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Abstract

This colour detection device is designed to help the blind people in identifies the colour of objects to recognize the four basic colours and speak the recognized colour. This project is one of the alternatives for use by vision-impaired people to allow them to perform basic colour recognition tasks and to handle their problem relies on colours to enjoy their activities and do the tasks or perform their jobs. This project uses a red, green, blue and yellow LED to illuminate a surface. The intensity of reflected light from each colour is measured with a photoresistor (LDR). The operation of the system is controlled by an Arduino Uno R3 microcontroller and the determined colour is spoken through an Emic 2 Talk-to-Speech module. This project is one of the ways to help the blind people's life simpler and practical in which they can be supported to lead independent and fulfilling lives.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE PROJECT

Blindness is the condition of lacking visual perception due to physiological or neurological factors. Living in modern and developing world is not easy for blind people to deal with each day in their life since there is lot of challenges they have to face. They have to face in social challenges which are cause them difficulties to perform job duties and participate in outdoor activity such as sports and academics outdoor activities. One of the biggest challenges for the blind people is interaction with the environment need to face in life when it come dealing with the colour. It is a big problem for the blind people to recognize or identify the colour matching and colour sorting. It is so easy for normal people to rely on colours to enjoy our activities and do our tasks, which we often take this ability for granted but without this basic ability, it would find that the simplest of tasks can become very difficult.

Regarding to this circumstance and challenges that the blind people need to face, therefore this project is intended to develop a device which can detect four main colours and pronounce the determined colour. The assistive technologies that are designed for