**Project Initialization and Planning Phase**

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| Date | 15 March 2024 |
| Team ID | 740139 |
| Project Title | Acoustic Fire Extinguishing prediction |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) template**

The proposal report aims to predict the effectiveness of acoustic fire extinguishing methods using machine learning, enhancing fire safety and prevention techniques. Key features include a machine learning-based prediction model and real-time decision-making support.

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| **Project Overview** | |
| Objective | The primary objective is to innovate fire extinguishing methods by implementing acoustic wave technology, ensuring safer and more environmentally friendly fire suppression techniques |
| Scope | The project involves a comprehensive assessment and enhancement of fire extinguishing processes, incorporating acoustic wave technology for a more efficient and effective system. |
| **Problem Statement** | |
| Description | Current fire extinguishing methods can be inefficient, costly, and harmful to the environment. Acoustic wave technology offers a potential solution to these issues |
| Impact | Solving these issues will result in improved safety, reduced environmental impact, and potentially lower costs, contributing to better fire management and protection |
| **Proposed Solution** | |
| Approach | Utilizing acoustic wave technology and machine learning techniques to predict and effectively extinguish fires, creating a robust and adaptive fire suppression system. |
| Key Features | Development and implementation of predictive models for acoustic wave- based fire extinguishing.<br> - Real-time decision-making capabilities. |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | T4 GPU |
| Memory | RAM specifications | 16GB |
| Storage | Disk space for data, models, and logs | 1 TB SSD |
| **Software** | | |
| Frameworks | Python frameworks | TensorFlow, PyTorch |
| Libraries | Additional libraries | Scikit-learn, pandas, numpy, matplotlib, seaborn |
| Development Environment | IDE | Jupyter Notebook, pycharm |
| **Data** | | |
| Data | Source, size, format | Research papers, industrial datasets, CSV, JSON |