

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama” Belagavi – 590 018



**PROJECT REPORT
ON
“Smart Floor Cleaning System”**

Submitted in partial fulfillment of the requirements for the award of degree

**BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING**

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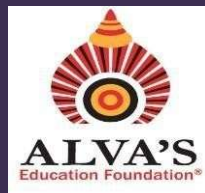
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Under the Guidance of

Mr. Sudhakara H.M

Associate Professor

Department of E&C Engineering



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225.

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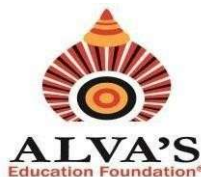
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ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY
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Affiliated to VTU, Belagavi & Approved by AICTE New Delhi. Recognized by Govt. of
Karnataka.
Accredited by NAAC with 'A+' & NBA (ECE & CSE)

CERTIFICATE

Certified that the project work entitled "SMART FLOOR CLEANING SYSTEM " is a bonafide work carried out by

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ABSTRACT

This project is about making a smart floor-cleaning robot that helps clean homes and offices with less human effort. The robot uses an Arduino UNO as the main controller and includes parts like a motor driver (L298N), Bluetooth module (HC-05), servo motors, a water pump, and sensors. It can sweep, mop, and spray water on the floor, making it useful for both dry and wet cleaning. The robot is controlled by a mobile app using Bluetooth, so users can easily move it and start or stop cleaning from their phone. Servo motors help in lifting and lowering the cleaning arms, and the water pump sprays water before mopping the surface. IR and ultrasonic sensors help the robot detect walls, objects, or other obstacles so that it can change direction and continue cleaning. The robot is powered by a rechargeable battery, which makes it easy to move around without wires. It is designed to be simple, low-cost, and suitable for all floor types in homes or offices. The robot also helps save time and energy, especially for busy people. The project shows how basic electronic parts and programming can be used together to build a smart and helpful cleaning robot. In the future, this robot can be improved with more features like automatic charging or scheduling.

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TABLE OF CONTENTS

TITLE	Page no.
ABSTRACT	i
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF FIGURES	vi
CHAPTER 1: INTRODUCTION	1-11
1.1 Prelude	1
1.2 Importance of Smart Floor Cleaning System	3
1.3 Block Diagram	5
1.4 Motivation	6
1.5 Objective of the Project	7
1.6 Issues of the Project	8
1.7 Tools Used	9
1.7.1 Hardware Tools	9
1.7.2 Software Tools	9
1.8 Applications	10
 CHAPTER 2: LITERATURE SURVEY	 12-26
2.1 Literature Review	12
2.2 Summary	26
 CHAPTER 3: PROPOSED SYSTEM	 27-34
3.1 Introduction	27
3.2 Advantages	27
3.3 Workflow of the System	30
3.4 Methodology	33
3.4.1 System Design & Architecture	34

3.4.2	Path Planning & Navigatin	
3.4.3	Cleaning Mechanism	
3.4.4	Energy Management	
3.4.5	Control System & Software Implementation	
3.4.6	Testing & Validation	
3.4.7	Integration With IoT & Remote Monitoring	
3.4.8	Final Evaluation & Optimization	
3.5	Summary	

CHAPTER 4: HARDWARE AND SOFTWARE REQUIREMENTS 35-59

4.1	Introduction	
4.2	Block Diagram	
4.3	Circuit Diagram	35
4.4	Hardware Components	35
4.4.1	Arduino UNO	35
4.4.2	Servo Motor	37
4.4.3	Motor Driver	38
4.4.4	Water Pump	40
4.4.5	DC Motors	41
4.4.6	Bluetooth Module HC-05	42
4.4.7	Ultrasonic Sensor	44
4.4.8	IR Sensor	45
4.4.9	Jumper Wire	47
4.4.10	2-Channel Relay Module	48
4.4.11	Rocker Switch	49
4.4.12	3.7 v Lithium Ion Rechargeable Battery	
4.4.13	9v HW Battery	
4.4.14	Robot Wheels	51
4.5	Software Requirements	
4.5.1	Microcontroller Programming Tool(Arduino UNO)	53
4.5.2	Arduino Bluetooth Controller(By Broxcode)	54
4.5.3	Libraries Required	55

