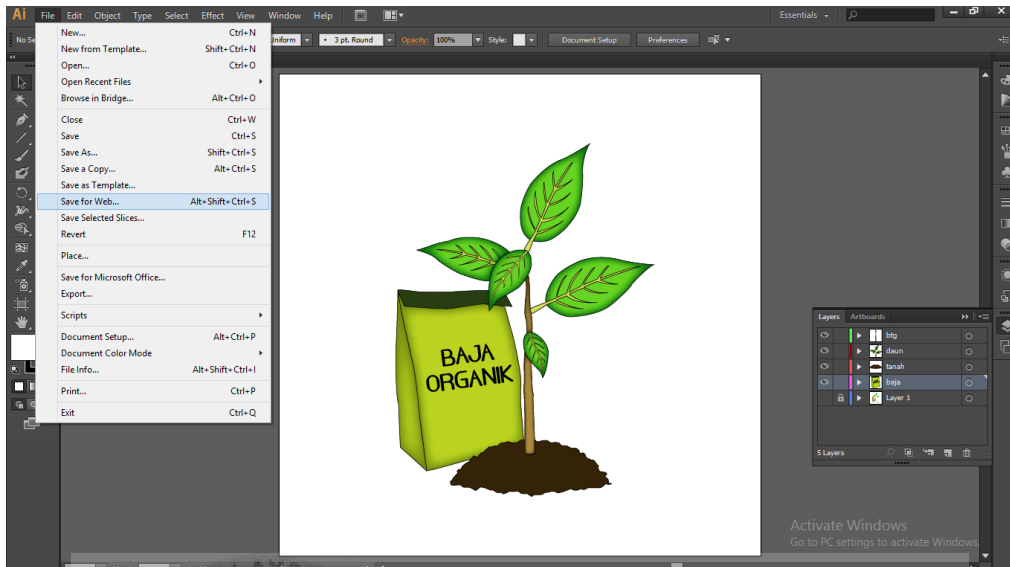


Figure 5.16 Save the image for web

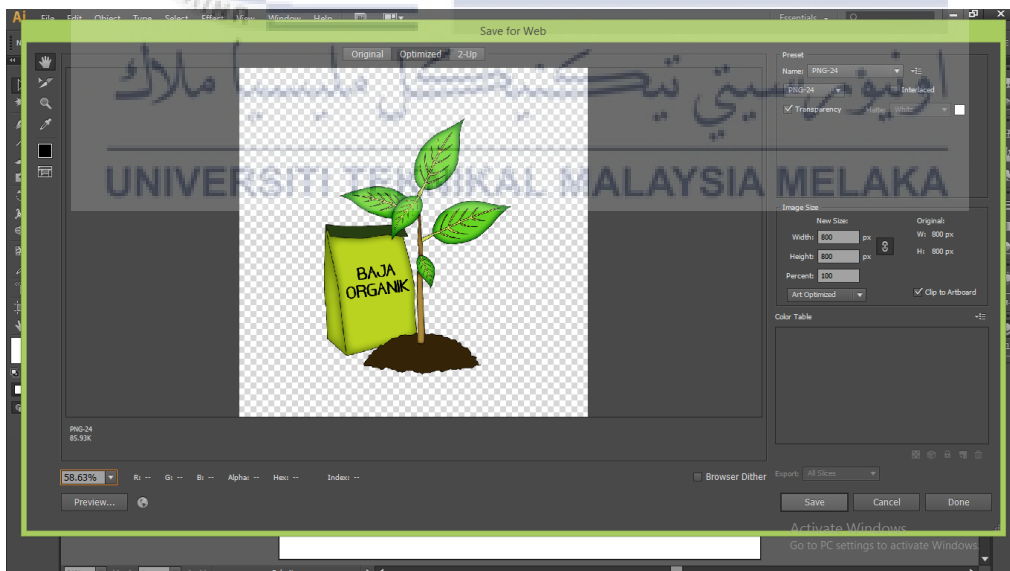


Figure 5.17 Save image as .png format

**Output:**

**Figure 5.18** The final image .png format

### 5.1.3 Production of Video

The production of video is one of type website content. In this interactive website, there will have one or two video of experiment in each chapter. On the other sub topic web page, there will link the experiment video with the related sub topic. This video will explain the experiment step by step. By showed this video, the user will be more understand the experiment with something they see even not doing by themselves. To develop all videos is using a software application that is Adobe Premier CS6.

For development video, the shooting was take place at Taman Seribu Bunga and Kampung Telok Mas by using Olympus PEN and Sony Xperia M2. After done doing shooting, the video will be transfer into file and editing in Adobe Premier CS6. After done editing, the video will be place into the interactive web experiment web page.



Figure 5.19 Behind the scene for video production

Example video production:

