Project Design Phase-I
Proposed Solution Template

Date	18 October 2022
Team ID	PNT2022TMID25918
Project Name	Natural Disasters Intensity Analysis And Classification Using Artificial Intelligence
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Natural disasters are inevitable, and disasters drastically affect the economy, ecosystem, and human life. Buildings collapse, ailments spread, and sometimes natural disasters such as tsunamis, earthquakes, and forest fires can devastate nations. Many deep learning techniques are used to classify natural disasters and to find their intensity, but still, this becomes a difficult task because of the complex and unstructured images. Thus this involves finding and classifying the natural disaster and analyzing its intensity.
2.	Idea / Solution description	Firstly the data is collected for creating a high-quality dataset for image classification. Usually, a dataset is composed of images and a set of labels, here we have a collection of natural disaster images and each image can have one or more labels. Then we create models to predict the outcome of the events by comparing them with the captured one and with the dataset. An integrated webcam is used to capture the video frame and is given as input to the model. Then it is followed by image pre-processing obtained from the video frame. The obtained text is compared with the pre-trained model by using deep learning algorithm and finally, it is been evaluated and classified accordingly.
3.	Novelty / Uniqueness	The detection of natural disasters by using deep learning techniques still faces various issues due to noise and serious class imbalance problems. Thus the proposed model provides an effective solution by working in two blocks—one for the detection of natural disaster occurrences and the second block to remove imbalanced class issues. The proposed model could be achieved with the highest accuracy as compared to other state-of-the-art methods due to its multi-layered structure and performs significantly better for natural disaster detection and classification.
4.	Social Impact / Customer Satisfaction	Disaster alerts could be done prior so as to avoid drastic loss of lives and things and can avoid unpredictable changes in the environment. The disaster in a particular area could be predicted and classified accordingly as zones and significant worsening could be avoided. People could identify the disaster occurring in different parts of the world and can easily follow up on the intensity of the disaster in their area/zone and can prepare accordingly.

5.	Business Model (Revenue Model)	
6.	Scalability of the Solution	The analysis of the natural disaster and classification helps in making strong and effective decisions on preventing the loss of lives and helps in preparation for the upcoming inevitable disaster. It takes full advantage of the information obtained from the analysis and produces an appropriate solution that could be handled in the future.