NATURAL DISASTER INTENSITY ANALYSIS AND CLASSIFICATION USING ARTIFICIAL INTELLIGENCE

A PROJECT REPORT

SUBMITTED BY

TEAM ID: PNT2022TMID29409

TEAM MEMBERS	REGISTER NUMBER
SYED ASHIK AHAMED S	422519205501
HARIHARAN T	422519205016
NAVINKUMAR M	422519205029
VIGNESH K	422519205046

INDUSTRY MENTOR(S) : SWATHI

FACULTY MENTOR(S) : KAVITHA E

In partial fulfilment for the award of

BACHELOR OF TECHNOLOGY

INFORMATION TECHNOLOGY

UNIVERSITY COLLEGE OF ENGINEERING VILLUPURAM

TABLE OF CONTENTS

1.INTRODUCTION

1.1 PROJECT OVERVIEW

Natural disasters are large-scale geological or meteorological events that have the potential to cause loss of life or property. A disaster is a result of a natural or man-made hazard impacting a vulnerable community. It is the combination of the hazard along with exposure of a vulnerable society that results in a disaster. The project aims at building a deep learning model that can classify and tell the intensity of a natural disaster based on images.The project uses a multilayered deep convolutional neural network as the main model architecture and also it uses various techniques to enhance the model performance and robustness such as data augmentation, transfer learning, and ensemble methods. The project can have various applications and use cases for disaster management and response such as providing timely and accurate information, assessing the damage and impact, and facilitating the recovery and reconstruction.

1.2 PURPOSE

The purpose of natural disaster intensity analysis and classification using AI is to build a deep learning model that can classify and tell the intensity of a natural disaster based on images. This can help to overcome losses in ecosystems, human lives, and properties by providing timely and accurate information for disaster management and response. It can also be integrated with other technologies such as geographic information systems, remote sensing, and social media to provide a comprehensive and multidimensional view of the disaster situation and impact.

2. LITERATURE SURVEY

2.1 EXISTING PROBLEMS

There is no standardized method for estimating tropical cyclone intensity. The low pressure system developing over Bay of Bengal and South East Asian region makes a landfall and often these cyclone causes life loss,property loss. Due to flood many life lossess occurs because of not giving any forecast or intimation about flood.

2.2 REFERENCES

TITLE: Tropical Cyclone Intensity Estimation Using Multidimentional Convolutional Neural Network From Multichannel Satellite Imagenary

AUTHOR: Wei Tian, Xinxin Zhou, Wei Huang, Yonghong Zhang, Pengfei Zhang, Shefeng Hao

ABSTRACT:

Estimating tropical cyclone (TC) intensity is the first step in the processes of monitoring and predicting destructive TC disasters. Due to the dilemma of meteorological methods, accurate estimation of TC intensity is a longterm challenge. In recent years, while deep learning methods have been applied to TC intensity estimation, most of them fail to make full use of multichannel satellite imageries to consider the three-dimensional (3-D) structure of TC. In this letter, we propose a novel deep learning model (3DAttentionTCNet) to overcome this shortcoming. The model can automatically extract 3-D environment information related to TC intensity from multichannel satellite observation imageries such as infrared (IR), water vapor (WV), and passive microwave rainrate (PMW) satellite imageries by 3-D convolution. In addition, we employ the convolutional block attention module (CBAM) to simulate visual attention for strengthening the model’s attention to core cloud structure and important channels. The experimental results show that the root-mean-square error (RMSE) of the proposed model is 9.48 kts, which is improved by 25% compared to that of the advanced

Dvorak technique (ADT) and by 9.2% over that of the traditional deep learning method of TC intensity estimation.

TITLE: Vulnerability analysis of cyclone hazards and Dimention od disaster risk management in Odisha Along the east coast of india

AUTHOR: Jitendra Kumar Behera and Gopal Krishna Panda Dept. of Geography, Utkal University Vani Vihar, Bhubaneswar – 751004 Odisha India

ABSTRACT:

Odisha is one of the most vulnerable states for the hazards of the tropical cyclones along the east coast of India since time immemorial. The low pressure systems developing over the Bay of Bengal and South East Asian region makes a landfall along the Odisha coast and travel inland. Very often these cyclonic hazards had turned in to disasters affecting the life, livelihood and property of the people. Strong wind, torrential rain, flooding and unusual storm surges accompanied with the cyclones cause severe devastations with the destruction of dwellings, damage to infrastructure and standing crops besides loss of life along the track of its movement and adjacent areas. Odisha's exposure to these extreme events, people's perception and human response, adaptations, its risk mitigation and management has undergone a sea change in the twenty-first century keeping at pace with the scientific innovations and international guidelines. This study makes an attempt to assess the vulnerability of the state to the tropical cyclones based on a Disaster Risk Index. Time series and spatial analysis is used to study their trend and impacts. Content analysis is used to study the innovative strategies of disaster risk reduction of achieving the zero casualty as per the Sendai framework and community resilience. The findings of the study indicate an increasing vulnerability of the state to more number of severe cyclones. But however, the revised strategies in crisis management and community based disaster preparedness have been the key to the success in reducing disaster risk in the state.

TITLE: Desigining Deep-Based Learning Flood Forecast Model With ConvLSTM Hybrid Algorithm

AUTHOR: Mohammed Moishin School of Science, University of Southern QueenslandSpringfield, Springfield, QLD, Australia

ABSTRACT:

Efficient, robust, and accurate early flood warning is a pivotal decision support tool that can help save lives and protect the infrastructure in natural disasters. This research builds a hybrid deep learning (ConvLSTM) algorithm integrating the predictive merits of Convolutional Neural Network (CNN) and Long Short-Term Memory (LSTM) Network to design and evaluate a flood forecasting model to forecast the future occurrence of flood events. Derived from precipitation dataset, the work adopts a Flood Index (I F), in form of a mathematical representation, to capture the gradual depletion of water resources over time, employed in a flood monitoring system to determine the duration, severity, and intensity of any flood situation. The newly designed predictive model utilizes statistically significant lagged I F , improved by antecedent and real-time rainfall data to forecast the next daily I F value. The performance of the proposed ConvLSTM model is validated against 9 different rainfall datasets in flood prone regions in Fiji which faces flood-driven devastations almost annually. The results illustrate the superiority of ConvLSTM-based flood model over the benchmark methods, all of which were tested at the 1-day, 3-day, 7-day, and the 14-day forecast horizon. For instance, the Root Mean Squared Error (RMSE) for the study sites were 0.101, 0.150, 0.211 and 0.279 for the four forecasted periods, respectively, using ConvLSTM model. For the next best model, the RMSE values were 0.105, 0.154, 0.213 and 0.282 in that same order for the four forecast horizons. In terms of the difference in model performance for individual stations, the Legate-McCabe Efficiency Index (LME) were 0.939, 0.898, 0.832 and 0.726 for the four forecast horizons, respectively. The results demonstrated practical utility of ConvLSTM in accurately forecasting I F and its potential use in disaster management and risk mitigation in the current phase of extreme weather events.

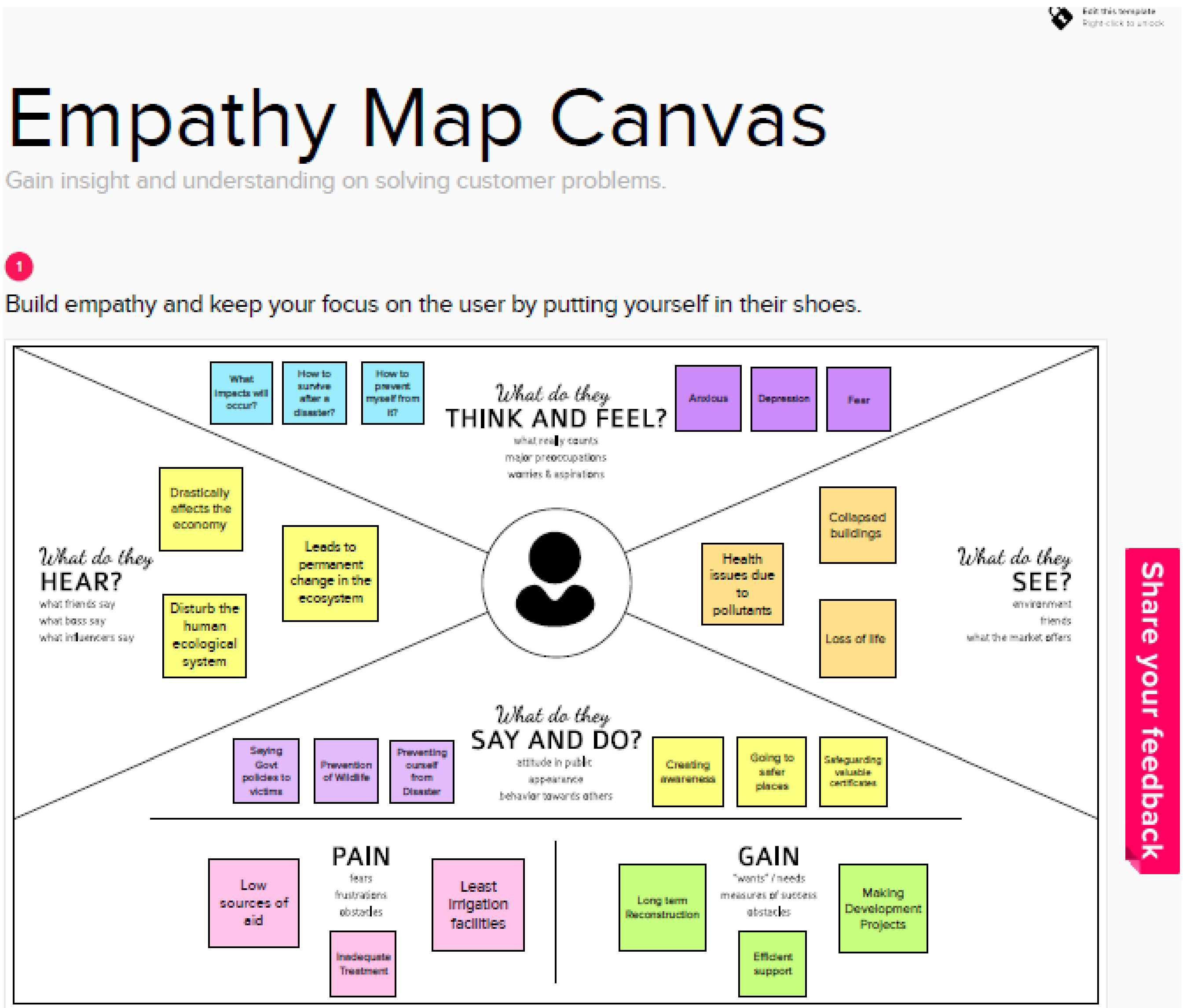
2.3 PROBLEM STATEMENT DEFINITION

A problem statement is a concise description of an issue to be addressed or a condition to be improved upon. It identifies the gap between the current (problem) state and desired (goal) state of a process or product.

3. IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers. Much like a user persona, an empathy map can represent a group of users, such as a customer segment.



3.2 IDEATION AND BRAINSTORMING

Brainstorming is a group creativity technique by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its members**.**

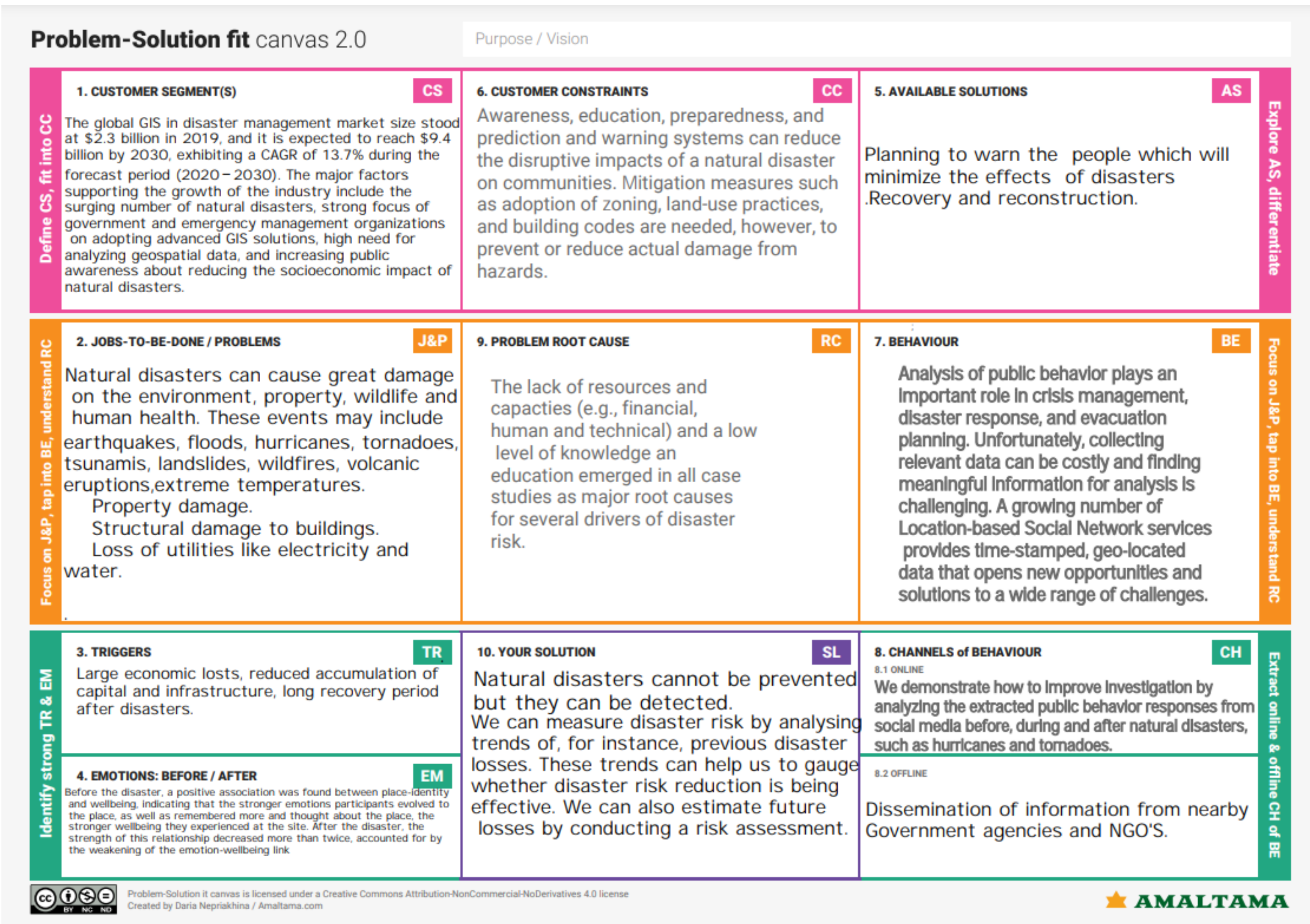
3.3 PROPOSED SOLUTION

Proposed solution should relate the current situation to a desired result and describe the benefits that will accrue when the desired result is achieved.

S.No.	Parameter	Description
1	Problem Statement (Problem to be solved)	The effects of cyclone are as it affects the agriculture, loss of livelihood of coastal areas, loss of communication.
2	Idea / Solution description	As of the intensity of cyclone and range of rainfall inform the people of coastal areas for their protec on and also for their agricultural crops.
3	Novelty / Uniqueness	Till now no indica on to Farmers, we are planning to indicate to Farmers about the clima c condi ons in simple way.
4	Social Impact / Customer Satisfaction	It will be helpful for farmers for protecting their crops.
5	Business Model (Revenue Model)	We will introduce an app to solve the problem (All the cyclone issues shown in the app) and keep posting ads for this app to earn source .
6	Scalability of the Solution	As the product we created is of user friendly and it will be very useful for farmers and agriculture.

3.4 PROBLEM SOLUTION FIT

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem.



4. REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

The following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	**LOGIN**	Login by giving a mobile number, gmail or google account and their loca on.
FR-2	**ALERT**	The alert message is given to all the users when the cyclone hits.
FR-3	**MONITORING**	Continuous monitoring of cyclones and climate changes.
FR-4	**REPORTS**	Keeping the records of the previous cyclone and refer news from meteorologist for live updates.
FR-5	**END USERS**	The information is sent to the farmers using the database.
FR-6	**END GOAL**	Inform farmers about the cyclone and its intensity.

4 .2 NON-FUNCTIONAL REQUIREMENTS

The following are the non-functional requirements of the proposed solution :

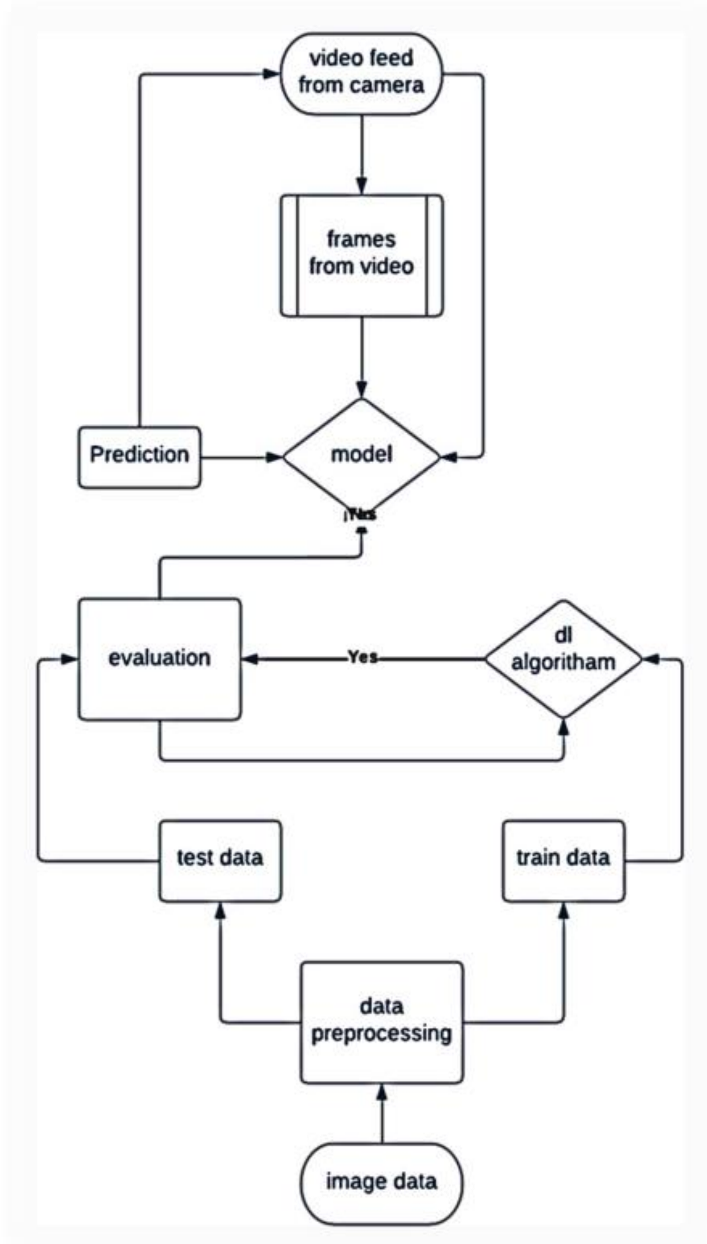
FR No.	Non-Functional Requirement	Description

NFR-1	**USABILITY**	While using this system, people turn on their current loca on. They receive alert messages as no fica on. The local officials can also inform and guide their nearby people and farmers by an alert message.
NFR-2	**SECURITY**	It does not share any personal informa on to strangers. Their informa on is to be encrypted and
NFR-3	**RELIABILITY**	As the details collected from satellite image and meteorologist and updated details in this system, so it is trustworthy.
NFR-4	**PERFORMANCE**	It runs in minimum storage space. It will run efficiently when 1000 users login the same time.
NFR-5	**AVAILABILITY**	It should be available in all Android phones and laptops.
NFR-6	**SCALABILITY**	As the product we created is user friendly and it will be very useful for farmers and agriculture.

5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAM

A data-flow diagram is a way of representing a flow of data through a process or a system. The DFD also provides information about the outputs and inputs of each entity and the process itself.



