



**FACULTY OF ELECTRICAL ENGINEERING
MARA UNIVERSITY OF TECHNOLOGY**

FINAL REPORT OF DIPLOMA PROJECT

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**KEU 380
COLOR SENSOR**

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Abstract

Color sensor is a simple circuit, which is use to sense light color of the object. This circuit used a simple electronic device such as Integrated Circuit (IC), Light Sensor (LDR) and Light Emitted Diode (LED). The function of the devices used in the circuit will be explained detailed in this project report. This circuit needs to put any colored light in front of the gadget. The gadget will detect the light color that falls on the gadget and this circuit will determine that color.

Then one of the LED will be on. This circuit will detect eight colors; blue, green, red magenta, yellow, cyan, black and white. If the primary color that determine, only one of the LDR will triggered and the other two LDR untriggered, therefore the triggered LDR will become logic 1 to indicate which color it is. When secondary colored that determine, two of the LDR will get triggered and the gate output corresponding to these would become logic 1 and indicate which color it is.

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Solawat and salam to the greatest Prophet, Muhammad S.A.W and to all his generations and also to his good companion.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

Color sensor is an interesting project. The circuit can be sense eight color: blue, green and red (primary colors), magenta, yellow and cyan (secondary colors), black and white. The circuit is based on the fundamentals of optics and digital electronics. The object whose color is required to be detected should be placed in front of the system. The light rays reflected from the object will be fall on the three convex lenses which is fixed in front of the three light sensors (LDRs). The convex lenses are used to converge light rays. This help to increase the sensitivity of LDRs. Blue, green and red glass plates as the filters are fixed in front of LDR 1, LDR 2 and LDR 3 respectively. When reflected lights rays from the object fall on the gadget, the colored filter glass plates determine which of the LDRs would get triggered.