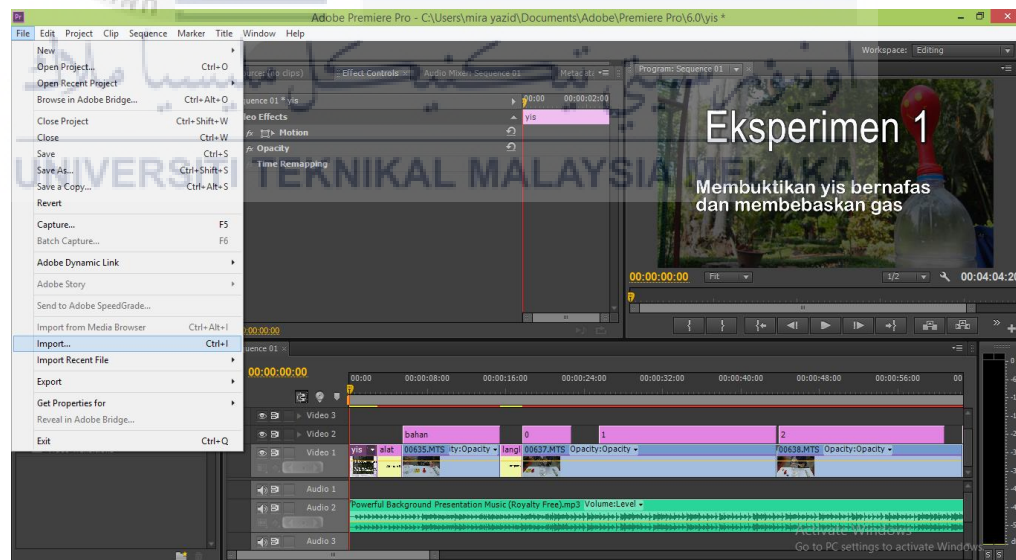


Figure 5.20 Import the file into Adobe Premier CS6

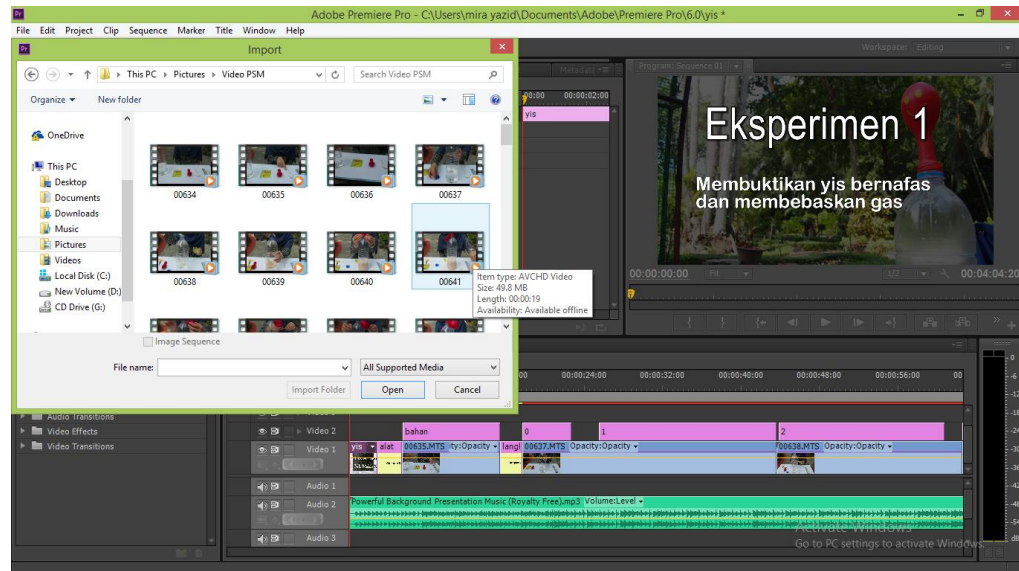


Figure 5.21 Choose the file and click “Open”



Figure 5.22 Add text into the video



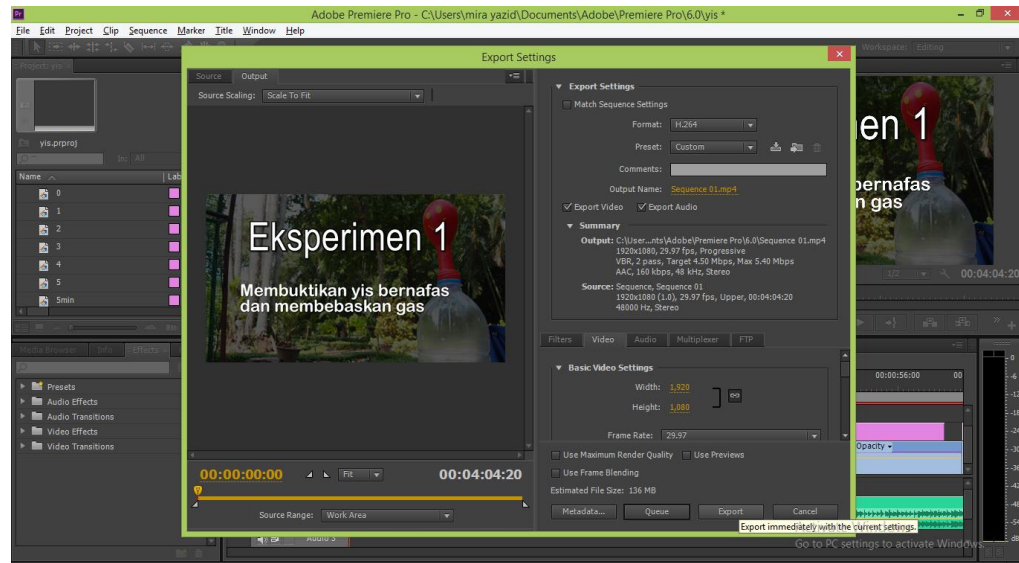


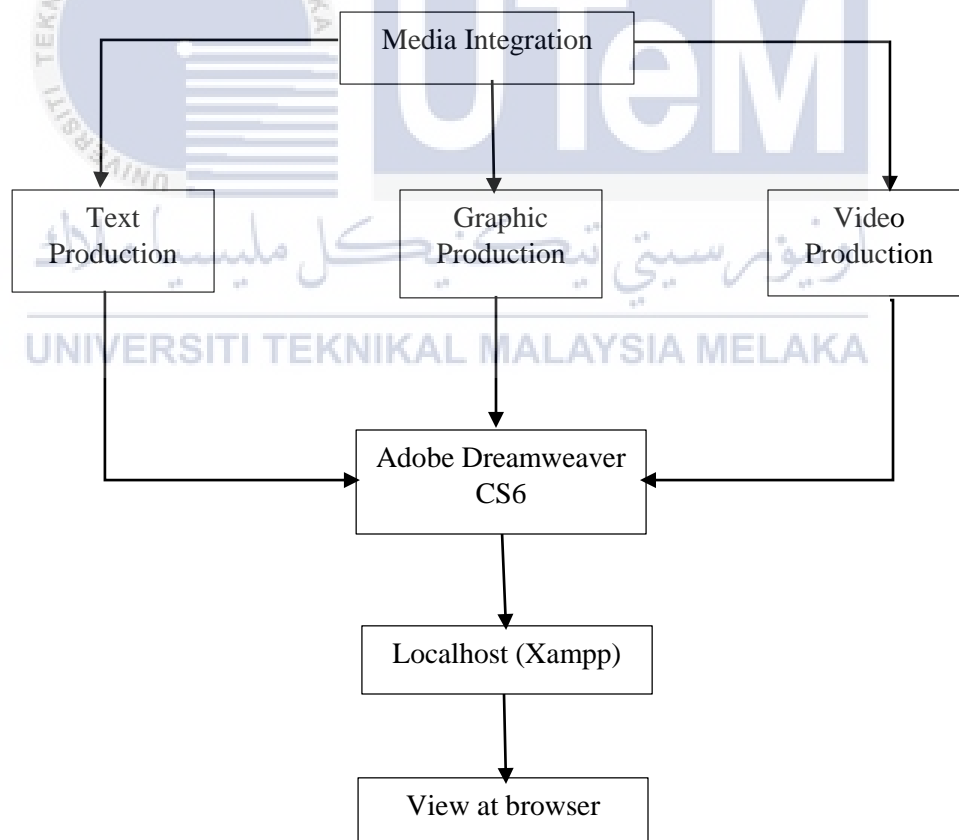
Figure 5.23 Export the file into .mp4



Figure 5.24 Final video to publish

## 5.2 Media Integration

The integration of interactive web is made in numerous type of software such as for production of video using Adobe Premier CS6, production of animation using Adobe Captivate9 and Production of graphic is using Adobe Illustrator CS6 and Adobe Photoshop CS6. After that, all the multimedia elements will be delivered in Adobe Dreamweaver CS6 to be its content. After finished this process, the interactive website can be preview using computer or laptop browser. The content of interactive website have .swf format for the exercise content, .mp4 format for the video and .html for the entire interactive website. After finished make content, the content will be published into browser by using localhost domain.



**Figure 5.25 Media Integration**

## 5.3 Product Configuration Management

### 5.3.1 Configuration Environment Setup

Adobe Dreamweaver CS6 is a software that is use to make the website with a HTML, CSS and Javascript language. All the learning object and the element contain will be inserted in Adobe Dreamweaver by generate the code. Figure 5.26, 5.27, 5.28 is the example of code that use in Adobe Dreamweaver CS6.

