

VOICE BASED COMPLAINT REGISTRATION SYSTEM**Narra Anjali, Sandela Purnananda, Rachuti Rithvika**Final Year Students, Bachelor of Technology, Department of Artificial Intelligence & Data Science
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J.B. Institute of Engineering and Technology (UGC Autonomous), Hyderabad, Telangana, India**ABSTRACT**

The Voice Based Complaint Registration System is developed to simplify complaint registration using voice commands. It convert user speech into text through speech recognition technology. The system stores complaint details securely for easy management and tracking. It improves accessibility, reduces manual effort, and saves user time. This project provides an efficient, user-friendly, and smart digital complaint registration solution.

Keywords:

Speech Recognition, Voice-Based System, Complaint Registration, Speech-to-Text, Database Management, Voice commands.

INTRODUCTION

The Voice Based Complaint Registration System is a smart application developed to simplify and modernize the complaint registration process using voice technology. Traditional complaint systems require manual typing, which can be time-consuming and difficult for some users. This project allows users to register complaints through voice commands, making the system faster, easier, and more accessible. The system converts spoken input into text using speech recognition technology and stores the complaint details securely in a database. The main objective of this project is to improve user convenience, reduce manual effort, and provide an efficient digital platform for complaint management.

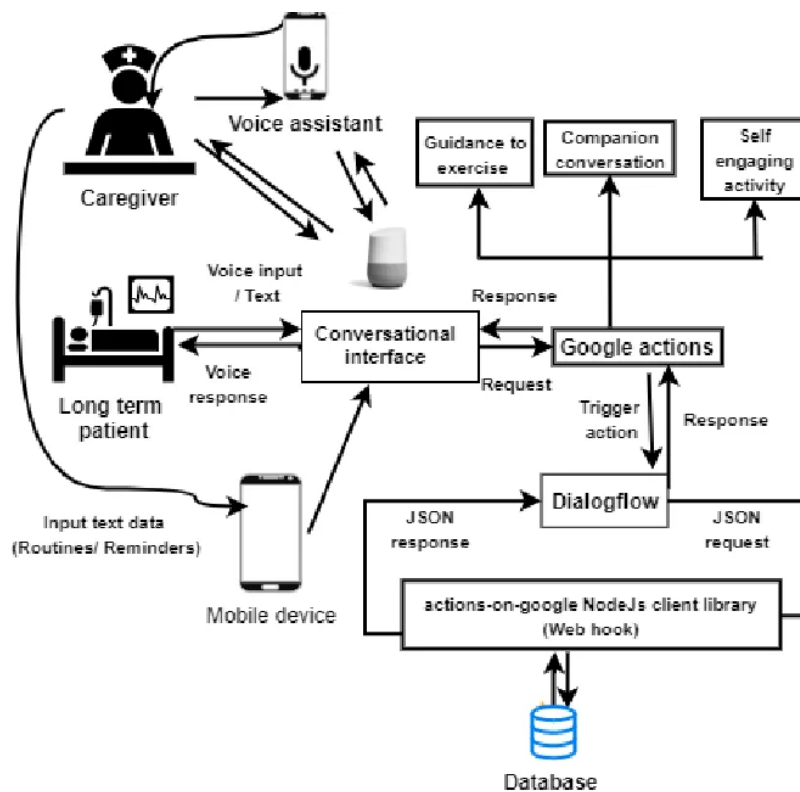
OBJECTIVES

The main objective of the Voice Based Complaint Registration System is to develop an efficient and user-friendly platform for registering complaints through voice commands. The system aims to convert spoken input into text using speech recognition technology and store the complaint details securely in a database. It is designed to reduce manual effort, improve accessibility for users, save time, and provide a faster and more convenient complaint management process.

- To develop a voice-based system for easy complaint registration.
- To convert user speech into text using speech recognition technology.
- To store and manage complaint details securely in a database.
- To reduce manual effort and improve user convenience.
- To provide a fast, efficient, and accessible complaint management system.

METHODOLOGY

The methodology of the Voice Based Complaint Registration System involves collecting user complaints through voice input using a microphone. The spoken data is processed using speech recognition technology, which converts voice into text format. The converted text is then validated and stored securely in a database for complaint management and tracking. The system also provides an easy-to-use interface to improve user interaction and overall efficiency.



Feature	Google STT	IBM Watson	Azure STT	Whisper
Languages Supported	125+	14+	100+	99+
Offline Mode	No	Partial	No	Yes
Accuracy (%)	95–98%	88–93%	94–97%	93–97%
Real-time Processing	Yes	Yes	Yes	Limited
Cost Model	Pay-per-use	Freemium	Pay-per-use	Open Source

RESULTS AND DISCUSSION

The Voice Based Complaint Registration System was successfully developed and implemented to simplify the process of registering complaints through voice commands. The system effectively converts the user’s speech into text using speech recognition technology and stores the complaint details in a database for further processing. During testing, the system showed good performance in recognizing voice inputs and accurately registering complaints without requiring manual typing. This helped reduce the time and effort involved in the complaint submission process.

The voice recognition module was able to identify and process different types of complaints such as water supply issues, electricity problems, road damage, network issues, and public service complaints. After processing the voice input, the system automatically generated a complaint record containing details such as complaint ID, user information, complaint description, date and time, and complaint status. The system also provided voice prompts and confirmation messages to guide users during the registration process, making it easy to use even for people with limited technical knowledge.

TC ID	Test Case	Input	Expected	Result
TC01	User Registration	Valid name, phone, email	Account created	PASS
TC02	Login with valid credentials	Correct email/password	JWT token returned	PASS
TC03	Login with wrong password	Wrong password	Error 401 returned	PASS
TC04	Voice complaint submission	Clear audio recording	Complaint registered	PASS
TC05	Track complaint status	Valid complaint ID	Status displayed	PASS
TC06	Language switch to Hindi	Language = 'hi-IN'	Hindi STT used	PASS
TC07	No microphone access	Mic permission denied	Error message shown	PASS

ACKNOWLEDGEMENT

We express our sincere gratitude to the Department of Artificial Intelligence and Data Science, J.B. Institute of Engineering and Technology, for providing the facilities and support required for this research work. We are especially thankful to our guide, Mrs.J.Jyotsna, Assistant Professor, for her valuable guidance, suggestions, and continuous encouragement throughout the project.

We also thank the teaching staff and non-teaching staff for their support and constructive feedback, which greatly helped in improving this work. Finally, we express our heartfelt gratitude to our families for their constant motivation and encouragement. Above all, we thank God for His blessings and guidance throughout the successful completion of this project.

CONCLUSION

The Voice Based Complaint Registration System was successfully designed and developed to provide an easy and efficient method for registering complaints using voice commands. The system effectively converts user speech into text, processes the complaint details, and stores the information in a database for further action. This project reduced the need for manual typing and made the complaint registration process faster and more user-friendly. The system proved to be helpful for users with limited technical knowledge, as well as for illiterate and visually impaired individuals, by allowing them to submit complaints through voice interaction. The project also demonstrated the practical application of speech recognition technology in real-world complaint management systems.

Although the system performed effectively, certain limitations such as background noise and accent variations affected speech recognition accuracy in some cases. Future improvements can include multilingual support, enhanced AI-based voice processing, and mobile application integration to increase the system's efficiency and usability.

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