A PRELIMENERY REPORT ON

CONTROLLING ROBOT BY USING GOOGLE ASSISTANT, BLUETOOTH AND VOICE COMMAND

SUBMITTED TO THE SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE
IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE
OF

BACHELOR OF COMPUTER ENGINEERING

SUBMITTED BY

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CERTIFICATE

This is to certify that the project report entitles

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Submitted by

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is a bonafide student of this institute and the work has been carried out by him under the supervision of **Prof. Anil Lohar** and it is approved for the partial fulfillment of the requirement of Savitribai Phule Pune University, for the award of the degree of **Bachelor of Engineering** Computer Engineering.

Prof. Anil Lohar.
Guide
Department of Computer Engineering

Prof. Rama Gaikwad
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Dr. S. B. Thakare
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Place: Pune

Date: 09/11/2023

ACKNOWLEDGEMENT

Certainly, controlling a robot using Google Assistant, Bluetooth, and voice command acknowledgment is an intricate process that demands the integration of various technologies and components. This project would involve using a microcontroller board like Arduino or Raspberry Pi for the robot's control, a compatible Bluetooth module, motors, motor drivers, and a power source. With deep sense of gratitude we would like to thank all the people who have lit our path with their kind guidance. We are very grateful to these intellectuals who did their best to help during our project work.

The special gratitude goes to **Prof. Anil Lohar** excellent and precious guidance in completion of this work. We thanks to all the Teaching and non-teaching for their appreciable help for our working project. With various industry owners or lab technicians to help, it has been our endeavor throughout our work to cover the entire project work.

We remain indebted to **Prof. Rama Gaikwad**, Head Of Department Computer Engineering Department for his timely suggestion and valuable guidance.

It is our proud privilege to express a deep sense of gratitude to **Prof. Dr. Sunil Thakare** Principal of Anantrao Pawar College of Engineering and Research, Pune for his comments and kind permission to complete this project.

We are also thankful to our parents who provided their wishful support for our project completion successfully. And lastly we thank our all friends and the people who are directly or indirectly related to our project work. Furthermore, the project would require thorough testing of the entire system to ensure seamless communication between Google Assistant and the robot, as well as reliable execution of voice commands. A rigorous testing process would help identify and resolve any potential issues related to connectivity, command interpretation, or hardware functionality. Collaborating with the computer department would provide valuable insights and expertise, particularly in terms of optimizing the software and hardware components, ensuring data security, and addressing any technical challenges that may arise during the development and implementation phases. Their involvement could significantly contribute to the overall success of the project and help streamline the integration of various technologies.

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ABSTRACT

The integration of contemporary technologies has led to the development of an innovative system for controlling a robot through the utilization of Google Assistant, Bluetooth, and voice commands. This project aimed to create a user-friendly and efficient mechanism for remote robot operation, enhancing the accessibility and convenience of controlling robotic systems in various categories. Through the seamless integration of Google Assistant, users were able to issue commands to the robot using natural language, simplifying the control process and enabling intuitive interaction. Leveraging the robust capabilities of the Google Assistant platform, users could effortlessly navigate the robot's functionalities, including navigation, manipulation, and various other tasks, all through simple voice commands. The implementation of Bluetooth technology facilitated a reliable and secure wireless communication channel between the controlling device and the robot, ensuring real-time transmission of commands and data without compromising on data integrity or security. This enabled a smooth and responsive control experience, empowering users to operate the robot from a distance with minimal latency.

Furthermore, the development of a sophisticated voice recognition system enabled the system to accurately interpret and execute a diverse range of voice commands, thereby providing users with a seamless and intuitive control interface. The voice recognition system's robust design and efficient processing capabilities enhanced the system's responsiveness and accuracy, enabling precise and prompt execution of user commands. The successful integration of these technologies culminated in a comprehensive and user-centric control system that revolutionizes the way robots are operated. This system not only simplifies the control process but also enhances the overall user experience, making robotic operations more accessible and intuitive for users across various domains, including home automation, industrial applications, and educational environment.

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LIST OF ABBREVATIONS

ABBREVIATION	ILLUSTRATION
API:	Application Programming Interface
IDE:	Integrated Development Environment
SDK:	Software Development Kit
UI:	User Interface
UX:	User Experience
SDLC:	Software Development Life Cycle
AI:	Artificial Intelligence
IoT:	Internet of Things
SSL:	Secure Sockets Layer
HTTP:	Hypertext Transfer Protocol

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