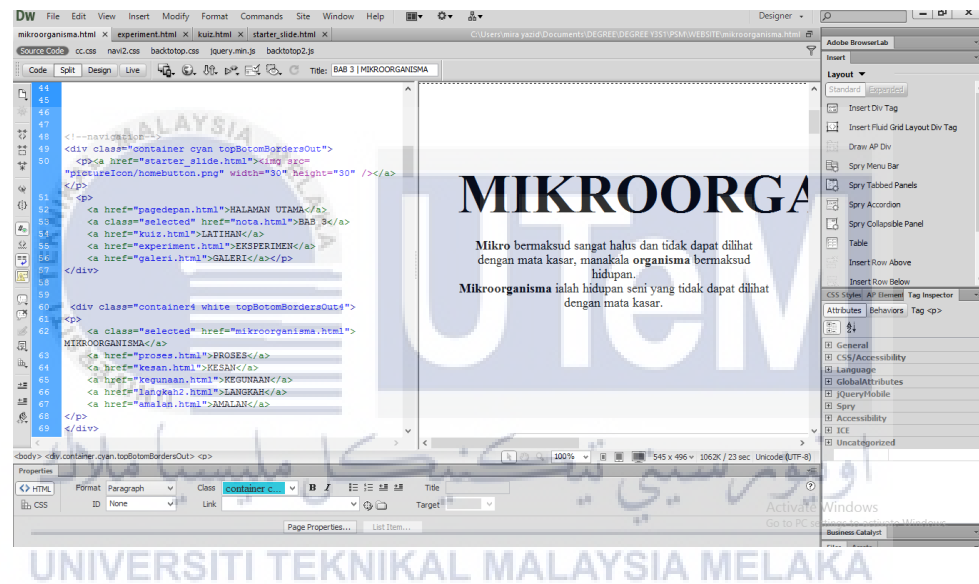


Figure 5.26 Example of HTML code

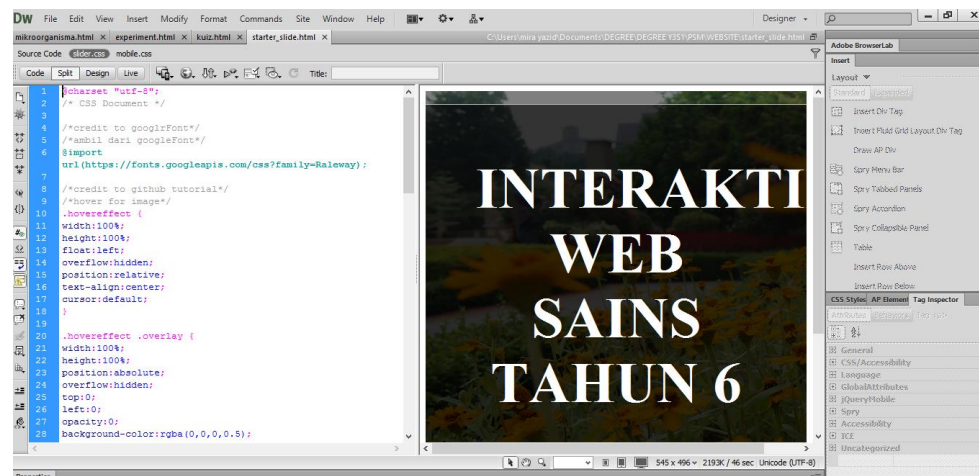
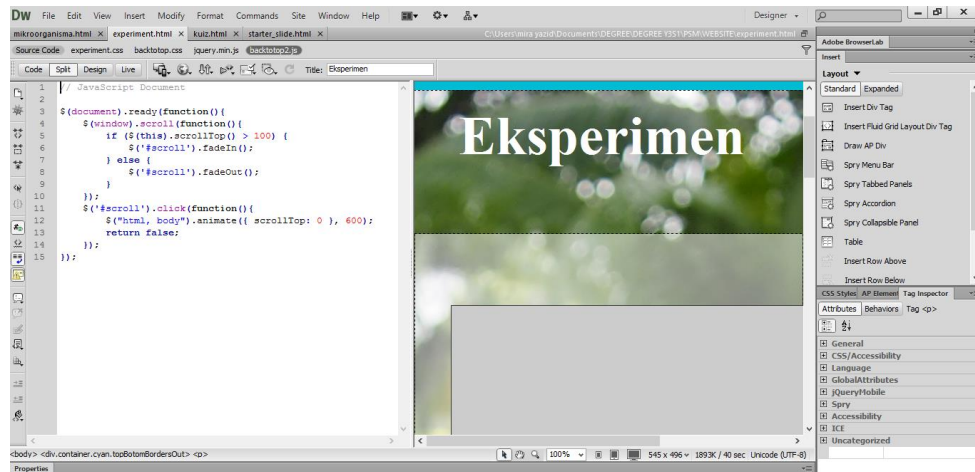


Figure 5.27 Example of CSS code



**Figure 5.28 Example of JavaScript code**

This is the software and the configuration that have use in develop this website.

**Table 5.2 Configuration Environment Setup**

| Software              | Configuration   |
|-----------------------|---|
| Adobe Dreamweaver CS6 | HTML file : 17<br>CSS file : 35<br>Javascript file : 5  |
| Adobe Premier CS6     | Format : .mp4<br>Frame : 1280x720<br>Frame rate : 25 frames/second<br>Channel : Stereo<br>Audio Sample rate: 48 kHz |



### 5.3.2 Version Control Procedure

In version control procedure, there are two version which are Alpha version and Beta version.

**Table 5.3 Version Control Procedure**

| Version       | Description   |
|---------------|---|
| Alpha version | In this version, there are a procedure that developer do before introduce the product to the user. First process, do all tracing image that need to insert into website. Next, build a website with navigation and structure. Set up the website content and manage the interface in term of color, text and image position. Final process to make sure all the requirement achieved. |
| Beta version  | Need to fix the product after introduce the product. Fix the exercise content in term of interface, content and audio.  |

## 5.4 Implementation Status

Explain the alpha version process and how much duration need to produce a product.

**Table 5.4 Implementation Status**

| <b>Alpha Version</b> | <b>Description</b>   | <b>Duration</b> | <b>Status</b> |
|----------------------|--|-----------------|---------------|
| Tracing              | Collect the data and start to trace the image by using Adobe Illustrator CS6.      | 2 weeks         | Settle        |
| Website              | Generate code to build a website   | 3 month         | Settle        |
| Image                | Take a picture and editing using Adobe Photoshop CS6                               | 1 week          | Settle        |
| Video                | Shoot the video to target location and edit the video using Adobe Premier CS6      | 3 week          | Settle        |
| Exercise             | Search the example question, filter the question and create the exercise platform. | 2 week          | Settle        |
| Gallery              | Edit the image and insert into website   | 4 day           | Settle        |

## 5.5 Conclusion


This implementation phase chapter contain the entire step that needs to develop an interactive website. This phase is important because it explains about the process that involved during developing this interactive website.



