VISVESVARAYA TECHNOLOGICAL UNIVERSITY,

BELAGAVI – 590 018

AN ASSIGNMENT REPORT ON

MICROCONTROLLER AND EMBEDDED SYSTEM (21CS43)

Submitted as Subject assignment work

BY

Jnaneshwari U S	**4AL21CS051**
Harshitha S	**4AL21CS047**
Bhoomika M	**4AL21CS028**
Madhura B S	**4AL21CS063**
Bhavana M C	**4AL22CS402**

Under the Guidance of

Mr. Abhijith L Kotian

Assistant Professor

ALVA'S
Education Foundation

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

MOODBIDRI-574225, KARNATAKA

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ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY MIJAR, MOODBIDRI D.K. -574225 KARNATAKA

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that, assignment work for the subject "Microcontroller and Embedded Systems" has been successfully completed and report submitted by **Jnaneshwari U S (4AL21CS051) during** the academic year 2022-2023. It is certified that all corrections/suggestions indicated presentation session have been incorporated in the report and score 9 Marks out of 10 and deposited in the departmental library.

Mrs. Abhijith L Kotian

Sr.Assistant Professor

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY MIJAR, MOODBIDRI D.K. -574225 KARNATAKA

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that, assignment work for the subject "Microcontroller and Embedded Systems" has been successfully completed and report submitted by **Hrashitha S (4AL21CSO47) during** the academic year 2022-2023. It is certified that all corrections/suggestions indicated presentation session have been incorporated in the report and score 9 Marks out of 10 and deposited in the departmental library.

Mrs. Abhijith L Kotian

Sr.Assistant Professor

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY MIJAR, MOODBIDRI D.K. -574225 KARNATAKA

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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This is to certify that, assignment work for the subject "Microcontroller and Embedded Systems" has been successfully completed and report submitted by **Bhoomika M (4AL21CS028) during** the academic year 2022-2023. It is certified that all corrections/suggestions indicated presentation session have been incorporated in the report and score 9 Marks out of 10 and deposited in the departmental library.

Mrs. Abhijith L Kotian

Sr.Assistant Professor

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY MIJAR, MOODBIDRI D.K. -574225 KARNATAKA

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that, assignment work for the subject "Microcontroller and Embedded Systems" has been successfully completed and report submitted by **Madhura B S (4AL21CS063) during** the academic year 2022-2023. It is certified that all corrections/suggestions indicated presentation session have been incorporated in the report and score 9 Marks out of 10 and deposited in the departmental library.

Mrs. Abhijith L Kotian

Sr.Assistant Professor

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY MIJAR, MOODBIDRI D.K. -574225 KARNATAKA

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that, assignment work for the subject "Microcontroller and Embedded Systems" has been successfully completed and report submitted by **Bhavana M C (4AL22CS402) during** the academic year 2022-2023. It is certified that all corrections/suggestions indicated presentation session have been incorporated in the report and score 9 Marks out of 10 and deposited in the departmental library.

Mrs. Abhijith L Kotian

Sr.Assistant Professor

Report on the Automated Self-Opening and Closing Dustbin

INTRODUCTION:

Waste management is a critical aspect of maintaining cleanliness and hygiene in both residential and public spaces. Traditional manual dustbins, while effective in collecting waste, often pose challenges such as the need for physical contact and the potential for waste spillage during use. To address these issues, the Mechanical and Electrical Engineering Society (MCES) embarked on the Smart Dustbin project.

The Smart Dustbin project represents a convergence of mechanical and electrical engineering expertise to design and construct a revolutionary waste disposal solution. At its core, this project seeks to eliminate the need for physical interaction with a dustbin, offering a hands-free, hygienic, and user-friendly experience for disposing of waste.

The motivation behind this project stems from the growing demand for innovative technologies that enhance our daily lives. In an era of smart homes and automation, traditional waste disposal methods have lagged behind. This project endeavors to bridge that gap by infusing automation into a mundane yet essential aspect of our daily routines.

The conventional method of operating a dustbin involves manual intervention, which can be unhygienic and inconvenient. The Smart Dustbin project addresses this issue by developing a dustbin that opens and closes automatically, thus promoting cleanliness and ease of use.

Key Objectives:
The project's primary objectives encompass a holistic approach to modernizing waste disposal:

Design a dustbin with an automated lid-opening mechanism: The project aims to create a dustbin that can autonomously open and close its lid, eliminating the need for manual contact with potentially contaminated surfaces.

Implement a sensor-based system for lid movement: To achieve seamless automation, the dustbin incorporates state-of-the-art sensor technologies capable of detecting when a user approaches and when to open or close the lid.