5.2 USER STORIES

A user story is an informal, general explanation of a software feature written from the perspective of the end user or customer. The purpose of a user story is to articulate how a piece of work will deliver a particular value back to the customer.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	LOGIN	USN-1	As a farmer, I can login by giving mobile number, gmail or google account and their location.	I can prepare myself from cyclone and storing enough food and essentials	High	Sprint- 1
	ALERT	USN-2	As a farmer, I can receive the alert message when the cyclone hits.	I can know about current climatic conditions and upcoming weather conditions	High	Sprint- 2
	MONITORING	USN-3	As a farmer, I can view the continuous monitoring of cyclone and climatic changes.	I can know where the cyclone hits and how much impacts it may creates	High	Sprint- 3
	REPORTS	USN-4	As a farmer, I can keep the records of the previous cyclone and refer news from meteorologist for live updation.	I can receive the alert messages when the disaster occurs	High	Sprint- 4

	END USERS (farmers)	USN-5	As a farmer, I can receive the information from the database.	I should ensure that any stored seeds or harvested crops are carefully protected from wind and flooding	High	Sprint- 5

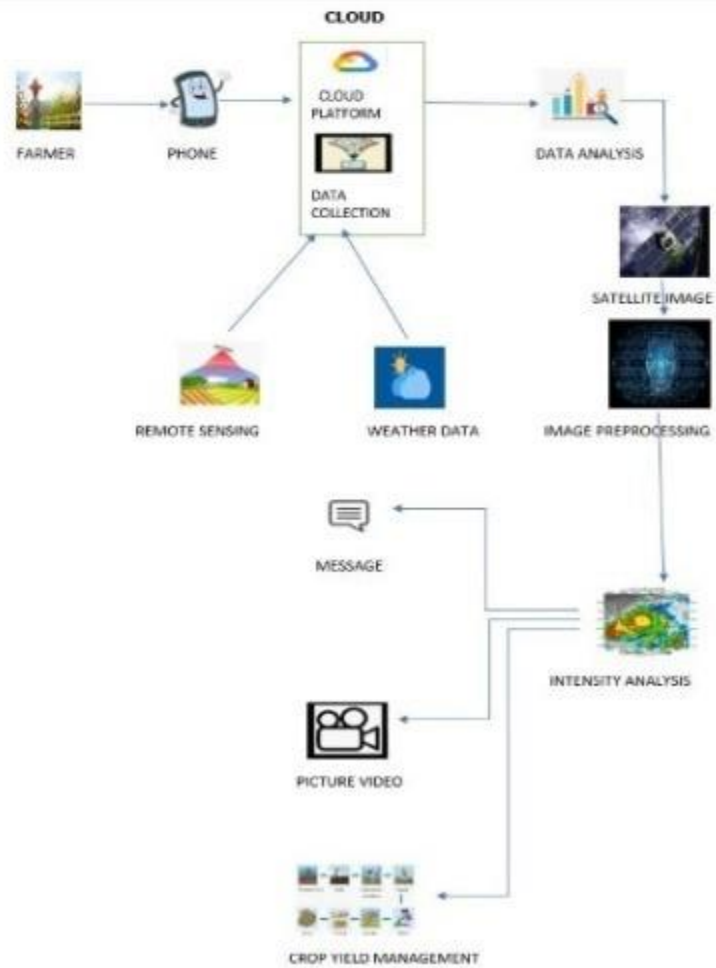
5.3 SOLUTION AND TECHNICAL ARCHITECTURE

SOLUTION ARCHITECTURE

A solution architecture (SA) is an architectural description of a specific solution. SAs combine guidance from different enterprise architecture viewpoints (business, information and technical), as well as from the enterprise solution architecture (ESA).

TECHNOLOGY STACK

A tech stack is the combination of technologies a company uses to build and run an application or project. Sometimes called a “solutions stack,” a tech stack typically consists of programming languages, frameworks, a database, front-end tools, back-end tools, and applications connected via APIs.


CLOUD
CLOUD PLATFORM
DATA COLLECTION
FARMER
PHONE
DATA ANALYSIS
SATELLITE IMAGE
REMOTE SENSING
WEATHER DATA
IMAGE PREPROCESSING
MESSAGE
INTENSITY ANALYSIS
PICTURE VIDEO
CROP YIELD MANAGEMENT

6. PROJECT PLANNING AND SCHEDULING

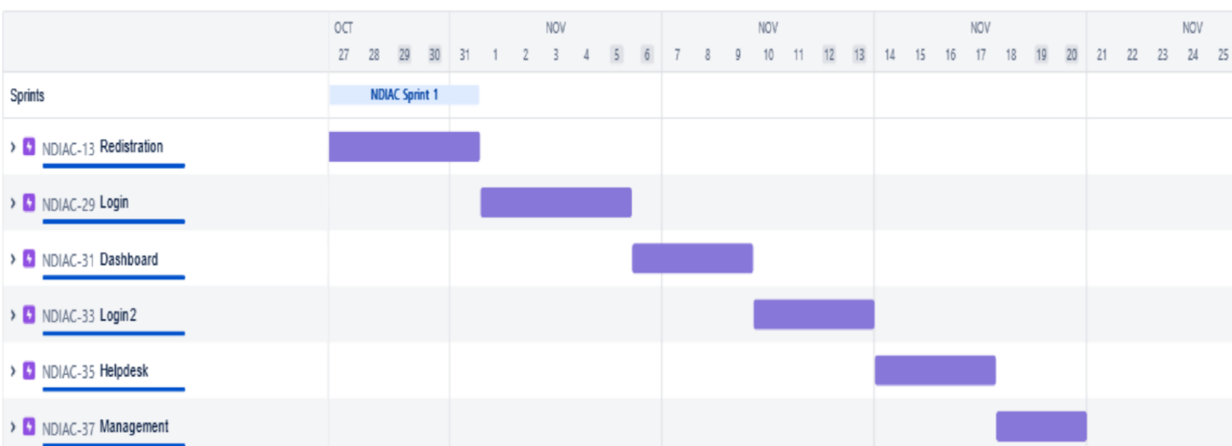
6.1 SPRINT PLANNING AND ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	Syed Ashik Ahamed
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Hariharan
Sprint-2		USN-3	As a user, I can register for the application through Facebook	2	Low	Navinkumar
Sprint-2		USN-4	As a user, I can register for the application through Gmail	2	Medium	Vignesh
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1	High	Syed Ashik Ahamed
Sprint-1	Dashboard	USN-6	As a user, I can access the services and information provided in the dashboard	2	High	Hariharan
Sprint-1	login	USN−7	As a user, I can log into the web application and access the dashboard	2	High	Navinkumar
Sprint-4	Helpdesk	USN-8	As a user, I can get the guidance from the customer care	1	High	Vignesh
Sprint-3	Management	USN-9	As an administrator, I can collect new datasets and keep the model trained	2	High	Syed Ashik Ahamed
Sprint-3		USN-10	As an administrator, I can update other features of the application	2	Medium	Hariharan
Sprint-3		USN-11	As an administrator, I can maintain the information about the user	2	Medium	Navinkumar
Sprint-4		USN-12	As an administrator, I can maintain third-party services	1	Low	Vignesh

6.2 SPRINT DELIVERY SCHEDULE

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on planned End Date)
Sprint 1	8	6 Days	26 Oct 2022	31 Oct 2022	8
Sprint 2	4	6 Days	01 Nov 2022	06 Nov 2022	4
Sprint 3	6	6 Days	07 Nov 2022	12 Nov 2022	6
Sprint 4	2	6 Days	13 Nov 2022	18 Nov 2022	2

6.3 REPORTS FROM JIRA



7. CODING AND SOLUTIONING

7.1 FEATURE 1:

<u>HTML</u>

<u>Home page:</u>

```html
<!DOCTYPE html>

<html>
                        <head>
                                  <title>Home page</title>
                        </head>
                        <body>
                                  <a href = "Intro page.html">Intro page </a>
                                  <a href = "Upload page.html">Upload page </a>

                                  <h1>AI BASED NATURAL DISASTER ANALYSIS</h1>
                                  <img src = "D:\Disasters\CYCLONE.jpg">
                                  <img src = "D:\Disasters\EARTHQUAKE.jpg">
                                  <img src = "D:\Disasters\FLOOD.jpg">
                                  <img src = "D:\Disasters\FOREST FIRE.jpg">
                                    </body>
</html>
```

<u>Intro page:</u>

```html
<!DOCTYPE html>

<html>
                        <head>
                                  <title>Intro page</title>
                        </head>
                        <body>
                                  <a href = "Home page.html">Home page </a>
                                  <a href = "Upload page.html">Upload page </a>

                                  <h1>AI BASED NATURAL DISASTER ANALYSIS</h1>
                                   <p>A Disaster is a serious problem occuring over a short or long period of time that causes widespread human, material, economic or environm
                                    </body>
</html>
```

<u>Upload page:</u>

```html
<!DOCTYPE html>

<html>
                        <head>
                                  <title>Upload page</title>
                        </head>
                        <body>
                                  <a href = "Intro page.html">Intro page </a>
                                  <a href = "Home page.html">Home page </a>

                                  <h1>AI BASED NATURAL DISASTER ANALYSIS</h1>
                                  <img src = "D:\Emergency\Emergency alert.jpeg">
                          </body>
</html>
```

7.2 FEATURE 2:

PYTHON

from flask import Flask, render_template,request import cv2

import tensorflow from tensorflow.keras.models import

load_model from werkzeug.u ls import secure_filename app=

Flask(__name__,template_folder="templates")

model=load_model('disaster.h5') print("Loaded model from

disk") @app.route('/', methods=['GET']) def index():   return

render_template('home.html') @app.route('/home',

methods=['GET'])

def home():   return render_template('home.html')

@app.route('/intro'. methods['GET']) def about():   return

render_tempalte('intro.html') @app.route('/upload',

methods=['GET', 'POST'])

def predict():

cap= cv2.VideoCapture(0)

while True:

```
 _, frame = cap.read()

 frame = cv2.flip(frame,1)

 while True:

          (grabbed, frame) =vs.read()

  if not grabbed:

break

          if W is None or H is None:

(H,W) = frame.shape[:2]

 output = frame.copy()

 frame = cv2.cvtcolor(frame, cv2.color_BGR2RGB)

 frame = cv2.resize(frame, (64,64))

x= np.expand_dims(frame, axis=0)

 result = np.argmax(model.predict(x), axis=-1)

 index = {'Cyclone','Earthquake','Flood','Wildfire'}

 result = str(index[result[0]])

  cv2.putText(output, "ac vity: {}", format(result), (10,120),

cv2.FONT_HERSHEY_PLAIN,1, (0,255,255), 1)

             cv2.imshow("Output", output)

key = cv2.waitkey(1) & 0xFF

 if key == ord("q"):

                break

             print("[INFO] cleaning up...")
```

```
 vs.release()
            cv2.destroyAllWindows()
 return
render_template("upload.html")


if __name__ == '__main__' :
            app.run(host='0.0.0.0', port=8000, debug=False)
```