## CHAPTER VI

### TESTING

#### 6.0 Introduction



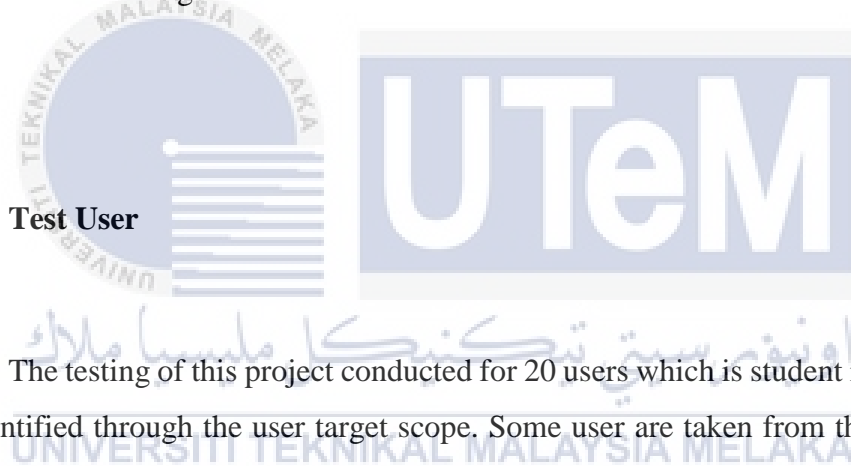
In this chapter will discuss about testing part and in this chapter some process are made to find out either the product are successful or not. Testing is a process that used to determine whether the final product meets all the requirements and fill the project objectives. The testing process must be done with the target user. The end product of this project is an interactive work that could improve the understanding of the user when using this product.

Test plan, test strategy, test implementation process, test result and analysis and analysis testing will be carried out in this chapter. All the result will be gathered and analyze to see whether it achieved the target or not.

## 6.1 Test Plan

Test plan is describing the target user that will using or testing the product. Test plan process for implementation is also identify clearly. The developer need to determine the category of test to be performed, the total of time required and objectives of each test. The objectives and scope of the testing phases are defined and the identified methodology will be used to manage tests.

### 6.1.1 Test User



The testing of this project conducted for 20 users which is student in one class that are identified through the user target scope. Some user are taken from the same student who are already explore the product and do the exercise that provide in the website and get the result.

### 6.1.2 Test Environment

Test environment states the location where the testing is conducted which is at primary school and hardware and software environment in which the tests will be run. The compatible hardware and software to be use during testing process must be prepare early

and the testing process will follow the flow. The hardware need to run the product is computer or laptop with windows 7 and above can support the interactive website to be test, while the software use is Adobe Dreamweaver CS6 and publish using localhost domain to view the interactive website.

### 6.1.3 Test Schedule

A test schedule is very important to control the length of time for the user test the product throughout the testing activity. In this project testing, users are provided with laptop and will be given 10 minutes to play around with the interactive website and 5 minutes to answer the questionnaire.

**Table 6.1 Test Schedule**

| Testing               | Date            |
|-----------------------|-----------------|
| Functionality testing | 31 July 2016    |
| Usability testing     | 2-3 August 2016 |

## 6.2 Test Strategy

This test strategy is to allow tester to try and discover the product. Throughout the testing strategy, it is to identify the users understanding about the module. There have two type of testing which is functionality testing and usability testing. Table 6.1 will explain the functionality testing and usability testing.

**Table 6.2 Functionality testing and Usability testing**

|                              |   |
|------------------------------|---|
| <p>Functionality testing</p> | <p>Developer make sure all the multimedia element will work properly before testing to the user. Prepare the questionnaire to get the user feedback. For the black-box testing, 7 student BITM, 1 student BITC involved in this testing to the test the effectiveness and get a feedback before testing to the target user.</p> |
| <p>Usability testing</p>     | <p>The user will be allow to discover the product and will be provide a questionnaire about the product and to know their understanding because their understanding is different from the developer.</p>  |

20 primary student, standard 6 were involved in this test. The test is based on the user usage, behavior in learning, interface, product content, plugin reaction and general questions.

## 6.3 Test Implementation

Test implementation contains a text description of how the test is complete and the collections of data obtained from the test result. Besides that, the testing strategy can identify the contents of the module whether it is interesting or too hard to user understand by give a feedback to the questionnaire provided.

### 6.3.1 Test Description

Functionality testing is carried out and test by developer to test all features website including the interfaces and multimedia elements. First, developer need open the localhost domain to view the website. Next, check the interface and all element in website to ensure the functionality of website is in right condition. Last, fix the website element if have error detected before proposed to the user.

Usability testing is located at Sekolah Kebangsaan Pulau Sebang, Tampin, Melaka. Before starting the testing, developer need to ask the headmaster to get a permission to do the questionnaire to the target student. Then, developer need to meet with teacher who is conducted standard 6 student to get a permission because it too hard to meet with the target user in term of their full activity for UPSR preparation. With 15 minutes given by teacher, developer brief introduction about the product. Doing the demo and then the user will play around the product and the user requested by developer to fill up the questionnaire.



The questionnaire divided into 2 category which is Part A and Part B. In Part A, question 1-3 about user usage in term of laptop and question 4-8 about the user behavior in learning process. Next, Part B question 1-3 is about interfaces, question 4-7 about website content, question 8 plugin reaction and question 9-12 is about general questions.

### 6.3.2 Test Data

Test data is the results that obtained through the testing conducted towards the selected user for this project. All the test data should be analyze by the developer to test the effectiveness of the project that has been developed and the result were evaluate in table form and carted in bar and pie chart. Test data usability testing are divided into two section which is demographic data and usability testing data collected. Demographic data testing is to collect data about the user behavior in learning and usability testing data collected is based on the product developed in this project. Table 6.2 show the usability testing data collected.

**Table 6.3 Test data**

| Test data                        | Description   |
|----------------------------------|---|
| Demographic data                 | <ul style="list-style-type: none"> <li>• Gender</li> <li>• Nation</li> <li>• User usage</li> <li>• User behavior</li> </ul> |
| Usability testing data collected | <ul style="list-style-type: none"> <li>• Interface</li> <li>• Website content</li> <li>• Plugin reaction</li> </ul>         |

|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• general</li> </ul> |
|--|---|

#### 6.4 Test Results and Analysis

The testing result of functionality is shown in Table 6.3. This is test elements of buttons, sound, plugin reaction, video and image load. All the element test is succeed.

**Table 6.4 Test Result and Analysis**

| Test elements   | Results |
|-----------------|---------|
| Buttons         | Success |
| Sound           | Success |
| Plugin reaction | Success |
| Video           | Success |
| Image load      | Success |

#### 6.5 Analysis Testing

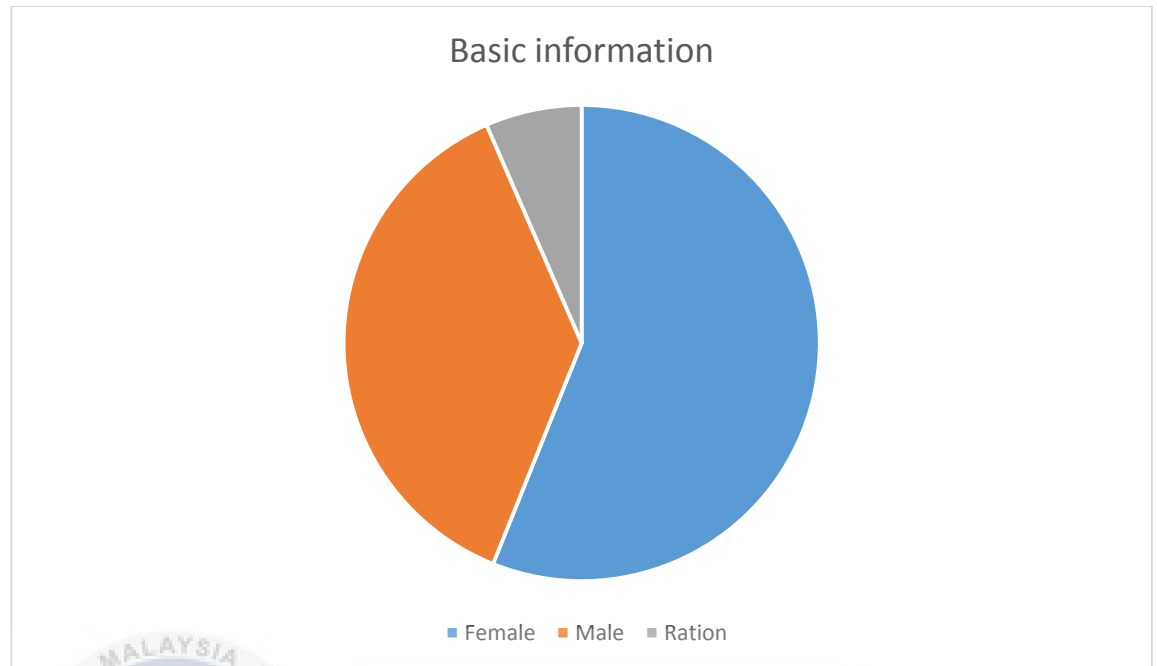
The test result and analysis is done after the target user finished the questionnaire. From the analysis, the project will be determined whether it reach the objectives of the requirements.

