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FINAL REPORT: HEARTBEAT SENSOR MONITORING

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ABSTRACT

Heartbeat monitoring is a personal device that allows one to measure one's heart rate in real time or record the heart rate for later study. It is largely used by performers of various type of physical exercise. Early models consisted of a monitoring box with a set of electrode leads which attached to the chest. The first wireless heart rate monitor was invented in 1997. As 'intensity training' became a popular concept in athletic circles in the mid-80s. Modern heart rate monitors usually comprise two elements, a chest strap transmitter and a wrist receiver or mobile phone. So in our project we use infrared light. This is achieved by production of infrared light by internal bulb, as infrared light is absorbed by the blood, a sensor measures the amount that the infrared light is darkened by. If it is significantly darker, due to the pulse causing a temporary increase in the amount of blood that is travelling through the measured area, that is counted as a pulse. There are a wide number of receiver designs with various features. These include average heart rate over exercise period, time in a specific heart rate zone, calories burned, breathing rate, built-in speed and distance, and detailed logging that can be downloaded to a computer.

CHAPTER 1

INTRODUCTION

1.1 Background of study

Heart rate, body temperature and blood pressure monitoring are very important parameters of all human body. Doctors use various kind of medical apparatus like thermometer for checking fever or body temperature, BP monitor for blood pressure measurement and heart rate monitor for heart rate measurement. Athlete sport also used to measure their heartbeat per minute in checking their improvement for stamina and health.

Besides, The disease like heart disease most often when cholesterol accumulates and forms “plaque” in a coronary artery. When its impeded the blood flow , the hearts become starved for oxygen and will causing chest pain. Coronary artery disease is the mostly causes of death in Malaysia. This shows that heart disease is one of horror killer living in every human being. During a heart attack, muscle is depraved of oxygen and will literally die if artery remains blocked .This first few hours are critical in saving much of dying muscles and preventing permanent heart damage. Unfortunately, the symptoms vary and the most common reason for critical delays in medical treatment is lack of early warning and patient unawareness. To prevent this type of problem ,Heartbeat monitoring are made for reducing this problem on giving alert to people by showing the heartbeat per minute.

In this project, Arduino are built based heartbeat monitor which counts the number of heartbeats in a minute. Heartbeat sensor module are used which can senses the heartbeat upon putting a finger on the sensor.