4.5.3.1 Servo.h	55
4.5.3.2 NewPing.h	56
4.5.3.3 SoftwareSerial.h	56
CHAPTER 5: HARDWARE IMPLEMENTATION	60-67
5.1 Introduction	60
5.2 Operation Of Arduino UNO	60
5.3 Operation Of IR Sensor	61
5.4 Operation Of Ultrasonic Sensor	62
5.5 Operation Of Bluetooth Module	63
5.6 Operation Of Motor Driver	64
5.7 Operation Of 2-Channel Relay Module	65
5.8 Mechanism Of Servomotor	
5.9 Mechanism Of DC Motor	
5.10 Mechanism Of Waterpump	
CHAPTER 6: SOFTWARE IMPLEMENTATION	68-75
6.1 Introduction	68
6.2 Software Development Environment	68
6.3 Key Function Of The Software	71
6.3.1 Setup Function	71
6.3.2 Main Loop (Loop Function)	
6.3.3 Sensor Data Processing	
6.3.4 Movement Control	
6.3.5 Obstacle Avoidance Logic	
6.3.6 Cleaning Mechanism	
6.3.7 Communication	
6.3.8 Energy Management	72
6.4 Interfacing Of Ultrasonic Sensor with Arduino UNO	73
6.5 Interfacing Of Bluetooth Module HC-05 with Arduino UNO	
6.6 Interfacing Of IR Sensor with Arduino UNO	

CHAPTER 7: EXPERIMENTAL RESULTS	76-81
7.1 Introduction	76
CHAPTER 8: CONCLUSION	82-83
8.1 Conclusion	82
8.2 Future Scope	83
REFERENCES	84
APPENDIX	91

LIST OF FIGURES

Figure no.	Particulars	Page no.
1.1	Block Diagram	3
3.1	Flowchart Of The Proposed System	21
4.1	Block Diagram Of The Proposed System	28
4.2	Circuit Diagram	29
4.3	Arduino UNO	30
4.4	Servo Motor	32
4.5	Motor Driver	33
4.6	Water Pump	34
4.7	DC Motor	36
4.8	Bluetooth Module HC-05	37
4.9	Ultrasonic Sensor	38
4.10	IR Sensor	39
4.11	Jumper Wire	40
4.12	2-Channel Relay Module	42
4.13	Rocker Switch	43
4.14	3.7 v Lithium Ion Rechargeable Batteery	44
4.15	9v HW Battery	45
4.16	Robot Wheel	46
4.17	Arduino IDE	48
4.18	Bluetooth App Dashboard	49

4.19	Bluetooth App Controller	49
5.1	Operation Of Arduino UNO	54
7.1	Code Upload & Configuration	82
7.2	Movement	82
7.3	Bluetooth App Dashboard	83
7.4	Bluetooth App Controller	83
7.5	Obstacle Detection Test	84

LIST OF ABBREVIATIONS

DC	DIRECT CURRENT
AC	Alternating Current
IR	Infrared Sensor
PWM	Pulse Width Modulation
LED	Light Emiting Diode
LCD	Liquid Crystal Display
BLDC	Brushless Direct Current
HC-05	Host Control - 05
ESP 32	Espressif Systems Processor 32 Bit
UART	Universal Asynchronous Receiver Transmitter
IC	Integrated Circuit
I2C	Inter Integrated Circuit
SPI	Serial Peripheral Interface
VCC	Voltage Common Collector
GND	Ground
SRAM	Static Random Access Memory
IDE	Integrated Development Environment
SLAM	Simultaneous Localization & Mapping
AI	Artificial Intelligence