"ALEXA USING RASPBERRY PI"

A SEMINAR REPORT

Submitted in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

Submitted to

SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

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CERTIFICATE

This is to certify that the Seminar report entitled "Alexa using Raspberry Pi" submitted by Rushikesh M., Manav B., is a record of the bonafide work carried out by him under my guidance, and it is approved for the partial fulfillment of requirement of Savitribai Phule Pune University for the award of the degree **Bachelor of Engineering (Electronics & Telecommunication).**

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ABSTRACT

This project explores the integration of Amazon Alexa with Raspberry Pi to create a versatile voice controlled system capable of enhancing smart home automation. With the rapid advancements in Internet of Things (IoT) technology, the demand for efficient and user-friendly interfaces for home automation has significantly increased. The Raspberry Pi, renowned for its affordability and flexibility, serves as the central hub for this system, enabling seamless communication with various smart devices.

The system utilizes a microphone array for voice input, which captures commands and sends them to the Alexa Voice Service (AVS) for processing. AVS interprets these commands through advanced natural language processing and returns responses or actions. The Raspberry Pi also manages audio output through a connected speaker system, ensuring users receive timely feedback. Additionally, the integration facilitates the control of various smart home devices, offering a comprehensive solution for modern living.

This paper discusses the hardware and software components necessary for the successful implementation of the project, including network connectivity, API communication, and optional sensor integration. By demonstrating the capabilities and potential applications of this system, the project highlights the transformative role of voice recognition technology in enhancing everyday tasks and fostering a smarter home environment.

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