8. TESTING

8.1 TEST CASES

Section	Total Cases	Not Tested	Fail	Pass
Client Application	10	0	3	7
Security	2	0	1	1
Performance	3	0	1	2
Exception Reporting	2	0	0	2

8.2 USER ACCEPTANCE TESTING

DEFECT ANALYSIS

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Total
By Design	1	0	1	0	2
Duplicate	0	0	0	0	0
External	0	0	2	0	2
Fixed	4	1	0	1	6
Not Reproduced	0	0	0	1	1
Skipped	0	0	0	1	1
Won't Fix	1	0	1	0	2
Total	6	1	4	3	14

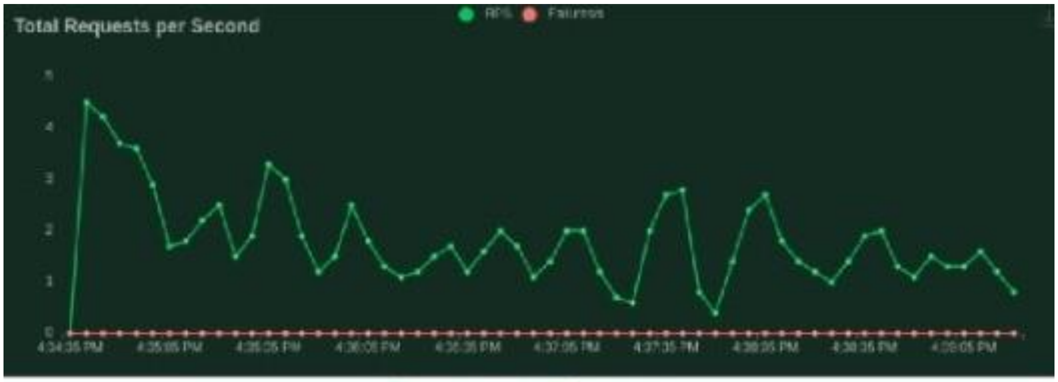
9.RESULTS

9.1 PERFORMANCE METRICS

Locust Test Report

During: 11/20/2022, 12:20:34 PM - 11/20/2022, 12:29:21 PM

Script:: locustfile.py


Total Requests per Second

Response Times (ms)

Number of Users

10. ADVANTAGES AND DISADVANTAGES

ADVANTAGES:

. It can help reduce the losses and damages caused by natural disasters by providing early warning and response systems.

. It can help improve the understanding and prediction of natural disaster patterns and trends by analyzing large amounts of data.

. It can help enhance the resilience and adaptation of human societies and ecosystems by providing information and guidance for disaster prevention and recovery.

. The advantage of natural disaster intensity analysis and classification is that it can use deep learning techniques to overcome the challenges of complex and imbalanced images. For example, a multilayered deep convolutional neural network can extract features and classify images of different natural disasters with high accuracy and efficiency.

DISADVANTAGES

. They can cause loss of life, injury, and displacement of people and animals.

. They can create humanitarian crises, such as food insecurity, water scarcity, disease outbreaks, and social unrest.

. They can damage or destroy properties, infrastructures, and ecosystems, resulting in economic losses and environmental degradation.

11. CONCLUSION

Artificial intelligence has the potential to enhance the detection and classificationof natural disasters, as well as the resilience and relief efforts of affected communities. By using deep learning techniques, AI can analyze complex and imbalanced images of disasters and provide accurate and timely information. However, AI also faces challenges such as data quality, ethical issues, and human-AI collaboration. Therefore, it is essential to develop robust and reliable AI systems that can complement human expertise and judgment in disaster management.

AI can help predict the occurrence and impact of natural disasters by using historical data, satellite imagery, and weather models. This can enable early warning systems and preparedness plans for vulnerable areas. AI can also assist in the recovery and reconstruction of disaster-affected regions by providing insights into the needs and priorities of the survivors, as well as the best allocation of resources and funds.

AI can also support the learning and improvement of disaster management practices by analyzing the lessons learned from past disasters and identifying the gaps and opportunities for future interventions.

12. FUTURE SCOPE

To develop more advanced and efficient deep learning models that can handle the complexity and diversity of natural disaster images, and provide accurate and reliable results.

To integrate multiple sources and types of data, such as text, audio, video, and sensor data, to enhance the analysis and classification of natural disasters and their impacts.

To explore the ethical and social implications of using AI for natural disaster management, such as the privacy, security, and accountability of the data and the algorithms, and the potential biases and risks of the AI outputs.

To evaluate the performance and impact of AI for natural disaster management, and compare it with other methods and tools, such as human experts, traditional models, and manual processes.

To foster the collaboration and communication among different stakeholders, such as researchers, practitioners, policymakers, and communities, to share the best practices and challenges of using AI for natural disaster management, and to co-create solutions that meet the needs and expectations of the users.

To promote the awareness and education of the public and the decision-makers on the benefits and limitations of AI for natural disaster management, and to encourage the participation and feedback of the affected people and groups.

13. APPENDIX

SOURCE

```
ls
```

drive/ sample_data/

```
cd/"/content/drive/MyDrive/dataset" /content/drive/MyDrive/dataset
```

```
ls
```

'ai based natural disaster analysis.ipynb'   dataset.zip   disaster.h5 dataset/
disasster.h5   model-bw.json

```
pwd
```

