A REPORT ON

MineMate: Your intelligent AI assistant for mining laws, regulations and industry insights

Submitted by,

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Under the guidance of,

Mr. Pakruddin B

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND TECHNOLOGY (BIG DATA)

AT

PRESIDENCY UNIVERSITY

BENGALURU

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PRESIDENCY UNIVERSITY

PRESIDENCY SCHOOL OF COMPUTER SCIENCE ENGINEERING

CERTIFICATE

This is to certify that the Project report **MineMate: Your Intelligent AI assistant for mining laws, regulations and industry insights** being submitted by **Sathvik N B Math**, **Vijayeendra N**, **Adithya H Hegde**, bearing roll number(s) **20211CBD0040**, **20211CBD0021**, **20211CBD0027**, in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Technology (Big Data) is a Bonafide work carried out under my supervision.

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DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **MineMate: Your intelligent AI assistant for mining laws, regulations and industry insights** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Technology (Big Data)**, is a record of our investigations carried under the guidance of **Mr. Pakruddin B, Assistant Professor, Presidency School of Computer Science Engineering & Information Science, 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

Navigating mining regulations in India is often a labour-intensive process, requiring deep familiarity with complex legal frameworks such as the Coal Mines Act, the Indian Explosives Act, and various DGMS circulars. These documents are typically scattered across multiple platforms and written in dense legal language, making it difficult for stakeholders to access relevant information quickly and confidently. To address this gap, *MineMate* is proposed as an intelligent, AI-powered chatbot designed to simplify and accelerate the retrieval of mining-related legal information through natural, conversational interactions. By integrating the advanced language processing capabilities of Llama 3.2, the system is capable of understanding user intent, interpreting sector-specific terminology, and providing concise, accurate responses to queries. The backend architecture is built using Flask, connected to a secure MySQL database, while the frontend utilizes React.js to deliver a responsive and intuitive user experience. Real-time web scraping ensures that the chatbot remains up to date with the latest legal amendments and notifications from official sources. In addition, the system supports multilingual interaction and voice-based input, enhancing accessibility for users with varied linguistic backgrounds and levels of digital literacy.

Preliminary testing of the chatbot indicates high levels of accuracy, fast response times, and strong user satisfaction, particularly in scenarios where timely regulatory compliance is essential. Overall, *MineMate* demonstrates the potential of domain-specific AI tools to enhance transparency, improve operational efficiency, and reduce the reliance on manual legal interpretation in one of the most heavily regulated industries in India.

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