

## BORANG PENGESAHAN STATUS TESIS\*

JUDUL: ONLINE COLOR BLIND SCREENING TEST

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# **ONLINE COLOR BLIND SCREENING TEST**

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This report is submitted fullfillment of the requirements for the  
Bachelor of Computer Science (Interactive Media)

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY  
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2010**

## DECLARATION

I hereby declare that this project report entitled

### ONLINE COLOR BLIND SCREENING TEST

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

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## DEDICATION

Specially dedicated to my beloved parents, Shuaib Hj Ahamad and Madzainah  
Salleh,

For my supervisor, Encik Shahril Parumo,  
(UTeM)

And lastly to my beloved friends and who have encouraged, guided and inspired me  
\* throughout my journey in education

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## ABSTRACT

This project is called Online Color Blind Screening Test and developed based on the research from the optometric specialist about color blind. This web will conduct three online screening tests which are Ishihara Test, D-15 Hue Test and Anamaloscope Test. This project is tried develop an online screening test which include all the information about color blind as well as the screening test itself. This project's target user is for people aged from 12 to 50. This web was developing using The Prototyping Life Cycle approach as a development methodology. All the web programming language has been implementing in this project such as CSS, html, php and JavaScript. This product is a web-based and will be produce in HTML file format with resolution 800 for width and the height of resolution depends on the content.

## ABSTRAK

Projek ini dinamakan sebagai *Online Color Blind Screening Test* dan ia dibangunkan berasaskan kajian tentang penyakit buta warna dengan pakar optometrik. Tujuan projek ini dibangunkan adalah untuk membangunkan ujian pengesanan buta warna di samping pendedahan berkaitan penyakit ini. Antara ujian yang terdapat di dalam projek ini ialah *Ishihara Test*, *D-15 Hue Test* dan *Anamaloscope Test*. Projek ini disasarkan kepada semua golongan terutamanya yang berumur di antara 12 tahun hingga ke 50 tahun. Projek ini dibangunkan dengan menggunakan Kitar Hayat Prototaip sebagai metodologi pembangunan projek. Dalam membangunkan projek ini, teknik pengaturcaraan seperti CSS, html, php dan JavaScript diimplementasikan sebagai pembuat keputusan bagi pembangunan web ini. Projek web ini adalah merupakan pangkalan web dan akan dibangunkan mengikut revolusi kelebaran 800 dan ketinggian mengikut isi kandungan.

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# CHAPTER I

## INTRODUCTION

### 1.1 Project Background

Nowadays, internet has been widely use in our telecommunications field. It carries a lot of information resources and services and most of them come in variety documents such as World Wide Web (WWW). Due to this, a webpage is a document that is suitable for the World Wide Web (WWW). It can be display on the screen computer of user via accessing the web browser. Usually this information is in HTML or XHTML format and also may provide navigation to other website by hypertext links. Webpage can be divided into two types which are static webpage and dynamic webpage. Static webpage contains of files of static text stored within the web server's file system. While for the dynamic webpage may construct the XHTML or HTML for each webpage when it is requested by the browser. Back to the history in August 1991, Tim Berners-Lee had published first website that combine internet communication (email) with hypertext. It was written in an early version of HTML that only giving a website's basic structure and also



have the ability to link using hypertext. This gives many benefits to the users. Users can easily navigate to other pages by following hyperlinks from page to page. As time by time, the markup language changed to become more complex and flexible and add some features. The features are like add tables and images. Soon, Cascading Style Sheets (CSS) has been developed to control and change presentation of HTML documents. With the progression of web, tens of thousands of web design companies have been established around the world to serve the growing demand for work.

For final year BITM students, they have to do final year project based on several domains such as virtual reality, 2D animation, 3D animation, Interactive Web and many more to complete their study in degree. This project will produce interactive web about color blind. The important why this project is to give information to the public about what color blind it is all about. From the observation, people nowadays have lack of information about this illness that existing among us so that this web page will contains a lot of info about color blind, the symptom, type of color blind, the treatment, the prevention and so on. Some extra feature that is included in the web page is the user can have their pediatric color vision test for early detection of this illness. Furthermore, this web page also being created to help an individual who suffer this illness to get some extra advice from the optometric specialist about his/her illness. This web page also will contain some educational video to give some extra input for the users about the definition of color blind. Users also are allowed to give interaction by adding some question to the specialist.

## 1.2 Problem Statement

- **Lack of information about color blind illness among Malaysian**

People nowadays do not have much information about color blind illness that existing among us. From the statistic from Wikipedia, about 1 in 12 people have some sort color deficiency. This results shows that this illness is common illness that infected humans. Hopefully this web page will give them some extra information about color blind illness such as the treatment, the prevention and so on.

- **Currently there is no one stop center for color blind screening test beside to go to hospital**

People nowadays usually busy doing their work and due to this they will not have time to go to the hospital. To overcome this problem, this web page will include pediatric color vision test for early detection of this illness. People can test color deficiency at home easily. If the results show that they suffer this illness they can take some extra guidance that exists in the web page.

- **Less quantity of health web page in Malaysia**

Based on the observation on the Internet, there's only a little website that provide some health info especially about color blind in Malaysia. Most of all are from other country. Unfortunately, all the service that the website provides does not have enough information for the color blind suffers to refer to.

