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
- Transformers
- Tensorflow
- Tkinter
- Request
- Json
- SQLAlchemy
- Threading
- os
- pip

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a) Showstopper: Inaccurate or outdated data can lead to incorrect information.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	CSE AI/ML	Year I

Team Member 2 Name: Baishakhi Sahoo

Btech	CSBS	Year I

Team Member 3 Name: Advaya Verma

Btech	CSBS	Year I

Team Member 4 Name: Balaji Asawa

Btech	CSE Core	Year I

Team Member 5 Name: Aditya Verma

Btech	CSE AI/ML	Year I