Chatbot to respond to text queries pertaining to various Acts, Rules, and Regulations applicable to Mining industries

A PROJECT REPORT

Submitted by,

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Under the guidance of,

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in partial fulfilment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER ENGINEERING
At

PRESIDENCY UNIVERSITY
BENGALURU
MAY 2025

PRESIDENCY UNIVERSITY

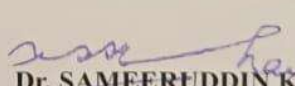## PRESIDENCY SCHOOL OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that the Project report **"Chatbot to respond to text queries pertaining to various Acts, Rules, and Regulations applicable to Mining industries"** being submitted by "Darshan S M , T. Bhavitha Reddy , Manohar S V, K P PAWAN, Chetan N" bearing roll number(s) "20211COM0040, 20211COM0021, 20211COM0043, 20211COM0067, 20211COM0057" in partial fulfilment of the requirement for the award of the degree of Bachelor of Technology in Computer Engineering is a bonafide work carried out under my supervision.

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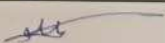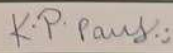PSCS
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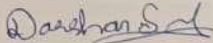
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DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **"Chatbot to respond to text queries pertaining to various Acts, Rules, and Regulations applicable to Mining industries"** in partial fulfilment for the award of Degree of **Bachelor of Technology** in **Computer Engineering**, is a record of our own investigations carried under the guidance of **Ms.Amirtha Preeya V, Assistant Professor, Presidency School of Computer Science & Engineering, Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

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ABSTRACT

Indian mining industry is governed by a range of Acts, Rules, Regulations, and directions, providing for safe, legal, and effective operation. Government publications published by government bodies like the Ministry of Coal and Directorate General of Mines Safety (DGMS) include a vast collection of statutory and regulatory publications.Some of the most prominent legislative provisions in the coal industry are the Coal Mines Act, 1952; the Indian Explosives Act, 1884; the Colliery Control Order, 2000; the Colliery Control Rules, 2004; and the Coal Mines Regulations, 2017. Apart from these, labor laws such as the Payment of Wages (Mines) Rules, 1956 and land laws such as the CBA (Coal Bearing Areas Act), LA (Land Acquisition Act), and R&R (Rehabilitation and Resettlement) policies add to the legislator complexity of the coal industry. It is difficult for the stakeholders such as mining companies, regulating authorities, legal advisors, and workers to trawl through this large amount of legal documents. For the convenience of accessing such information, a Smart Automation solution in the form of an AI and NLP-based chatbot is suggested. With the assistance of AI and NLP, the chatbot will understand natural language queries and make matching real-time replies. The chatbot will be trained on sequentially structured database of different Acts, DGMS circulars, Rules, and Committee of Inquiry (CoI) proceedings. Given the emphasis on identifying context and intent of questions, the chatbot will deliver context-based and correct answers. Continuous online availability 24x7, the chatbot will enable users to remotely scan legal and regulatory inputs at any point in time—facilitating decision-making, diminishing legal uncertainty, and enhancing augmented compliance in mining. With the addition of land acquisition and resettlement law in its kitty, the chatbot will answer a variety of questions and thus become an omnifunctional legal assistant. It also enables the creation of a composite Management Information System (MIS) for the benefit of assisting the digital thrust of the Ministry of Coal. In the Smart Automation theme, the project illustrates the real-world use of AI for stakeholder assistance and compliance. Legal information is easily accessible, compliance is facilitated, and governance and transparency of mining are ensured through the chatbot.

ACKNOWLEDGEMENT