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**International Journal of Engineering Technology Research & Management**

Published By:

<https://www.ijetrm.com/>

## **SMART SUPPORT FOR SMARTER STUDENTS: DEVELOPING A CHATBOT FOR AN ENGINEERING COLLEGE WEBSITE**

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### **ABSTRACT**

EduBot is an AI-powered chatbot developed using Dialogflow to streamline student queries and administrative processes at JBIET. It provides instant, 24/7 assistance on topics such as admissions, available courses, rankings and accreditations, transportation, fees, and campus facilities. By leveraging intent recognition, webhook integrations, and structured responses, EduBot enhances user experience by delivering quick and accurate information. This chatbot reduces the workload on administrative staff, improves accessibility, and ensures a seamless, interactive communication platform for students, faculty, and prospective applicants. Future enhancements will focus on voice support, multilingual capabilities, personalized responses, and mobile app integration to further improve its functionality.

### **Keywords:**

EduBot, AI-powered chatbot, Dialogflow, Student queries, Admission & courses, Rankings & transportation, Intent recognition, webhook integration, User experience, Multilingual & voice support.

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### **INTRODUCTION**

The EduBot project leverages AI technology to enhance communication within academic institutions. Developed using Dialogflow, EduBot provides instant, 24/7 assistance to students and staff, addressing queries related to admissions, courses, rankings, transportation, and more. By streamlining information access and integration real-time responses, EduBot aims to improve the overall user experience, reduce administrative workload, and provide seamless, interactive support for the college community.

### **OBJECTIVES**

The main objective of the EduBot project is to enhance information accessibility and streamline academic assistance for students, faculty, and staff through an AI-powered chatbot. Specifically, this project aims to provide instant responses to queries related to admissions, courses and general campus information; improve user engagement by reducing the dependency on manual support; integrate real-time updates and automated assistance for administrative efficiency.

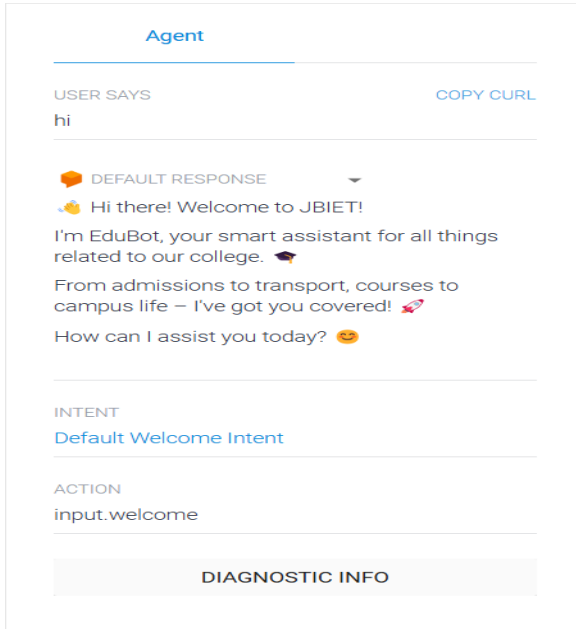
### **METHODOLOGY**

EduBot was developed using a qualitative and system development approach, analysing academic support challenges at JBIET. Built with Google Dialogflow, Fast API, and MySQL, it handles student and staff queries dynamically. User feedback guided iterative improvements for enhanced effectiveness.