{"type":"string"}

```
!unzip dataset.zip
```

```
Archive:  dataset.zip
  inflating: dataset/readme.txt
   creating: dataset/test_set/
   creating: dataset/test_set/Cyclone/
  inflating: dataset/test_set/Cyclone/867.jpg
  inflating: dataset/test_set/Cyclone/868.jpg
  inflating: dataset/test_set/Cyclone/869.jpg
  inflating: dataset/test_set/Cyclone/870.jpg
  inflating: dataset/test_set/Cyclone/871.jpg
  inflating: dataset/test_set/Cyclone/872.jpg
  inflating: dataset/test_set/Cyclone/873.jpg
  inflating: dataset/test_set/Cyclone/874.jpg
  inflating: dataset/test_set/Cyclone/875.jpg
  inflating: dataset/test_set/Cyclone/876.jpg
  inflating: dataset/test_set/Cyclone/877.jpg
  inflating: dataset/test_set/Cyclone/878.jpg
  inflating: dataset/test_set/Cyclone/879.jpg
  inflating: dataset/test_set/Cyclone/880.jpg
  inflating: dataset/test_set/Cyclone/881.jpg
  inflating: dataset/test_set/Cyclone/882.jpg
  inflating: dataset/test_set/Cyclone/883.jpg
  inflating: dataset/test_set/Cyclone/884.jpg
```

```
  inflating: dataset/test_set/Cyclone/885.jpg
  inflating: dataset/test_set/Cyclone/886.jpg
  inflating: dataset/test_set/Cyclone/887.jpg
  inflating: dataset/test_set/Cyclone/888.jpg
  inflating: dataset/test_set/Cyclone/889.jpg
  inflating: dataset/test_set/Cyclone/890.jpg
  inflating: dataset/test_set/Cyclone/891.jpg
  inflating: dataset/test_set/Cyclone/892.jpg
  inflating: dataset/test_set/Cyclone/893.jpg
  inflating: dataset/test_set/Cyclone/894.jpg
  inflating: dataset/test_set/Cyclone/895.jpg
  inflating: dataset/test_set/Cyclone/896.jpg
  inflating: dataset/test_set/Cyclone/897.jpg
  inflating: dataset/test_set/Cyclone/898.jpg
  inflating: dataset/test_set/Cyclone/899.jpg
  inflating: dataset/test_set/Cyclone/900.jpg
  inflating: dataset/test_set/Cyclone/901.jpg
  inflating: dataset/test_set/Cyclone/902.jpg
  inflating: dataset/test_set/Cyclone/903.jpg
  inflating: dataset/test_set/Cyclone/904.jpg
  inflating: dataset/test_set/Cyclone/905.jpg
  inflating: dataset/test_set/Cyclone/906.jpg
  inflating: dataset/test_set/Cyclone/907.jpg
  inflating: dataset/test_set/Cyclone/908.jpg
  inflating: dataset/test_set/Cyclone/909.jpg
  inflating: dataset/test_set/Cyclone/910.jpg    inflating:
dataset/test_set/Cyclone/911.jpg
  inflating: dataset/test_set/Cyclone/912.jpg
  inflating: dataset/test_set/Cyclone/913.jpg
  inflating: dataset/test_set/Cyclone/914.jpg
  inflating: dataset/test_set/Cyclone/915.jpg
  inflating: dataset/test_set/Cyclone/916.jpg
  inflating: dataset/test_set/Cyclone/917.jpg
  inflating: dataset/test_set/Cyclone/918.jpg
  inflating: dataset/test_set/Cyclone/919.jpg
  inflating: dataset/test_set/Cyclone/920.jpg
  inflating: dataset/test_set/Cyclone/921.jpg
  inflating: dataset/test_set/Cyclone/922.jpg
  inflating: dataset/test_set/Cyclone/923.jpg
  inflating: dataset/test_set/Cyclone/924.jpg
  inflating: dataset/test_set/Cyclone/925.jpg
  inflating: dataset/test_set/Cyclone/926.jpg    inflating: dataset/test_set/Cyclone/927.jpg
  inflating: dataset/test_set/Cyclone/928.jpg
  inflating: dataset/test_set/Cyclone/929.jpg
  inflating: dataset/test_set/Cyclone/930.jpg
```

```
  creating: dataset/test_set/Earthquake/
 inflating: dataset/test_set/Earthquake/1321.jpg
 inflating: dataset/test_set/Earthquake/1322.jpg
 inflating: dataset/test_set/Earthquake/1323.jpg
 inflating: dataset/test_set/Earthquake/1324.jpg
 inflating: dataset/test_set/Earthquake/1325.jpg
 inflating: dataset/test_set/Earthquake/1326.jpg
 inflating: dataset/test_set/Earthquake/1327.jpg
 inflating: dataset/test_set/Earthquake/1328.jpg
 inflating: dataset/test_set/Earthquake/1329.jpg
 inflating: dataset/test_set/Earthquake/1330.jpg
 inflating: dataset/test_set/Earthquake/1331.jpg
 inflating: dataset/test_set/Earthquake/1332.jpg
 inflating: dataset/test_set/Earthquake/1333.jpg
 inflating: dataset/test_set/Earthquake/1334.jpg
 inflating: dataset/test_set/Earthquake/1335.jpg
 inflating: dataset/test_set/Earthquake/1336.jpg
 inflating: dataset/test_set/Earthquake/1337.jpg
 inflating: dataset/test_set/Earthquake/1338.jpg
 inflating: dataset/test_set/Earthquake/1339.jpg
 inflating: dataset/test_set/Earthquake/1340.jpg
 inflating: dataset/test_set/Earthquake/1341.jpg
 inflating: dataset/test_set/Earthquake/1342.jpg
 inflating: dataset/test_set/Earthquake/1343.jpg
 inflating: dataset/test_set/Earthquake/1344.jpg
 inflating: dataset/test_set/Earthquake/1345.jpg
 inflating: dataset/test_set/Earthquake/1346.jpg
 inflating: dataset/test_set/Earthquake/1347.jpg
 inflating: dataset/test_set/Earthquake/1348.jpg
 inflating: dataset/test_set/Earthquake/1349.jpg
  creating: dataset/test_set/Flood/
 inflating: dataset/test_set/Flood/1000.jpg
 inflating: dataset/test_set/Flood/1001.jpg
 inflating: dataset/test_set/Flood/1002.jpg
 inflating: dataset/test_set/Flood/1003.jpg   inflating: dataset/test_set/Flood/1004.jpg
 inflating: dataset/test_set/Flood/1005.jpg
 inflating: dataset/test_set/Flood/1006.jpg
 inflating: dataset/test_set/Flood/1007.jpg
 inflating: dataset/test_set/Flood/1008.jpg
 inflating: dataset/test_set/Flood/1009.jpg
 inflating: dataset/test_set/Flood/1010.jpg   inflating:
dataset/test_set/Flood/1011.jpg
 inflating: dataset/test_set/Flood/1012.jpg
 inflating: dataset/test_set/Flood/1013.jpg
 inflating: dataset/test_set/Flood/1014.jpg
```

```
inflating: dataset/test_set/Flood/1015.jpg
inflating: dataset/test_set/Flood/1016.jpg
inflating: dataset/test_set/Flood/1017.jpg
inflating: dataset/test_set/Flood/1018.jpg
inflating: dataset/test_set/Flood/1019.jpg
inflating: dataset/test_set/Flood/1020.jpg
inflating: dataset/test_set/Flood/1021.jpg
inflating: dataset/test_set/Flood/1022.jpg
inflating: dataset/test_set/Flood/1023.jpg
inflating: dataset/test_set/Flood/1024.jpg
inflating: dataset/test_set/Flood/1025.jpg
inflating: dataset/test_set/Flood/1026.jpg
inflating: dataset/test_set/Flood/1027.jpg
inflating: dataset/test_set/Flood/1028.jpg
inflating: dataset/test_set/Flood/1029.jpg
inflating: dataset/test_set/Flood/1030.jpg
inflating: dataset/test_set/Flood/1031.jpg
inflating: dataset/test_set/Flood/1032.jpg
inflating: dataset/test_set/Flood/1033.jpg
inflating: dataset/test_set/Flood/1034.jpg
inflating: dataset/test_set/Flood/1035.jpg
inflating: dataset/test_set/Flood/1036.jpg
inflating: dataset/test_set/Flood/1037.jpg
inflating: dataset/test_set/Flood/1038.jpg
inflating: dataset/test_set/Flood/1039.jpg
inflating: dataset/test_set/Flood/1040.jpg
inflating: dataset/test_set/Flood/1041.jpg
inflating: dataset/test_set/Flood/1042.jpg    inflating: dataset/test_set/Flood/1043.jpg
inflating: dataset/test_set/Flood/1044.jpg
inflating: dataset/test_set/Flood/1045.jpg
inflating: dataset/test_set/Flood/1046.jpg
inflating: dataset/test_set/Flood/1047.jpg
inflating: dataset/test_set/Flood/1048.jpg
inflating: dataset/test_set/Flood/1049.jpg
inflating: dataset/test_set/Flood/1050.jpg
inflating: dataset/test_set/Flood/1051.jpg
inflating: dataset/test_set/Flood/1062.jpg
inflating: dataset/test_set/Flood/992.jpg
inflating: dataset/test_set/Flood/993.jpg
inflating: dataset/test_set/Flood/994.jpg
inflating: dataset/test_set/Flood/995.jpg
inflating: dataset/test_set/Flood/996.jpg
inflating: dataset/test_set/Flood/997.jpg
inflating: dataset/test_set/Flood/998.jpg
inflating: dataset/test_set/Flood/999.jpg
```

```
 creating: dataset/test_set/Wildfire/
inflating: dataset/test_set/Wildfire/1035.jpg
inflating: dataset/test_set/Wildfire/1036.jpg
inflating: dataset/test_set/Wildfire/1037.jpg
inflating: dataset/test_set/Wildfire/1038.jpg
inflating: dataset/test_set/Wildfire/1039.jpg
inflating: dataset/test_set/Wildfire/1040.jpg
inflating: dataset/test_set/Wildfire/1041.jpg
inflating: dataset/test_set/Wildfire/1042.jpg
inflating: dataset/test_set/Wildfire/1043.jpg
inflating: dataset/test_set/Wildfire/1044.jpg
inflating: dataset/test_set/Wildfire/1045.jpg
inflating: dataset/test_set/Wildfire/1046.jpg
inflating: dataset/test_set/Wildfire/1047.jpg
inflating: dataset/test_set/Wildfire/1048.jpg
inflating: dataset/test_set/Wildfire/1049.jpg
inflating: dataset/test_set/Wildfire/1050.jpg
inflating: dataset/test_set/Wildfire/1051.jpg
inflating: dataset/test_set/Wildfire/1052.jpg
inflating: dataset/test_set/Wildfire/1053.jpg
inflating: dataset/test_set/Wildfire/1054.jpg   inflating: dataset/test_set/Wildfire/1055.jpg
inflating: dataset/test_set/Wildfire/1056.jpg
inflating: dataset/test_set/Wildfire/1057.jpg
inflating: dataset/test_set/Wildfire/1058.jpg
inflating: dataset/test_set/Wildfire/1059.jpg
inflating: dataset/test_set/Wildfire/1060.jpg
inflating: dataset/test_set/Wildfire/1061.jpg
inflating: dataset/test_set/Wildfire/1062.jpg
inflating: dataset/test_set/Wildfire/1063.jpg
inflating: dataset/test_set/Wildfire/1064.jpg
inflating: dataset/test_set/Wildfire/1065.jpg
inflating: dataset/test_set/Wildfire/1066.jpg
inflating: dataset/test_set/Wildfire/1067.jpg
