VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

An ASSIGNMENT REPORT ON

Temperature Control DC Fan Using Arduino

Submitted as subject assignment work,

for the subject

Micro Controller and Embedded System (21CS43)

By

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Under the Guidance of

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2022 – 2023

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CERTIFICATE

This is to certify that Naren N bearing USN 4AL21CS083 has successfully demonstrated the Temperature Control for DC Fan Using Arduinos the assignment work for the subject **"Micro Controller and Embedded System (21CS43)"** and submitted a report during the academic year 2022–23 odd Semester. It is certified that all corrections/suggestions indicated in the presentation session have been incorporated into the report & scored 09 Marks out of 10 and deposited in the departmental library.

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This is to certify that Pavan HL bearing USN 4AL21CS091 has successfully demonstrated the Temperature Control for DC Fan Using Arduino as the assignment work for the subject **"Micro Controller and Embedded System (21CS43)"** and submitted a report during the academic year 2022–23 odd Semester. It is certified that all corrections/suggestions indicated in the presentation session have been incorporated into the report & scored 09 Marks out of 10 and deposited in the departmental library.

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This is to certify that Rahul Gowda bearing USN 4AL21CS110 has successfully demonstrated the Temperature Control for DC Fan Using Arduinoas the assignment work for the subject **"Micro Controller and Embedded System (21CS43)"** and submitted a report during the academic year 2022–23 odd Semester. It is certified that all corrections/suggestions indicated in the presentation session have been incorporated into the report & scored 09 Marks out of 10 and deposited in the departmental library.

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This is to certify that RAMITH S SHETTY bearing USN 4AL21CS114 has successfully demonstrated the Temperature Control for DC Fan Using Arduinos the assignment work for the subject **"Micro Controller and Embedded System (21CS43)"** and submitted a report during the academic year 2022–23 odd Semester. It is certified that all corrections/suggestions indicated in the presentation session have been incorporated into the report & scored 09 Marks out of 10 and deposited in the departmental library.

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This is to certify that S Mohan Raj bearing USN 4AL21CS121 has successfully demonstrated the Temperature Control for DC Fan Using Arduino as the assignment work for the subject **"Micro Controller and Embedded System (21CS43)"** and submitted a report during the academic year 2022–23 odd Semester. It is certified that all corrections/suggestions indicated in the presentation session have been incorporated into the report & scored 09 Marks out of 10 and deposited in the departmental library.

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Temperature Control System for DC Fan using Arduino

1. Introduction:

Temperature control systems play a pivotal role in a wide range of applications, from industrial processes to home appliances. Efficient temperature regulation is essential for maintaining optimal operating conditions, preventing overheating, and ensuring the longevity of equipment. This project focuses on the design and implementation of a temperature control system that utilizes an Arduino microcontroller to regulate the speed of a DC fan based on the ambient temperature.

1.1 Motivation:

The need for temperature control arises in various scenarios, such as computer systems, electronic enclosures, greenhouse environments, and more. By creating a temperature control system using readily available components and an Arduino, we can achieve an automated and precise solution for maintaining desired temperature levels. This project aims to showcase the versatility of the Arduino platform in building practical and cost-effective temperature control systems.

1.2 Objectives:

The primary objectives of this project are as follows:

1. Develop a temperature sensing mechanism using a suitable temperature sensor.
2. Interface the temperature sensor with an Arduino to measure the ambient temperature.
3. Design a control algorithm to dynamically adjust the speed of a DC fan based on temperature readings.
4. Implement the control algorithm to regulate the fan speed effectively.
5. Provide insights into the potential applications and future enhancements of the temperature control system.

1.3 Scope:

The scope of this project includes the hardware and software design necessary for temperature sensing, data processing, and fan speed control. It does not encompass complex control strategies or wireless communication. The project focuses on demonstrating a fundamental temperature control concept that can serve as a foundation for more advanced applications.