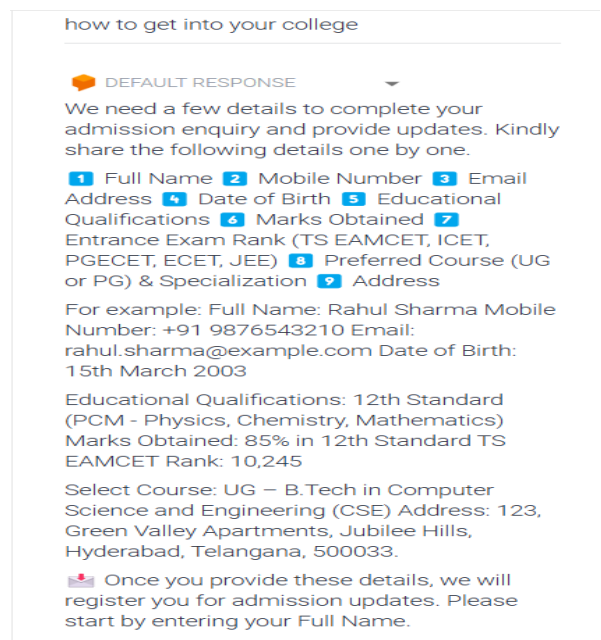
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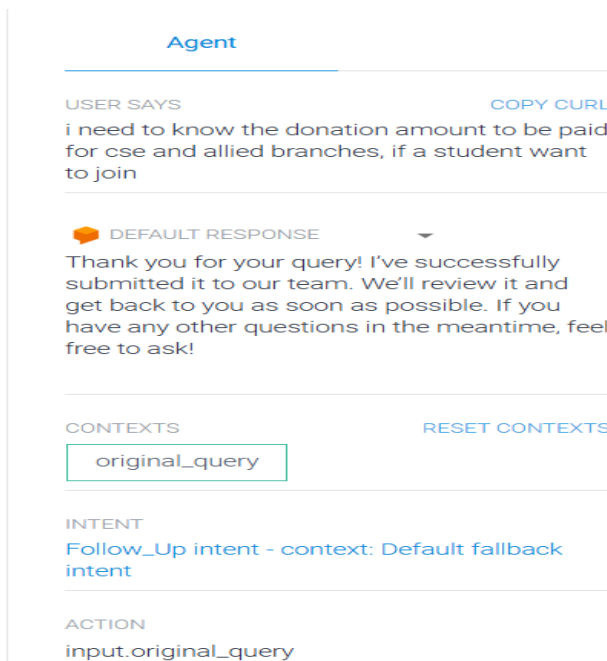
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**Figure 1 Conversation Starts**



**Figure 2 Chatbot responds based on user input**



**Figure 3 User asks something chatbot doesn't know**

	Id	user_query	submission_time
▶	1	excited to know the sports facilities at your coll...	2025-02-05 16:39:50
	2	i need to know the library timings	2025-02-06 10:22:24
	3	i want to know about placements	2025-02-06 11:20:32
⊛	NULL	NULL	NULL

	Id	user_query	submission_time
▶	1	excited to know the sports facilities at your coll...	2025-02-05 16:39:50
	2	i need to know the library timings	2025-02-06 10:22:24
	3	i want to know about placements	2025-02-06 11:20:32
	4	i need to know the donation amount to be paid ...	2025-03-04 06:59:14
⊛	NULL	NULL	NULL

**Figure 4,5 Catching the user inputs at backend**

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### RESULTS AND DISCUSSION

EduBot efficiently handles student and staff queries through Google Dialogflow by recognizing intents and providing accurate responses. Conversations begin with a structured greeting, guiding users to relevant academic information. When encountering unknown queries, EduBot logs in the backend for further training, ensuring continuous improvement. This adaptive approach enhances user experience, query resolution, and institutional efficiency at JBIET.

### ACKNOWLEDGEMENT

We extend our heartfelt gratitude to the faculty and administration of JBIET for their unwavering support and valuable insights throughout the development of EduBot. Special thanks to our mentors and colleagues for their constructive feedback, which greatly enhanced the project. We appreciate the guidance provided by Google Dialogflow and FastAPI resources, which played a crucial role in implementation. Lastly, we express our deepest gratitude to our families and friends for their encouragement and to God for his endless wisdom and strength.

### CONCLUSION

The development of the JBIET EduBot using Dialogflow has significantly improved the way students, faculty, and prospective applicants access information. By automating responses to queries related to admissions, available courses, rankings and accreditations, transportation, and other essential college services, the chatbot reduces manual effort while enhancing user experience. With AI-powered intent recognition, webhook integrations, and structured responses, EduBot provides quick, accurate, and interactive assistance. This implementation not only streamlines administrative tasks but also ensures 24/7 availability, making information easily accessible anytime.

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