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**IOT-BASED ALARM CLOCK WITH ANXIETY CHECKING
SYSTEM**

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ABSTRACT

The growing number of anxiety disorder has driven the development of novel approaches that minimize the effect they have on the everyday lives of individuals like an IoT-based alarm clock with anxiety checking system as insufficient sleep is known to have sweeping negative implications for overall health, including mental health. Time management training is extremely beneficial for reducing negative feelings and boosting personal happiness. The purpose of this study is to check one's anxiety level and to ease their anxiousness with the help of lighting, while this report aims to design a Smart Alarm Clock with Anxiety Detecting Sensor using Arduino Uno Microcontroller. The smart alarm clock utilizes innovative features, such as humidity and temperature sensors, to keep track of one's complete and personalised sleeping atmosphere by determining the humidity and coolness of the room to the ideal level. By incorporating a heartbeat sensor, a device is able to identify and analyze their heartbeat pace linked with anxiety whenever a user feels unsettled and anxious to fall asleep, allowing the individual to understand their anxiety triggers and take appropriate measures to overcome them. LEDs are used as an indicator whether an individual's anxiety level are in high range or not. When heartbeat sensor detect heartbeat to anxiety-level heartbeat, calming colour from RGB light will light up to ease user's anxiety. Other than that, buzzer is used to sound the alarm to help individual to wake up on time. On the simulation, the findings include display of time, date, temperature and humidity on LCD display with two LEDs in red and blue as indicators for the range of heartbeats pace by the pulse sensor, where red indicates high and blue is safe. In hope of this project to contribute to the society for good, the device can wake one's up on time so they can manage their time better as well as to check their anxiety level whenever user is unable to sleep and help to ease their anxiety by producing calming colours.

Keywords—Anxiety, Alarm, Arduino Uno, LED, heartbeat sensor.

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Stress and anxiety have become significant struggles damaging people's well-being in today's fast-paced and demanding environment. Understanding the value of mental wellness, innovations in technology have opened up novel possibilities for monitoring and dealing with these difficulties. An IoT-based alarm clock with a pulse sensor appears to be a potential approach for detecting and helping anxiety in this context. Alarm clocks have traditionally had the simple aim of getting people up at a set hour. With the addition of Internet of Things (IoT) capabilities, these gadgets may now provide more functionality than simply a wake-up call. The alarm clock becomes a valuable tool for tracking anxiety levels in real-time by integrating a heartbeat sensor as well as to ease it.

The heartbeat sensor in the alarm clock continually detects an individual's heart rate, which is strongly linked to their stress and anxiety levels by counting heartbeat pace. The alarm clock is able to recognise rhythms through pulse rate and oscillates in this information that propose elevated anxiety. This data is then analysed and given to the person allowing them to obtain knowledge about their mental state whether anxiety are detected or not to make appropriate measures. RGB light will alter to calming light. Light colours have the ability to reduce anxiety, however their effectiveness varies from person to person. A fast pulse may not be reduced solely by using light colours. Certain colours of light, particularly cooling colours like blue and green, have been linked to relaxation and can help make one feel more at ease and the heart rate may naturally reduce when one is calm and peaceful. Blue light has been proved to help calm both the mind and the body. It can assist to relieve anxiety and provide a sense of calm. According to some research, exposure to blue light can even lower blood pressure and pulse rate, both of which are physiological indications of anxiety. Users may receive personalised therapy where rgb light will turn on ambient lighting to create a relaxing environment.

The goals of developing an IoT-based alarm clock with a heartbeat sensor that can identify anxiety levels and ease anxiety among individuals include exploring the