VISVESVARAYA TECHNOLOGICAL UNIVERSITY,

BELAGAVI-590018

Mini Project Report On

"Converting Normal Fan into Smart Fan"

A report submitted in partial fulfillment of the requirements for

MINI PROJECT

In

Computer Science and Engineering (IOT , Cyber Security including Blockchain Technology)

Submitted by

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ALVA'S
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (IOT , CYBER SECURITY INCLUDING BLOCKCHAIN TECHNOLOGY)

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CERTIFICATE

This is to certify that the Project entitled "**Converting Normal Fan into Smart Fan**" has been successfully completed by

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the bonafide students of **Department of Computer Science & Engineering (IOT , Cyber Security including Blockchain Technology), Alva's Institute of Engineering and Technology** in **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (IOT , CYBER SECURITY INCLUDING BLOCKCHAIN TECHNOLOGY)** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2023–2024. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

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ABSTRACT

This project focuses on upgrading a conventional ceiling fan into a smart device by integrating IoT (Internet of Things) technologies, enabling enhanced functionality, convenience, and energy efficiency. The smart fan is designed to feature remote control via a smartphone application, voice command integration through virtual assistants such as Alexa or Google Assistant, and automated adjustments based on environmental factors like temperature, humidity, and occupancy. The system is built around a microcontroller, such as Arduino or ESP32, which acts as the core controller for the fan's operations. Sensors continuously monitor ambient conditions, while wireless communication modules, such as Wi-Fi or Bluetooth, ensure seamless connectivity between the user and the device. This allows users to effortlessly adjust fan speed, switch modes, and monitor power consumption from anywhere. The fan's intelligent capabilities also include scheduling and geofencing, offering personalized comfort while optimizing energy usage. By retrofitting existing appliances, this project demonstrates how traditional household devices can be transformed into modern, smart solutions, reducing the need for costly replacements and contributing to sustainability.

Beyond basic functionality, the system employs machine learning algorithms to analyze user behavior and predict preferences, enabling the fan to autonomously adapt its settings for optimal comfort and efficiency. This predictive intelligence enhances the user experience while significantly reducing unnecessary energy consumption. The project's sustainability focus lies in reusing existing fans, minimizing electronic waste, and promoting a greener alternative to replacing appliances with entirely new ones. Cost-effectiveness is a key consideration, as the retrofit design requires minimal hardware modifications and is accessible to a broad audience. This innovative approach bridges the gap between traditional appliances and smart technology, making smart home adoption feasible and environmentally friendly. By combining advanced IoT features, data-driven intelligence, and a commitment to sustainability, this project exemplifies how modern technology can revolutionize everyday devices, improving convenience, energy management, and environmental impact in an increasingly connected world.