inflating: dataset/test_set/Wildfire/1068.jpg
inflating: dataset/test_set/Wildfire/1069.jpg
inflating: dataset/test_set/Wildfire/1070.jpg
inflating: dataset/test_set/Wildfire/1071.jpg
inflating: dataset/test_set/Wildfire/1072.jpg
inflating: dataset/test_set/Wildfire/1073.jpg
inflating: dataset/test_set/Wildfire/1074.jpg
inflating: dataset/test_set/Wildfire/1075.jpg
inflating: dataset/test_set/Wildfire/1076.jpg
inflating: dataset/test_set/Wildfire/1077.jpg
inflating: dataset/test_set/Wildfire/1078.jpg
 creating: dataset/train_set/
```

```
   creating: dataset/train_set/Cyclone/
  inflating: dataset/train_set/Cyclone/0.jpg
  inflating: dataset/train_set/Cyclone/1.jpg
  inflating: dataset/train_set/Cyclone/10.jpg
  inflating: dataset/train_set/Cyclone/100.jpg
  inflating: dataset/train_set/Cyclone/101.jpg
  inflating: dataset/train_set/Cyclone/102.jpg
  inflating: dataset/train_set/Cyclone/103.jpg
  inflating: dataset/train_set/Cyclone/104.jpg
  inflating: dataset/train_set/Cyclone/105.jpg
  inflating: dataset/train_set/Cyclone/106.jpg
  inflating: dataset/train_set/Cyclone/107.jpg
  inflating: dataset/train_set/Cyclone/108.jpg
  inflating: dataset/train_set/Cyclone/109.jpg   inflating: dataset/train_set/Cyclone/11.jpg    inflating:
dataset/train_set/Cyclone/110.jpg
  inflating: dataset/train_set/Cyclone/111.jpg
  inflating: dataset/train_set/Cyclone/112.jpg
  inflating: dataset/train_set/Cyclone/113.jpg
  inflating: dataset/train_set/Cyclone/114.jpg
  inflating: dataset/train_set/Cyclone/115.jpg
  inflating: dataset/train_set/Cyclone/116.jpg
  inflating: dataset/train_set/Cyclone/117.jpg
  inflating: dataset/train_set/Cyclone/118.jpg
  inflating: dataset/train_set/Cyclone/119.jpg
  inflating: dataset/train_set/Cyclone/12.jpg
  inflating: dataset/train_set/Cyclone/120.jpg
  inflating: dataset/train_set/Cyclone/121.jpg
  inflating: dataset/train_set/Cyclone/122.jpg
  inflating: dataset/train_set/Cyclone/123.jpg
  inflating: dataset/train_set/Cyclone/124.jpg
  inflating: dataset/train_set/Cyclone/125.jpg
  inflating: dataset/train_set/Cyclone/126.jpg
  inflating: dataset/train_set/Cyclone/127.jpg
  inflating: dataset/train_set/Cyclone/128.jpg
  inflating: dataset/train_set/Cyclone/129.jpg
  inflating: dataset/train_set/Cyclone/13.jpg
  inflating: dataset/train_set/Cyclone/130.jpg
  inflating: dataset/train_set/Cyclone/131.jpg
  inflating: dataset/train_set/Cyclone/132.jpg
  inflating: dataset/train_set/Cyclone/133.jpg
  inflating: dataset/train_set/Cyclone/134.jpg
  inflating: dataset/train_set/Cyclone/135.jpg
  inflating: dataset/train_set/Cyclone/136.jpg
  inflating: dataset/train_set/Cyclone/137.jpg
  inflating: dataset/train_set/Cyclone/138.jpg
```

```
  inflating: dataset/train_set/Cyclone/139.jpg
  inflating: dataset/train_set/Cyclone/14.jpg
  inflating: dataset/train_set/Cyclone/140.jpg
  inflating: dataset/train_set/Cyclone/141.jpg
  inflating: dataset/train_set/Cyclone/142.jpg
  inflating: dataset/train_set/Cyclone/143.jpg
  inflating: dataset/train_set/Cyclone/144.jpg   inflating: dataset/train_set/Cyclone/145.jpg
  inflating: dataset/train_set/Cyclone/146.jpg
  inflating: dataset/train_set/Cyclone/147.jpg
  inflating: dataset/train_set/Cyclone/148.jpg
  inflating: dataset/train_set/Cyclone/149.jpg
  inflating: dataset/train_set/Cyclone/15.jpg
  inflating: dataset/train_set/Cyclone/150.jpg
  inflating: dataset/train_set/Cyclone/151.jpg
  inflating: dataset/train_set/Cyclone/152.jpg
  inflating: dataset/train_set/Cyclone/153.jpg
  inflating: dataset/train_set/Cyclone/154.jpg
  inflating: dataset/train_set/Cyclone/155.jpg
  inflating: dataset/train_set/Cyclone/156.jpg
  inflating: dataset/train_set/Cyclone/157.jpg
  inflating: dataset/train_set/Cyclone/158.jpg
  inflating: dataset/train_set/Cyclone/159.jpg
  inflating: dataset/train_set/Cyclone/16.jpg
  inflating: dataset/train_set/Cyclone/160.jpg
  inflating: dataset/train_set/Cyclone/161.jpg
  inflating: dataset/train_set/Cyclone/162.jpg
  inflating: dataset/train_set/Cyclone/163.jpg
  inflating: dataset/train_set/Cyclone/164.jpg
  inflating: dataset/train_set/Cyclone/165.jpg
  inflating: dataset/train_set/Cyclone/166.jpg
  inflating: dataset/train_set/Cyclone/167.jpg
  inflating: dataset/train_set/Cyclone/168.jpg
  inflating: dataset/train_set/Cyclone/169.jpg
  inflating: dataset/train_set/Cyclone/17.jpg
  inflating: dataset/train_set/Cyclone/170.jpg
  inflating: dataset/train_set/Cyclone/18.jpg
  inflating: dataset/train_set/Cyclone/184.jpg
  inflating: dataset/train_set/Cyclone/185.jpg
  inflating: dataset/train_set/Cyclone/186.jpg
  inflating: dataset/train_set/Cyclone/187.jpg
  inflating: dataset/train_set/Cyclone/188.jpg
  inflating:    dataset/train_set/Cyclone/189.jpg          inflating:
dataset/train_set/Cyclone/19.jpg                           inflating:
dataset/train_set/Cyclone/190.jpg
  inflating: dataset/train_set/Cyclone/191.jpg   inflating: dataset/train_set/Cyclone/192.jpg
```

```
  inflating: dataset/train_set/Cyclone/193.jpg
  inflating: dataset/train_set/Cyclone/194.jpg
  inflating: dataset/train_set/Cyclone/195.jpg
  inflating: dataset/train_set/Cyclone/196.jpg
  inflating: dataset/train_set/Cyclone/197.jpg
  inflating: dataset/train_set/Cyclone/198.jpg
  inflating: dataset/train_set/Cyclone/199.jpg
  inflating: dataset/train_set/Cyclone/2.jpg
  inflating: dataset/train_set/Cyclone/20.jpg
  inflating: dataset/train_set/Cyclone/200.jpg
  inflating: dataset/train_set/Cyclone/201.jpg
  inflating: dataset/train_set/Cyclone/202.jpg
  inflating: dataset/train_set/Cyclone/203.jpg
  inflating: dataset/train_set/Cyclone/204.jpg
  inflating: dataset/train_set/Cyclone/205.jpg
  inflating: dataset/train_set/Cyclone/206.jpg
  inflating: dataset/train_set/Cyclone/207.jpg
  inflating: dataset/train_set/Cyclone/208.jpg
  inflating: dataset/train_set/Cyclone/209.jpg
  inflating: dataset/train_set/Cyclone/21.jpg
  inflating: dataset/train_set/Cyclone/210.jpg   inflating:
dataset/train_set/Cyclone/211.jpg
  inflating: dataset/train_set/Cyclone/212.jpg
  inflating: dataset/train_set/Cyclone/213.jpg
  inflating: dataset/train_set/Cyclone/214.jpg
  inflating: dataset/train_set/Cyclone/215.jpg
  inflating: dataset/train_set/Cyclone/216.jpg
  inflating: dataset/train_set/Cyclone/217.jpg
  inflating: dataset/train_set/Cyclone/218.jpg
  inflating: dataset/train_set/Cyclone/219.jpg
  inflating: dataset/train_set/Cyclone/22.jpg
  inflating: dataset/train_set/Cyclone/220.jpg
  inflating: dataset/train_set/Cyclone/221.jpg
  inflating: dataset/train_set/Cyclone/222.jpg
  inflating: dataset/train_set/Cyclone/223.jpg
  inflating: dataset/train_set/Cyclone/224.jpg
  inflating: dataset/train_set/Cyclone/225.jpg
  inflating: dataset/train_set/Cyclone/226.jpg   inflating: dataset/train_set/Cyclone/227.jpg
  inflating: dataset/train_set/Cyclone/228.jpg
  inflating: dataset/train_set/Cyclone/229.jpg   inflating:
dataset/train_set/Cyclone/23.jpg
  inflating: dataset/train_set/Cyclone/230.jpg
  inflating: dataset/train_set/Cyclone/231.jpg
  inflating: dataset/train_set/Cyclone/232.jpg
  inflating: dataset/train_set/Cyclone/24.jpg
```

```
inflating: dataset/train_set/Cyclone/25.jpg
inflating: dataset/train_set/Cyclone/26.jpg
inflating: dataset/train_set/Cyclone/27.jpg
inflating: dataset/train_set/Cyclone/28.jpg
inflating: dataset/train_set/Cyclone/29.jpg
inflating: dataset/train_set/Cyclone/3.jpg
inflating: dataset/train_set/Cyclone/30.jpg
inflating: dataset/train_set/Cyclone/31.jpg
inflating: dataset/train_set/Cyclone/32.jpg
inflating: dataset/train_set/Cyclone/33.jpg
inflating: dataset/train_set/Cyclone/34.jpg
inflating: dataset/train_set/Cyclone/35.jpg
inflating: dataset/train_set/Cyclone/36.jpg
inflating: dataset/train_set/Cyclone/37.jpg
inflating: dataset/train_set/Cyclone/38.jpg
inflating: dataset/train_set/Cyclone/39.jpg
inflating: dataset/train_set/Cyclone/4.jpg
inflating: dataset/train_set/Cyclone/40.jpg
inflating: dataset/train_set/Cyclone/41.jpg
inflating: dataset/train_set/Cyclone/42.jpg
inflating: dataset/train_set/Cyclone/43.jpg
inflating: dataset/train_set/Cyclone/44.jpg
inflating: dataset/train_set/Cyclone/45.jpg
inflating: dataset/train_set/Cyclone/46.jpg
inflating: dataset/train_set/Cyclone/47.jpg
inflating: dataset/train_set/Cyclone/48.jpg
inflating: dataset/train_set/Cyclone/49.jpg
inflating: dataset/train_set/Cyclone/5.jpg
inflating: dataset/train_set/Cyclone/50.jpg
inflating: dataset/train_set/Cyclone/51.jpg
inflating: dataset/train_set/Cyclone/52.jpg   inflating: dataset/train_set/Cyclone/53.jpg
inflating: dataset/train_set/Cyclone/54.jpg
inflating: dataset/train_set/Cyclone/55.jpg
inflating: dataset/train_set/Cyclone/56.jpg
inflating: dataset/train_set/Cyclone/57.jpg
inflating: dataset/train_set/Cyclone/58.jpg
inflating: dataset/train_set/Cyclone/59.jpg
inflating: dataset/train_set/Cyclone/6.jpg
inflating: dataset/train_set/Cyclone/60.jpg
inflating: dataset/train_set/Cyclone/61.jpg