For the functionality testing, 8 student from UTeM involved to do the black-box testing to get a feedback and based on their feedback, this website can be introduce to the target user. Table 6.4 show the result.

**Table 6.5 Functionality testing**

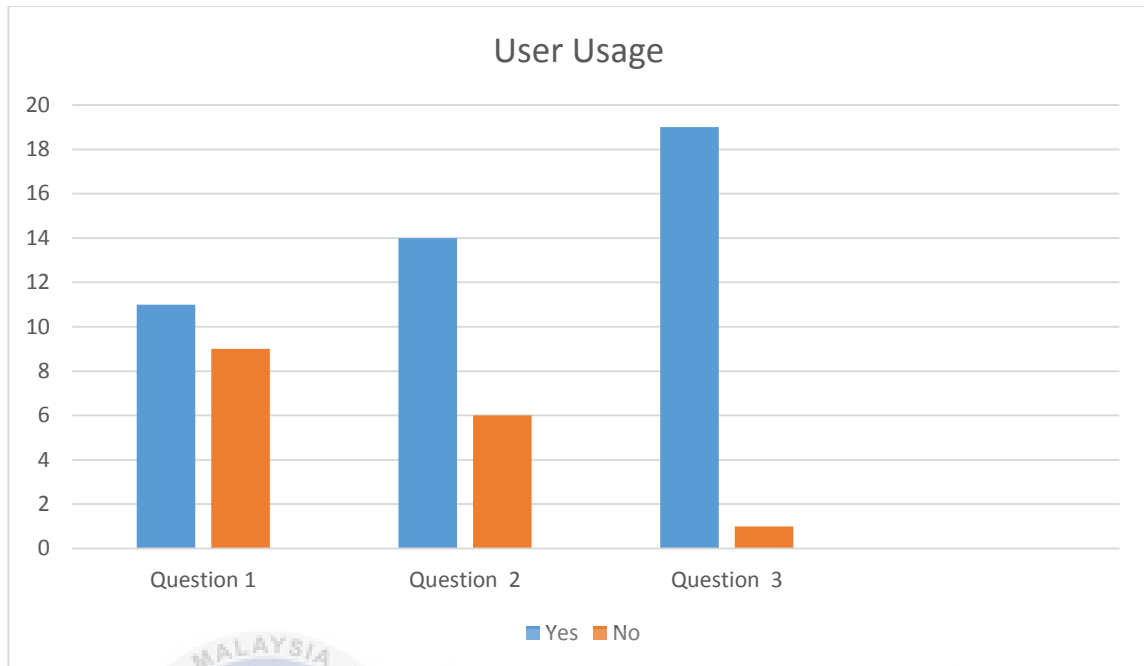
| Question  | Result |
|---|--------|
| 1) This website allow you easy to access.                       | Pass   |
| 2) All the element in this website easy to read and understand. | Pass   |
| 3) Video element in this website easy to understand             | Pass   |
| 4) Is it this flash plugin player working?                      | Pass   |
| 5) All the menu button work as they are.                        | Pass   |

Usability testing data collected involved 20 primary school student to test the product and fill up the questionnaire.



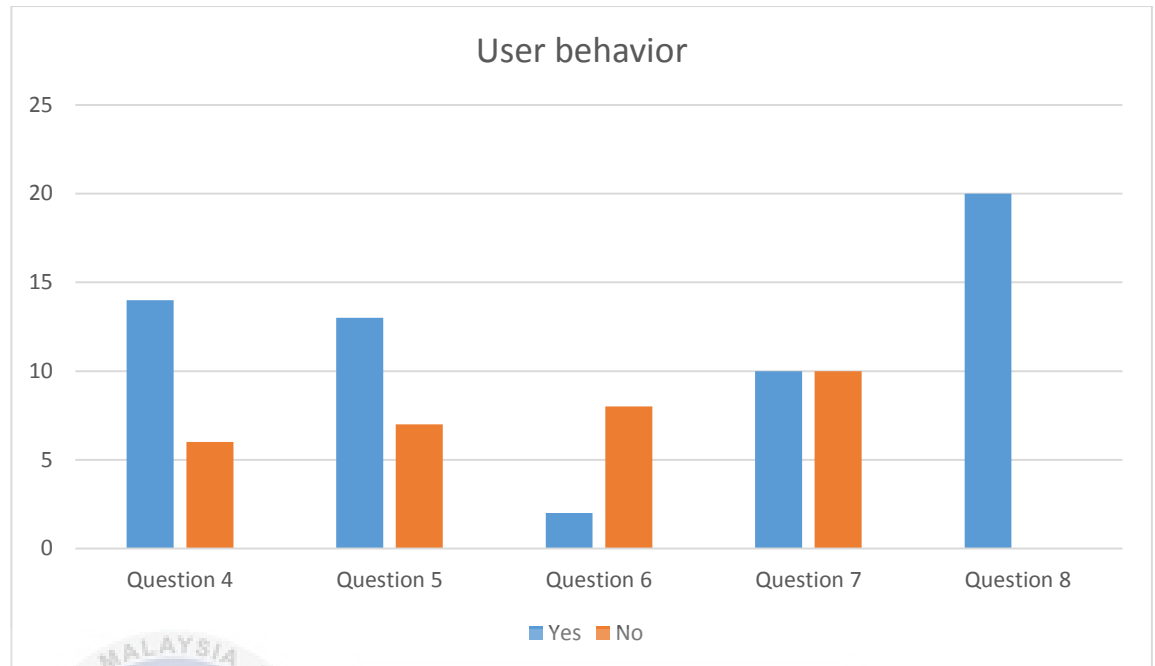
**Figure 6.1 Basic Information**

The pie chart shows, the user basic information. Female is 12 participant, male is 8 person, while the ration is Malay 19 person and India 1 person.



