UNIVERSITI TEKNOLOGI MARA

IOT STRESS MONITORING SYSTEM

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ABSTRACT

Stress has risen to prominence as a problem for people in today's fast-paced and demanding environment which are also impacting people in a various aspects of their life. Numerous kinds of physical, emotional and psychological responses are brought on by stress which can be caused by environment factors. However, the biggest concern is the severe negative effects that persistent stress has on a person's general health and quality of life. As a result, the Stress Monitoring System that based on the Internet of Things (IOT) is developed. This project is designed to monitor and alert an individual's stress level using variety of sensors and Arduino Mega microcontroller. The Arduino Mega microcontroller and Bluetooth module are used as a tool for sending to database or server application in order to run the system. The inputs that serve in this project are a accelerometer sensor which is ADXL345, a pulse oximeter sensor called MAX30102 and a temperature sensor (DHT22). Additionally, LEDs and a LCD display that act as an activity indicator is included into the output. The LCD display shows the individual's temperature and respiration level. Using Bluetooth applications, this stress monitoring system may be remotely managed. If the user's stress level exceeds the usual range, it may trigger an alarm, increasing user awareness of their stress level in a smart way. The stress issue among today's society can be lessened.

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TABLE OF CONTENT

CHAPTER ONE
INTRODUCTION

1.1 Introduction

The stress issue has been a worldwide major concern in this modern days as it affecting an individual daily life. Almost all people especially students and workers are engaged to their works to meet the deadlines without they being aware of their mental health stress level. According to the statistics report by the Ministry of Health Malaysia (MOH), one of three Malaysian or 29% of the population are suffered from mental health issues and it caused by the stress and pressure from the environment including high cost living, financial issue, work pressure and others [1]. Any population's repeated long-term stress symptoms can be utilized for identifying afterward illnesses and diseases. Anxiety and nervousness can result from stressful circumstances. A person's body is under stress while they are aroused. The sympathetic nervous system is activated by stress and this activation results in a variety of bodily responses such as sweating, an increase in heart rate, and tightness in the muscles. Despite the fact that stress actually benefits in performance but an excessive or persistent stress can be harmful. A stress monitoring system that will enable people to better understand and control their stress levels. This project is done by using MAX30102 sensor, DHT22 sensor and accelerometer sensor.