inflating: dataset/train_set/Cyclone/62.jpg
inflating: dataset/train_set/Cyclone/63.jpg
inflating: dataset/train_set/Cyclone/64.jpg
inflating: dataset/train_set/Cyclone/65.jpg
inflating: dataset/train_set/Cyclone/66.jpg
```

```
  inflating: dataset/train_set/Cyclone/67.jpg
  inflating: dataset/train_set/Cyclone/68.jpg
  inflating: dataset/train_set/Cyclone/69.jpg
  inflating: dataset/train_set/Cyclone/7.jpg
  inflating: dataset/train_set/Cyclone/70.jpg
  inflating: dataset/train_set/Cyclone/71.jpg
  inflating: dataset/train_set/Cyclone/72.jpg
  inflating: dataset/train_set/Cyclone/73.jpg
  inflating: dataset/train_set/Cyclone/74.jpg
  inflating: dataset/train_set/Cyclone/75.jpg
  inflating: dataset/train_set/Cyclone/76.jpg
  inflating: dataset/train_set/Cyclone/77.jpg
  inflating: dataset/train_set/Cyclone/78.jpg
  inflating: dataset/train_set/Cyclone/79.jpg
  inflating: dataset/train_set/Cyclone/8.jpg
  inflating: dataset/train_set/Cyclone/80.jpg
  inflating: dataset/train_set/Cyclone/81.jpg
  inflating: dataset/train_set/Cyclone/82.jpg
  inflating: dataset/train_set/Cyclone/83.jpg
  inflating: dataset/train_set/Cyclone/84.jpg
  inflating: dataset/train_set/Cyclone/85.jpg
  inflating: dataset/train_set/Cyclone/86.jpg
  inflating: dataset/train_set/Cyclone/87.jpg
  inflating: dataset/train_set/Cyclone/88.jpg   inflating: dataset/train_set/Cyclone/89.jpg   inflating:
dataset/train_set/Cyclone/9.jpg
  inflating: dataset/train_set/Cyclone/90.jpg
  inflating: dataset/train_set/Cyclone/91.jpg
  inflating: dataset/train_set/Cyclone/92.jpg
  inflating: dataset/train_set/Cyclone/93.jpg
  inflating: dataset/train_set/Cyclone/94.jpg
  inflating: dataset/train_set/Cyclone/95.jpg
  inflating: dataset/train_set/Cyclone/96.jpg
  inflating: dataset/train_set/Cyclone/97.jpg
  inflating: dataset/train_set/Cyclone/98.jpg
  inflating: dataset/train_set/Cyclone/99.jpg
   creating: dataset/train_set/Earthquake/
  inflating: dataset/train_set/Earthquake/0.jpg
  inflating: dataset/train_set/Earthquake/1.jpg
  inflating: dataset/train_set/Earthquake/10.jpg    inflating:
dataset/train_set/Earthquake/11.jpg
  inflating: dataset/train_set/Earthquake/12.jpg
  inflating: dataset/train_set/Earthquake/13.jpg
  inflating: dataset/train_set/Earthquake/14.jpg
  inflating: dataset/train_set/Earthquake/15.jpg
  inflating: dataset/train_set/Earthquake/16.jpg
```

```
inflating: dataset/train_set/Earthquake/17.jpg
inflating: dataset/train_set/Earthquake/18.jpg
inflating: dataset/train_set/Earthquake/19.jpg
inflating: dataset/train_set/Earthquake/2.jpg
inflating: dataset/train_set/Earthquake/20.jpg
inflating: dataset/train_set/Earthquake/21.jpg
inflating: dataset/train_set/Earthquake/22.jpg
inflating: dataset/train_set/Earthquake/23.jpg
inflating: dataset/train_set/Earthquake/231.jpg
inflating: dataset/train_set/Earthquake/232.jpg
inflating: dataset/train_set/Earthquake/233.jpg
inflating: dataset/train_set/Earthquake/234.jpg
inflating: dataset/train_set/Earthquake/235.jpg
inflating: dataset/train_set/Earthquake/236.jpg
inflating: dataset/train_set/Earthquake/237.jpg
inflating: dataset/train_set/Earthquake/238.jpg
inflating: dataset/train_set/Earthquake/239.jpg   inflating: dataset/train_set/Earthquake/24.jpg
inflating: dataset/train_set/Earthquake/240.jpg
inflating: dataset/train_set/Earthquake/241.jpg
inflating: dataset/train_set/Earthquake/242.jpg
inflating: dataset/train_set/Earthquake/243.jpg
inflating: dataset/train_set/Earthquake/244.jpg
inflating: dataset/train_set/Earthquake/245.jpg
inflating: dataset/train_set/Earthquake/246.jpg
inflating: dataset/train_set/Earthquake/247.jpg
inflating: dataset/train_set/Earthquake/248.jpg
inflating: dataset/train_set/Earthquake/249.jpg
inflating: dataset/train_set/Earthquake/25.jpg
inflating: dataset/train_set/Earthquake/250.jpg
inflating: dataset/train_set/Earthquake/251.jpg
inflating: dataset/train_set/Earthquake/252.jpg
inflating: dataset/train_set/Earthquake/253.jpg
inflating: dataset/train_set/Earthquake/254.jpg
inflating: dataset/train_set/Earthquake/255.jpg
inflating: dataset/train_set/Earthquake/256.jpg
inflating: dataset/train_set/Earthquake/257.jpg
inflating: dataset/train_set/Earthquake/258.jpg
inflating: dataset/train_set/Earthquake/259.jpg
inflating: dataset/train_set/Earthquake/26.jpg
inflating: dataset/train_set/Earthquake/260.jpg
inflating: dataset/train_set/Earthquake/261.jpg
inflating: dataset/train_set/Earthquake/262.jpg
inflating: dataset/train_set/Earthquake/263.jpg
inflating: dataset/train_set/Earthquake/264.jpg
inflating: dataset/train_set/Earthquake/265.jpg
```

```
inflating: dataset/train_set/Earthquake/266.jpg
inflating: dataset/train_set/Earthquake/267.jpg
inflating: dataset/train_set/Earthquake/268.jpg
inflating: dataset/train_set/Earthquake/269.jpg
inflating: dataset/train_set/Earthquake/27.jpg
inflating: dataset/train_set/Earthquake/270.jpg
inflating: dataset/train_set/Earthquake/271.jpg
inflating: dataset/train_set/Earthquake/272.jpg
inflating: dataset/train_set/Earthquake/273.jpg
inflating: dataset/train_set/Earthquake/274.jpg    inflating: dataset/train_set/Earthquake/275.jpg
inflating: dataset/train_set/Earthquake/276.jpg
inflating: dataset/train_set/Earthquake/277.jpg
inflating: dataset/train_set/Earthquake/278.jpg
inflating: dataset/train_set/Earthquake/279.jpg
inflating: dataset/train_set/Earthquake/28.jpg
inflating: dataset/train_set/Earthquake/280.jpg
inflating: dataset/train_set/Earthquake/281.jpg
inflating: dataset/train_set/Earthquake/282.jpg
inflating: dataset/train_set/Earthquake/283.jpg
inflating: dataset/train_set/Earthquake/284.jpg
inflating: dataset/train_set/Earthquake/285.jpg
inflating: dataset/train_set/Earthquake/286.jpg
inflating: dataset/train_set/Earthquake/287.jpg
inflating: dataset/train_set/Earthquake/288.jpg
inflating: dataset/train_set/Earthquake/289.jpg
inflating: dataset/train_set/Earthquake/29.jpg
inflating: dataset/train_set/Earthquake/290.jpg
inflating: dataset/train_set/Earthquake/291.jpg
inflating: dataset/train_set/Earthquake/292.jpg
inflating: dataset/train_set/Earthquake/293.jpg
inflating: dataset/train_set/Earthquake/294.jpg
inflating: dataset/train_set/Earthquake/295.jpg
inflating: dataset/train_set/Earthquake/296.jpg
inflating: dataset/train_set/Earthquake/297.jpg
inflating: dataset/train_set/Earthquake/298.jpg
inflating: dataset/train_set/Earthquake/299.jpg
inflating: dataset/train_set/Earthquake/3.jpg
inflating: dataset/train_set/Earthquake/30.jpg
inflating: dataset/train_set/Earthquake/300.jpg
inflating: dataset/train_set/Earthquake/301.jpg
inflating: dataset/train_set/Earthquake/302.jpg
inflating: dataset/train_set/Earthquake/31.jpg
inflating: dataset/train_set/Earthquake/32.jpg
inflating: dataset/train_set/Earthquake/33.jpg
inflating: dataset/train_set/Earthquake/34.jpg
```

```
inflating: dataset/train_set/Earthquake/35.jpg
inflating: dataset/train_set/Earthquake/36.jpg
inflating: dataset/train_set/Earthquake/37.jpg   inflating: dataset/train_set/Earthquake/38.jpg
inflating: dataset/train_set/Earthquake/39.jpg
inflating: dataset/train_set/Earthquake/4.jpg
inflating: dataset/train_set/Earthquake/40.jpg
inflating: dataset/train_set/Earthquake/41.jpg
inflating: dataset/train_set/Earthquake/42.jpg
inflating: dataset/train_set/Earthquake/43.jpg
inflating: dataset/train_set/Earthquake/44.jpg
inflating: dataset/train_set/Earthquake/45.jpg
inflating: dataset/train_set/Earthquake/46.jpg
inflating: dataset/train_set/Earthquake/47.jpg
inflating: dataset/train_set/Earthquake/48.jpg
inflating: dataset/train_set/Earthquake/49.jpg
inflating: dataset/train_set/Earthquake/5.jpg
inflating: dataset/train_set/Earthquake/50.jpg
inflating: dataset/train_set/Earthquake/51.jpg
inflating: dataset/train_set/Earthquake/52.jpg
inflating: dataset/train_set/Earthquake/53.jpg
inflating: dataset/train_set/Earthquake/54.jpg
inflating: dataset/train_set/Earthquake/55.jpg
inflating: dataset/train_set/Earthquake/56.jpg
inflating: dataset/train_set/Earthquake/57.jpg
inflating: dataset/train_set/Earthquake/58.jpg
inflating: dataset/train_set/Earthquake/59.jpg
inflating: dataset/train_set/Earthquake/6.jpg
inflating: dataset/train_set/Earthquake/60.jpg
inflating: dataset/train_set/Earthquake/61.jpg
inflating: dataset/train_set/Earthquake/62.jpg
inflating: dataset/train_set/Earthquake/63.jpg
inflating: dataset/train_set/Earthquake/64.jpg
inflating: dataset/train_set/Earthquake/65.jpg
inflating: dataset/train_set/Earthquake/66.jpg
inflating: dataset/train_set/Earthquake/67.jpg
inflating: dataset/train_set/Earthquake/68.jpg
inflating: dataset/train_set/Earthquake/69.jpg
inflating: dataset/train_set/Earthquake/7.jpg
inflating: dataset/train_set/Earthquake/70.jpg
inflating: dataset/train_set/Earthquake/71.jpg
inflating: dataset/train_set/Earthquake/72.jpg   inflating: dataset/train_set/Earthquake/73.jpg
inflating: dataset/train_set/Earthquake/74.jpg