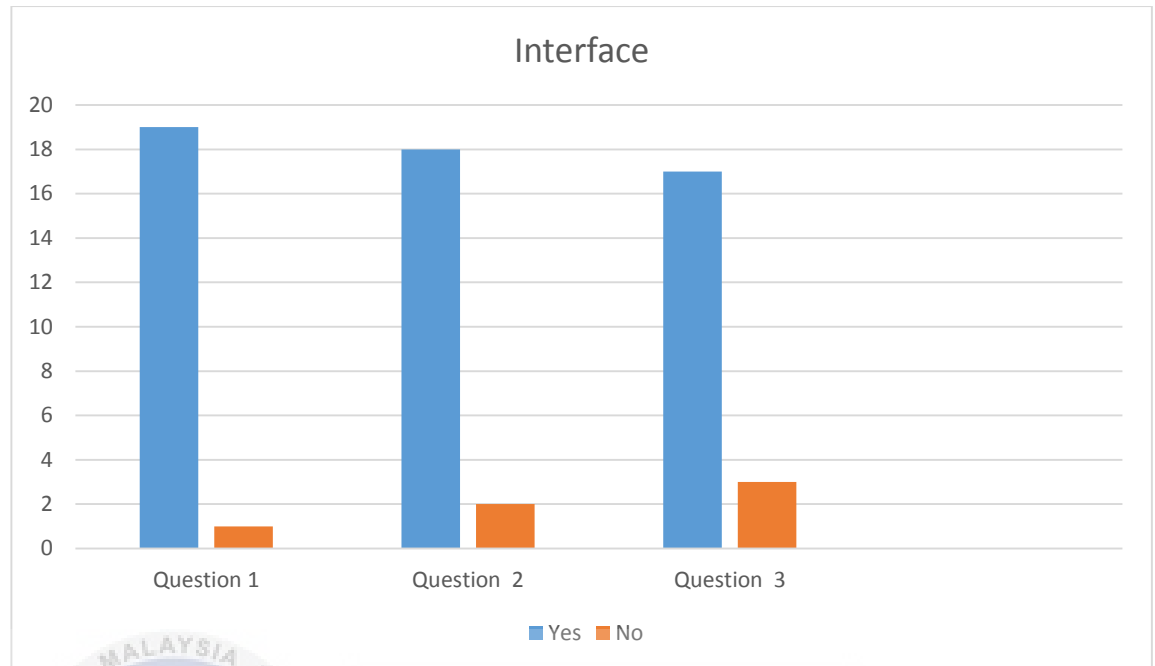
**Figure 6.2 User Usage**

The graph show, the usage of laptop and the user know how to surf the internet using the laptop is the highest. The lowest of the usage because of their living standards and limited to explore the computer or laptop.



**Figure 6.3 User Behavior**

The graph shows, the highest average is question 8 and the question is about, as a student, I think it is important to learn a new technology. The lowest average question for user behavior is question 6 and the question about, I think, it is waste the time to do a revision by using a computer. The equal rate for the question 7 is about, I easy to feel bored when do a revision by using a textbook.



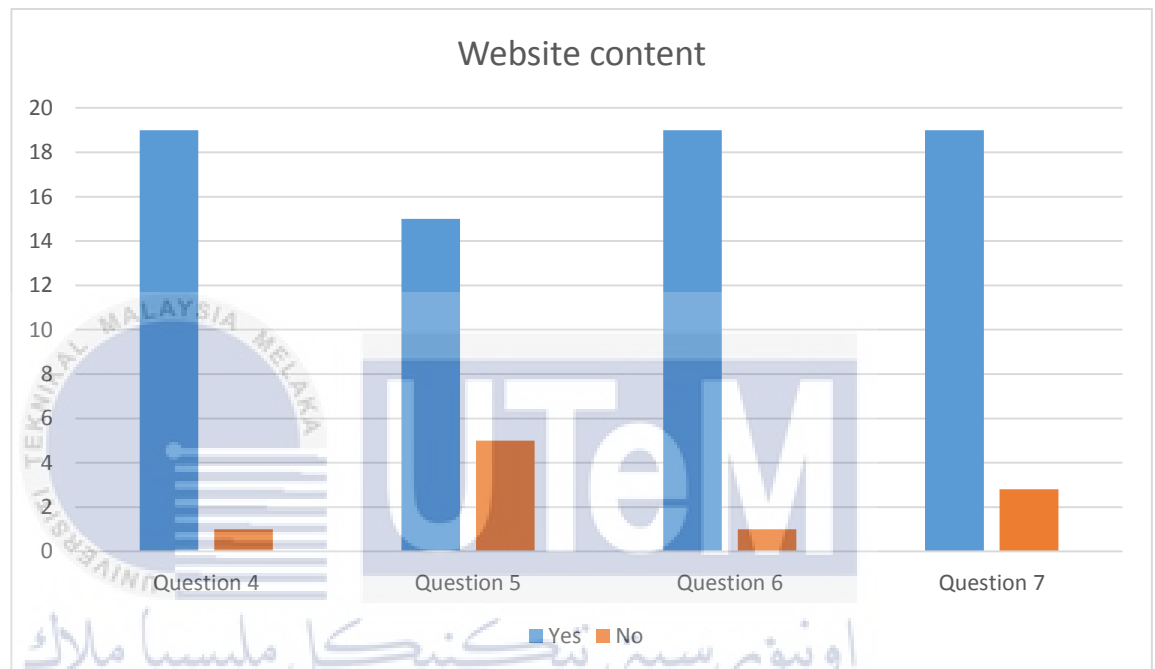
**Figure 6.4 Interface**

The graph shows, the highest average is question 1. For the question 1 is about, this website allow you easy to use it. The lowest average for question interface test is question 3. The question 3 is about, the choices of menu make you easy to manage the website.

Based on follow up survey, 19 of 20 student said yes to the question 1 because there are simple interface and make them easy to understand how to use it. Other than yes, the student do not know how to explore it by using a laptop. Next, question 2, there are 18 student out of 20 said yes because there have a big image to describe the sentences. Other 2 student said no because they prefer to learn through book. For question 3, 17 of 20 student said yes to the question because there have a simple menu and easy to discover.

Sum up, most of them said yes about the interface because this website looks simple and easy for them to understand the website flow. Others than yes, minority of

them does not know how to use the laptop or surf the internet because in term of their lifestyle not affordable to have a gadget. From a science teacher, she said this website looks simple, easy to understand and have an example picture in every explanations.



**Figure 6.5 Website content**

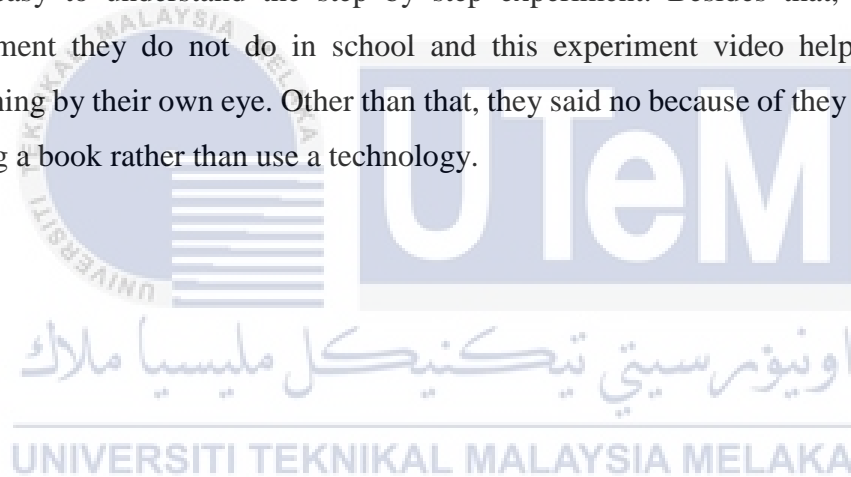
The graph shows, the highest average is question 4, 6, 7. For question 4 is about, when click the button, the choice of menu will function like you expect. The question 6 is about, the video element in this website is easy to understand and for the question 7, the moving picture (.gif) in this website is easy to read and understand.

