



Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: Ministry of Coal

PS Code: 1312

Problem Statement Title: Chatbot to respond to text queries pertaining to various Acts, Rules, and Regulations applicable to Mining industries

Team Name: Botters

Team Leader Name: Vrishank Raina

Institute Code (AISHE):U-0945

Institute Name: Vellore Institute of Technology - Andhra Pradesh

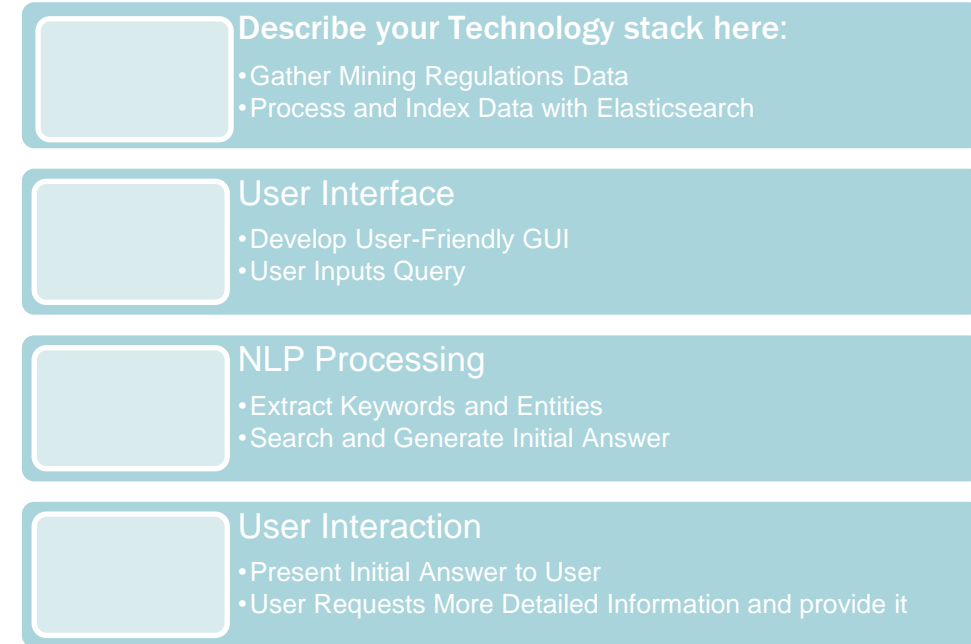
Theme Name: MineGuide

Idea/Approach Details

Describe your idea/Solution/Prototype here:

- Collect information about the various rules and regulation related to mining
- Create an user-friendly GUI(interface) which lets the user asks their doubts pertaining to the laws
- Have an NLP process the data from the information collected to extract relevant information for an answer
- The user then can either ask for a more optimized answer or can get detailed information about it

FLOWCHART:



Describe your Technology stack here:

- | | |
|----------------|--------------|
| ➤ Python | ➤ SQLAlchemy |
| ➤ Transformers | ➤ Threading |
| ➤ Tensorflow | ➤ os |
| ➤ Tkinter | ➤ pip |
| ➤ Request | |
| ➤ Json | |

Idea/Approach Details

Describe your Use Cases here

- 1. Mining Industry Professionals:** Regulatory Compliance: Mining companies can use the system to stay updated on the latest mining regulations and ensure they are in compliance with local, regional, and international laws.
- 2. Environmental Agencies:** Environmental Impact Assessment: Environmental agencies can use the system to assess the environmental impact of mining activities and ensure they align with environmental regulations.
- 3. Legal Experts and Consultants:** Legal Research: Lawyers and legal consultants can utilize the system to conduct legal research on mining regulations and provide accurate advice to their clients.
- 4. Government Officials:** Regulation Development: Government officials can access a repository of existing mining regulations and use this information to draft or update mining laws and policies.
- 5. Education and Research:** Students and researchers can use the system to access a wealth of information for academic purposes, such as writing papers or conducting research on mining regulations.

Describe your Dependencies / Show stopper here

- 1. Data Quality and Availability Dependency:** The accuracy and completeness of the mining regulations data are crucial for the success of your system. You depend on having access to up-to-date and reliable information.
 - a) Showstopper: Inaccurate or outdated data can lead to incorrect information. Ensuring data quality is a priority.
- 2. NLP Model and Algorithms Dependency:** The natural language processing (NLP) model and algorithms used to interpret user queries and extract information from regulations are fundamental to the solution.
 - b) Showstopper: If the NLP model or algorithms are quite slow to process but ensuring correct information is a priority
- 3. API dependencies:** The detailed information can be created by asking an advanced chatbot(like openai's chatgpt) and extracting the relevant information from it using the api request we have put through
 - c) **Showstopper:** The API has a daily limit of 10 request so upscaling is gonna need more money

Team Member Details

Team Leader Name: Vrishank Raina

Btech

CSE Core

Year I

Team Member 1 Name: Akshay Kulshreshtra

Btech

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Year I

Team Member 2 Name: Baishakhi Sahoo

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Year I