### 1.3 Objectives

There are four objectives to develop this project. The objectives of the project will be describing briefly by following:

**i. To develop screening test online**

The webpage is create to help the individual who suffer this illness as nowadays there is not many web page can give them a lot of helpful information and guidance to them. In this web page also contain pediatric color vision test for early detection of this illness.

**ii. To enhance current screening test online.**

There are several current screening test online nowadays but unfortunately some screening test online does not fully develop. Perhaps, with the researching on the weaknesses of current screening test online hopefully this web page can be a better screening test online among them.

**iii. To develop a systematic interactive web that makes interaction with the users.**

A systematic interactive web will be developing which the resolution width is 800 and the interfaces are based on the human computer interaction conditions that suitable for color blind suffers.

**iv. To research techniques used in conducting color blind screening**

There are certain technique or screening tests to detect people which are color blind.

## 1.4 Scope

The scopes of this project will include the term of target user. The scopes are described as following the target user for whose is the potential user for this project is adult's age between 12-50 years old. The users can come from:

- i. Individual who suffer color blind illness
- ii. Individual who wants to get information about color blind
- iii. Individual who wants to take the screening test

This product is a web-based and will be produce in HTML file format with resolution 800 for width and the height of resolution depends on the content. The language that will be use is php, java and html. This project will be built as one of health webpage which is about color blind. The design of the website is based on the human computer interaction guidelines.

## 1.5 Project Significance

As we know, there are lots of websites on the internet that specializing in business, personal page, corporate website, community site, social networking and many more. This webpage can provide a lot of benefits to the users either in personal usage or other usage. Because of this users can gain a lot of information about color blind illness. This project also was developing as a systematic website that makes interaction with the user. Most of the color blind website nowadays lack of information about the color blind and does not have some extra guidance for individual to overcome his/her illness. Perhaps with the project resisting it will help a lot the user to gain information about this illness and most importantly the user will be satisfied with that all features that this webpage provides.

## 1.6 Expected Output

The expected output for this project is it will produce a dynamic web. This webpage can provide lots of benefits to the users such as give them information, some guidance and many more. Furthermore, this web page also will provide pediatric color vision test for early detection. The users that involves can come in personal use or others. All of the interface designs are based on the human computer interactions terms and multimedia elements. The features that involve are:

- i. Definitions of color blind
- ii. The symptoms of color blind
- iii. How it is treated
- iv. Color blind test
- v. Some video for extra information
- vi. Some frequently question

## 1.7 Conclusion

The project background introduces the whole project, current scenario, and the problem might arise from the current situation. The problem statements describe the problems from the current scenario and why this project should be developed. From the problem statements, the objectives, scopes and the project significance are clearly stated.

Internet has been widely use and it is good medium in our telecommunications field. It provides a lot of benefits in human life. There are many types of website that has been developed such as business web, personal homepage, social communication, corporate web and so on. Unfortunately, there is still other people do not know how to use the benefits of internet wisely especially people in the suburban area. This project was build to help people who suffer in color blind illness. Although there are

many web pages that provide this service, the webs still have their own disadvantages and problems. Perhaps with the producing of this project it will overcome all the disadvantages and problems from the existing web site and can serve the users better and satisfy the users feeling with the features that are provide in this web page.

For the next chapter, it will discuss about literature review of several journal related with web application and methodology that will use to develop the project.

## CHAPTER II

### LITERATURE REVIEW AND PROJECT METHODOLOGY

#### 2.1 Introduction

This chapter will describe in details about the related review that have been written earlier to support the project title. Literature review is refers to the study on collection of published materials in selected area of studies such as articles, journals, thesis, online library, technical documents and case studies. Literature review should give theoretical base for research and support the research topic through analysis, summarize, and evaluation of the literature. The literature review may vary according to the field of studies but their purposes are same. Literature review is done to justify the research, enable the researcher to learn from previous theory, identify the strength and weaknesses of the previous research and increase the understanding and knowledge of field of studies.

Besides, it also explained the type and function of methodology that has used to develop the project. 'Methodology' is an etymology of the Latin words 'methodius' + 'logia' which means a body of practices, procedures, and rules used by those work in a discipline or engage in an inquiry; a set of working methods (The

Free Dictionary By Farlex). Methodology is used to produce and achieve the objectives of the project. Finally, it will explain all the software and hardware that require developing the project.

### **2.1.1 Introduction to Color Blind**

The definition taken from Wikipedia, it defines color blind or color vision deficiency, is the inability to perceive differences between some of the colors that others can distinguish. It is most often the genetic nature but may also occur because of eye, nerve, or brain damage or exposure to certain chemicals.

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Also from Wikipedia, about 8% of men and 0.5% of women experience some difficulty in color perception. Color blindness is usually an inherited sex-linked characteristic, transmitted through, but recessive in, females. Acquired color blindness results from certain degenerative diseases of the eyes. Most of those with defective color vision are only partially color-blind to red and green. They have a limited ability to distinguish reddish and greenish shades. Those who are completely color-blind to red and green see both colors as a shade of yellow. Completely color-blind individuals can recognize only black, white, and shades of gray. Color blindness is usually not related to visual acuity; it is significant, therefore, only when persons who suffer from it seek employment in occupations where color recognition is important, such as airline pilots, railroad engineers, and others who must recognize red and green traffic signals. Tests for color blindness include identifying partially concealed figures or patterns from a mass of colored dots and matching skeins of wool or enameled chips of various colors.