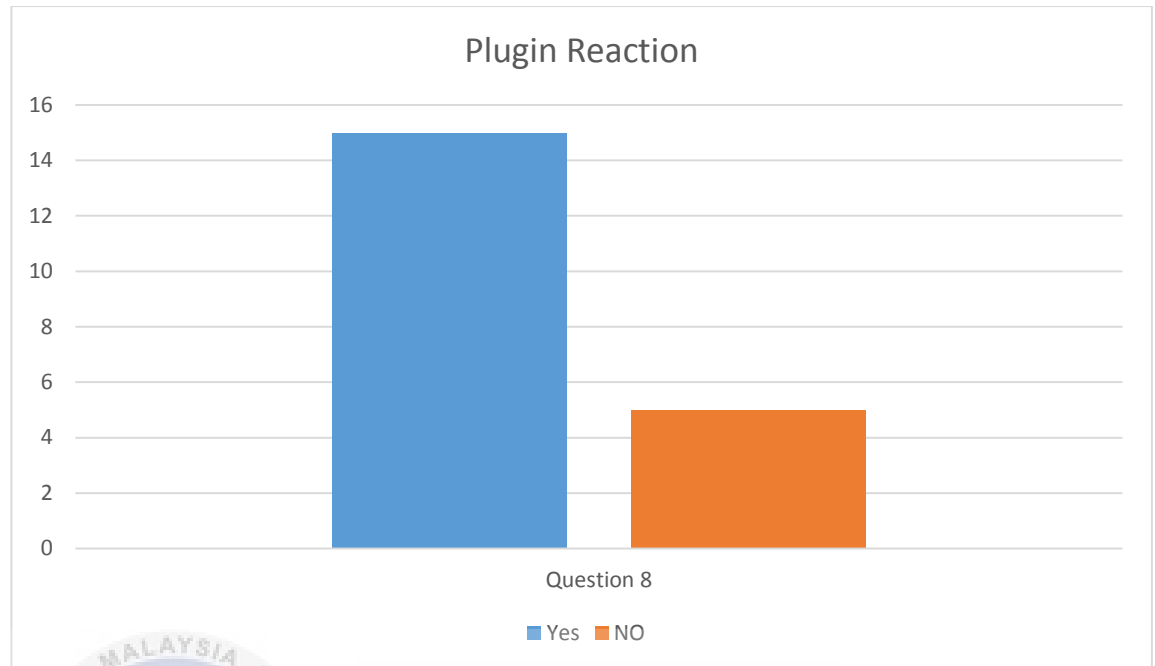
Based on follow up survey, 19 of 20 student said yes for the question 4 because all the menu button functionally as their role and they know what the button function for. Other 1 student said no because the student does not know how to use the website. Next, for question 5, 15 out of 20 student said yes to the statement, the element on this website



is too interactive because they like the element that have in this website and other 5 student said no because they prefer textbook more than this website. Besides that, on question 6, 19 of 20 student said yes because the element of video attract them to watch the experiment in term certain of them do not do the experiments and other 1 student said no because the student prefer read the experiment rather watch it. For last question in website content, 19 out of 20 said yes to the question 7 because they like the moving image with the explanation because the textbook have a static picture.

Sum up, most of them said yes about website content because there have video element and moving picture (.gif). Most of them said, this video element content make them easy to understand the step by step experiment. Besides that, there a certain experiment they do not do in school and this experiment video help them to learn something by their own eye. Other than that, they said no because of they love to learn by reading a book rather than use a technology.

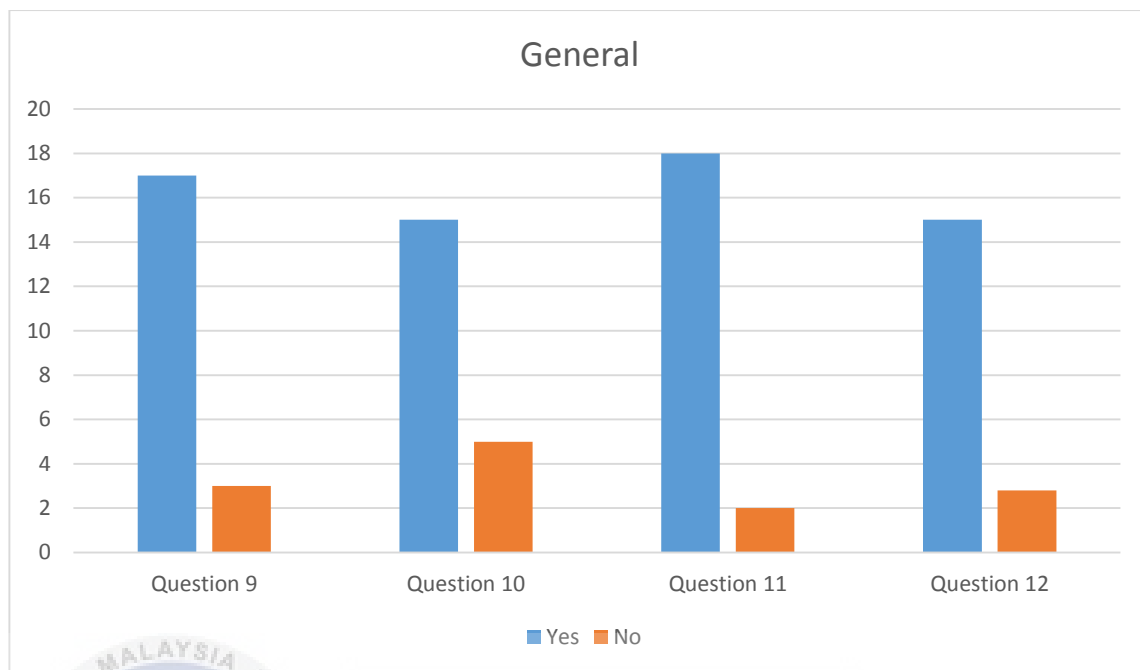




**Figure 6.6 Plugin Reaction**

The graph shows, the question 8 is about, it is the flash player plugin for the exercise page easy to open and used. Overall, the plugin do not have a problem to load a flash player.

Based on follow up survey, 15 of them like to do an exercise in this website page because of there have a question and sound effect if they answered right, wrong and not answered it. Besides that, this exercise have a score to make them feel excited and be fun to achieve a high score. For the last remain 5 student said no to this question because they do not know what plugin means for.



**Figure 6.7 General**

The graph shows, the question 11 is the highest average and the question is about, is it this website will be your extra note in case of your learning process. The lowest average question is question 10 and 12. For the question 10 is about, is it this website more easily to understand rather than textbook. For question 12, are you sure by using this website will improve your score in school.

Based on follow up survey, 17 out of 20 student said yes to the question 9 because they like to learn a new things instead of learn through textbooks and other 3 said no because they prefer to learn through textbooks. Next, for question 10, 15 of 20 student said yes because certain of them do not like to read a textbook and they like to learn something simple and easy to understand and other 5 said no because they love to read a textbook. For question 11, 18 of 20 student said yes because they like this website to be their extra notes in term of revision and this website help them to be more understand of the syllabus. Last question of general question, 15 out of 20 said yes to the question 12 because they agree that by using his website will help them to improve their education in

school by doing the revision and do a exercise that provided and other 5 said no because they prefer learn the traditional way.

Most of them said yes in this general question because of they like to explore a new things and they prefer this website as extra notes to help them doing a revision. Most of them do not like to read a textbook because textbook do not have an interactive things like video or moving picture with explanations.

Overall for all this questionnaire is more likely agree with the statements after all the required testing data is collected and analysis has been done. The result for this testing project is more to positive. The overall analysis testing show that some of the user still stick with the traditional learning which is reading and learning from the textbook but still will accept this new method as their extra notes. For interface and website content show the positive result and the element that used inside the interactive website are well accepted by the user. However, there are still a lot of content to improve and improvise the quality of the project.

## 6.6 Conclusion

This chapter describe all the testing part and all the testing plan and analysis that has been done. After the testing result has been analyzed, it is prove that interactive website can engage the user during the usability testing compared to learning the traditional method. The testing and improvement process still need be done in future even the project successfully reach the requirements. This phase is to ensure the functionality and quality of the product is good.

## CHAPTER VII

### CONCLUSION

#### 7.0 Introduction



اونيورسيٲى ٲكنيكا ملسيا ملاك

In this chapter, we will discuss about the result of the test and all we had done so far. After doing a testing phase, this interactive website have found the strength and weakness of the product. Besides that, this chapter also about to summarize all the ideas, evidence and survey and for improvise any suggestion in details.

#### 7.1 Observation on Weaknesses and Strengths

By completing the analysis and testing phase, there are some advantages and disadvantages of this product. There are the observations of the advantages and disadvantages of this product.

### 7.1.1 Product advantages

The user can watch the video experiment that show how the experiment had been done step by step. The video clearly explain the step and easy to understand. There are also have animated image which is .gif image that explain the sub topic with the moving image. There have an explanations with the picture to make the user understand the sentences. Furthermore, by using the clearly text, widget and sound effect in the exercise, that will make user easy to understand how to use and become more fun to answer the questions.

### 7.1.2 Product disadvantages

Some weakness of this project is the icon on menu page looks not suitable with the background. Besides, this website not compatible with the other screen because in term of the resolution not be set for other screen.

## 7.2 Propositions for Improvement

For the future work, perhaps all chapter will be completed and can publish into the real domain. So, the user especially the student can used this website as their extra notes.

In addition, this website can add a new features like animation and 3D modelling with suitable chapter. Besides that, this website can be a responsive web for make this website can be view in other screen besides laptop.

### 7.3 Project Contribution

With this interactive website, users can learn the science subject in other way as their extra notes. Thus, this website can help the users to understand about science syllabus as this website concept to present the user easy to understand the subject. This website is very suitable for the 12 years old and above because of the advent of new technology and they easy to learn a new things and this website easy to use and understand.

### 7.4 Conclusion

In this chapter, there were more advantages than disadvantages when developing the interactive website. Even this project has some flaws, but by a little improvement, this product can be repaired and will help users for their learning process. Users easy to understand the notes that provided with images and have a great time to watching the experiment video with the step by step explanations. This is a better way to learn rather than reading the textbook that contain words and image only.

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<http://interactivesites.weebly.com/science.html>

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<http://www.sciencekids.co.nz/>



## Appendices

### Questionnaire

Title: Interactive Web Science Standard 6

#### LAMPIRAN A

Sila penuhkan pada ruang yang telah disediakan.

1. Nama Sekolah:

2. Nama Pelajar:

3. Jantina:

- Lelaki ( )
- Perempuan ( )

4. Bangsa:

- Melayu ( )
- Cina ( )
- India ( )
- Lain-lain ( )

Nyatakan:

#### LAMPIRAN B

#### BAHAGIAN A

Sila tandakan (/) pada ruangan Ya atau Tidak untuk menyatakan pendapat anda

| Bil               | Perkara  | Ya | Tidak |
|-------------------|--|----|-------|
| <b>Penggunaan</b> |  |    |       |
| 1                 | Saya atau ibu bapa saya mempunyai komputer/laptop dirumah. |    |       |
| 2                 | Saya faham bagaimana cara menggunakan komputer/laptop.     |    |       |

|   |  |  |  |
|---|--|--|--|
| 3                                       | Saya tahu bagaimana melayari internet menggunakan komputer/laptop.         |  |  |
| <b>Sikap pelajar dalam pembelajaran</b> |  |  |  |
| 4                                       | Saya rasa belajar menggunakan buku teks mudah difahami.                    |  |  |
| 5                                       | Saya suka belajar menggunakan buku teks mudah difahami.                    |  |  |
| 6                                       | Saya suka mengulangkaji pelajaran atau membuat tugas menggunakan komputer. |  |  |
| 7                                       | Saya merasa cepat bosan apabila mengkaji pelajaran menggunakan buku teks.  |  |  |
| 8                                       | Sebagai pelajar, saya fikir penting untuk mempelajari teknologi baru.      |  |  |



### BAHAGIAN B

Sila tandakan (/) pada ruangan Ya atau Tidak untuk menyatakan pendapat anda

| Bil                      | Perkara  | Ya | Tidak |
|--------------------------|--|----|-------|
| <b>Antaramuka</b>        |  |    |       |
| 1                        | Laman web ini membolehkan anda menggunakan kandungannya dengan mudah.                                    |    |       |
| 2                        | Elemen di dalam laman web ini membolehkan anda melihat kandungannya dengan mudah. (contoh: Gambar besar) |    |       |
| 3                        | Pilihan menu yang ada memudahkan anda untuk mengendalikan web ini.                                       |    |       |
| <b>Isi kandungan web</b> |  |    |       |
| 4                        | Apabila diklik, pilihan yang berkaitan di menu akan berfungsi seperti yang diharapkan.                   |    |       |
| 5                        | Elemen-elemen di dalam laman web mudah difahami.   |    |       |
| 6                        | Elemen video yang ada di dalam laman web mudah difahami.   |    |       |

|                                  |  |  |  |
|----------------------------------|--|--|--|
| 7                                | Elemen gambar bergerak yang ada di dalam laman web ini mudah dibaca dan difahami.  |  |  |
| <b>Tindakbalas <i>plugin</i></b> |  |  |  |
| 8                                | Adakah <i>plugin flash player</i> untuk latihan mudah dibuka dan digunakan.  |  |  |
| <b>Umum</b>                      |  |  |  |
| 9                                | Adakah laman web ini membantu anda dalam proses pembelajaran.  |  |  |
| 10                               | Adakah laman web ini lebih mudah difahami berbanding buku teks.  |  |  |
| 11                               | Adakah laman web ini akan digunakan oleh anda sebagai nota tambahan dalam proses pembelajaran.                             |  |  |
| 12                               | Adakah anda yakin mengulang kaji pelajaran menggunakan laman web ini akan meningkatkan prestasi pelajaran anda di sekolah. |  |  |

## Screenshot of website