inflating: dataset/train_set/Earthquake/75.jpg
inflating: dataset/train_set/Earthquake/76.jpg
inflating: dataset/train_set/Earthquake/77.jpg
```

```
  inflating: dataset/train_set/Earthquake/78.jpg
  inflating: dataset/train_set/Earthquake/79.jpg
  inflating: dataset/train_set/Earthquake/8.jpg
  inflating: dataset/train_set/Earthquake/80.jpg
  inflating: dataset/train_set/Earthquake/81.jpg
  inflating: dataset/train_set/Earthquake/82.jpg
  inflating: dataset/train_set/Earthquake/83.jpg
  inflating: dataset/train_set/Earthquake/9.jpg
   creating: dataset/train_set/Flood/
  inflating: dataset/train_set/Flood/0.jpg
  inflating: dataset/train_set/Flood/1.jpg
  inflating: dataset/train_set/Flood/10.jpg
  inflating: dataset/train_set/Flood/100.jpg
  inflating: dataset/train_set/Flood/101.jpg
  inflating: dataset/train_set/Flood/102.jpg
  inflating: dataset/train_set/Flood/103.jpg
  inflating: dataset/train_set/Flood/104.jpg
  inflating: dataset/train_set/Flood/105.jpg
  inflating: dataset/train_set/Flood/106.jpg
  inflating: dataset/train_set/Flood/107.jpg
  inflating: dataset/train_set/Flood/108.jpg
  inflating: dataset/train_set/Flood/109.jpg
  inflating: dataset/train_set/Flood/11.jpg
  inflating: dataset/train_set/Flood/110.jpg    inflating:
dataset/train_set/Flood/111.jpg
  inflating: dataset/train_set/Flood/112.jpg
  inflating: dataset/train_set/Flood/113.jpg
  inflating: dataset/train_set/Flood/114.jpg
  inflating: dataset/train_set/Flood/115.jpg
  inflating: dataset/train_set/Flood/116.jpg
  inflating: dataset/train_set/Flood/117.jpg
  inflating: dataset/train_set/Flood/118.jpg
  inflating: dataset/train_set/Flood/119.jpg
  inflating: dataset/train_set/Flood/12.jpg    inflating: dataset/train_set/Flood/13.jpg
  inflating: dataset/train_set/Flood/14.jpg
  inflating: dataset/train_set/Flood/15.jpg
  inflating: dataset/train_set/Flood/16.jpg
  inflating: dataset/train_set/Flood/17.jpg
  inflating: dataset/train_set/Flood/18.jpg
  inflating: dataset/train_set/Flood/19.jpg
  inflating: dataset/train_set/Flood/2.jpg
  inflating: dataset/train_set/Flood/20.jpg
  inflating: dataset/train_set/Flood/21.jpg
  inflating: dataset/train_set/Flood/22.jpg
  inflating: dataset/train_set/Flood/222.jpg
```

```
inflating: dataset/train_set/Flood/223.jpg
inflating: dataset/train_set/Flood/224.jpg
inflating: dataset/train_set/Flood/225.jpg
inflating: dataset/train_set/Flood/226.jpg
inflating: dataset/train_set/Flood/227.jpg
inflating: dataset/train_set/Flood/228.jpg
inflating: dataset/train_set/Flood/229.jpg
inflating: dataset/train_set/Flood/23.jpg
inflating: dataset/train_set/Flood/230.jpg
inflating: dataset/train_set/Flood/231.jpg
inflating: dataset/train_set/Flood/232.jpg
inflating: dataset/train_set/Flood/233.jpg
inflating: dataset/train_set/Flood/234.jpg
inflating: dataset/train_set/Flood/235.jpg
inflating: dataset/train_set/Flood/236.jpg
inflating: dataset/train_set/Flood/237.jpg
inflating: dataset/train_set/Flood/238.jpg
inflating: dataset/train_set/Flood/239.jpg
inflating: dataset/train_set/Flood/24.jpg
inflating: dataset/train_set/Flood/240.jpg
inflating: dataset/train_set/Flood/241.jpg
inflating: dataset/train_set/Flood/242.jpg
inflating: dataset/train_set/Flood/243.jpg
inflating: dataset/train_set/Flood/244.jpg
inflating: dataset/train_set/Flood/245.jpg
inflating: dataset/train_set/Flood/246.jpg
inflating: dataset/train_set/Flood/247.jpg   inflating: dataset/train_set/Flood/248.jpg
inflating: dataset/train_set/Flood/249.jpg
inflating: dataset/train_set/Flood/25.jpg
inflating: dataset/train_set/Flood/250.jpg
inflating: dataset/train_set/Flood/251.jpg
inflating: dataset/train_set/Flood/252.jpg
inflating: dataset/train_set/Flood/253.jpg
inflating: dataset/train_set/Flood/254.jpg
inflating: dataset/train_set/Flood/255.jpg
inflating: dataset/train_set/Flood/256.jpg
inflating: dataset/train_set/Flood/257.jpg
inflating: dataset/train_set/Flood/258.jpg
inflating: dataset/train_set/Flood/259.jpg
inflating: dataset/train_set/Flood/26.jpg
inflating: dataset/train_set/Flood/260.jpg
inflating: dataset/train_set/Flood/261.jpg
inflating: dataset/train_set/Flood/262.jpg
inflating: dataset/train_set/Flood/263.jpg
inflating: dataset/train_set/Flood/264.jpg
```

```
inflating: dataset/train_set/Flood/265.jpg
inflating: dataset/train_set/Flood/266.jpg
inflating: dataset/train_set/Flood/267.jpg
inflating: dataset/train_set/Flood/268.jpg
inflating: dataset/train_set/Flood/269.jpg
inflating: dataset/train_set/Flood/27.jpg
inflating: dataset/train_set/Flood/270.jpg
inflating: dataset/train_set/Flood/271.jpg
inflating: dataset/train_set/Flood/272.jpg
inflating: dataset/train_set/Flood/273.jpg
inflating: dataset/train_set/Flood/274.jpg
inflating: dataset/train_set/Flood/275.jpg
inflating: dataset/train_set/Flood/276.jpg
inflating: dataset/train_set/Flood/277.jpg
inflating: dataset/train_set/Flood/278.jpg
inflating: dataset/train_set/Flood/279.jpg
inflating: dataset/train_set/Flood/28.jpg
inflating: dataset/train_set/Flood/280.jpg
inflating: dataset/train_set/Flood/281.jpg
inflating: dataset/train_set/Flood/282.jpg    inflating: dataset/train_set/Flood/283.jpg
inflating: dataset/train_set/Flood/284.jpg
inflating: dataset/train_set/Flood/285.jpg
inflating: dataset/train_set/Flood/286.jpg
inflating: dataset/train_set/Flood/287.jpg
inflating: dataset/train_set/Flood/288.jpg
inflating: dataset/train_set/Flood/289.jpg
inflating: dataset/train_set/Flood/29.jpg
inflating: dataset/train_set/Flood/290.jpg
inflating: dataset/train_set/Flood/291.jpg
inflating: dataset/train_set/Flood/292.jpg
inflating: dataset/train_set/Flood/293.jpg
inflating: dataset/train_set/Flood/294.jpg
inflating: dataset/train_set/Flood/295.jpg
inflating: dataset/train_set/Flood/296.jpg
inflating: dataset/train_set/Flood/297.jpg
inflating: dataset/train_set/Flood/298.jpg
inflating: dataset/train_set/Flood/299.jpg
inflating: dataset/train_set/Flood/3.jpg
inflating: dataset/train_set/Flood/30.jpg
inflating: dataset/train_set/Flood/31.jpg
inflating: dataset/train_set/Flood/32.jpg
inflating: dataset/train_set/Flood/33.jpg
inflating: dataset/train_set/Flood/34.jpg
inflating: dataset/train_set/Flood/35.jpg
inflating: dataset/train_set/Flood/36.jpg
```

```
inflating: dataset/train_set/Flood/37.jpg
inflating: dataset/train_set/Flood/38.jpg
inflating: dataset/train_set/Flood/39.jpg
inflating: dataset/train_set/Flood/4.jpg
inflating: dataset/train_set/Flood/40.jpg
inflating: dataset/train_set/Flood/41.jpg
inflating: dataset/train_set/Flood/42.jpg
inflating: dataset/train_set/Flood/43.jpg
inflating: dataset/train_set/Flood/44.jpg
inflating: dataset/train_set/Flood/45.jpg
inflating: dataset/train_set/Flood/46.jpg
inflating: dataset/train_set/Flood/47.jpg
inflating: dataset/train_set/Flood/48.jpg    inflating: dataset/train_set/Flood/49.jpg
inflating: dataset/train_set/Flood/5.jpg
inflating: dataset/train_set/Flood/50.jpg
inflating: dataset/train_set/Flood/51.jpg
inflating: dataset/train_set/Flood/52.jpg
inflating: dataset/train_set/Flood/53.jpg
inflating: dataset/train_set/Flood/54.jpg
inflating: dataset/train_set/Flood/55.jpg
inflating: dataset/train_set/Flood/56.jpg
inflating: dataset/train_set/Flood/57.jpg
inflating: dataset/train_set/Flood/58.jpg
inflating: dataset/train_set/Flood/59.jpg
inflating: dataset/train_set/Flood/6.jpg
inflating: dataset/train_set/Flood/60.jpg
inflating: dataset/train_set/Flood/61.jpg
inflating: dataset/train_set/Flood/62.jpg
inflating: dataset/train_set/Flood/63.jpg
inflating: dataset/train_set/Flood/64.jpg
inflating: dataset/train_set/Flood/65.jpg
inflating: dataset/train_set/Flood/66.jpg
inflating: dataset/train_set/Flood/67.jpg
inflating: dataset/train_set/Flood/68.jpg
inflating: dataset/train_set/Flood/69.jpg
inflating: dataset/train_set/Flood/7.jpg
inflating: dataset/train_set/Flood/70.jpg
inflating: dataset/train_set/Flood/71.jpg
inflating: dataset/train_set/Flood/72.jpg
inflating: dataset/train_set/Flood/73.jpg
inflating: dataset/train_set/Flood/74.jpg
inflating: dataset/train_set/Flood/75.jpg
inflating: dataset/train_set/Flood/76.jpg
inflating: dataset/train_set/Flood/77.jpg
inflating: dataset/train_set/Flood/78.jpg
```

```
inflating: dataset/train_set/Flood/79.jpg
inflating: dataset/train_set/Flood/8.jpg
inflating: dataset/train_set/Flood/80.jpg
inflating: dataset/train_set/Flood/81.jpg
inflating: dataset/train_set/Flood/82.jpg
inflating: dataset/train_set/Flood/83.jpg    inflating: dataset/train_set/Flood/84.jpg
inflating: dataset/train_set/Flood/85.jpg
inflating: dataset/train_set/Flood/86.jpg
inflating: dataset/train_set/Flood/87.jpg
inflating: dataset/train_set/Flood/88.jpg
inflating: dataset/train_set/Flood/89.jpg
inflating: dataset/train_set/Flood/9.jpg
inflating: dataset/train_set/Flood/90.jpg
inflating: dataset/train_set/Flood/91.jpg
inflating: dataset/train_set/Flood/92.jpg
inflating: dataset/train_set/Flood/93.jpg
inflating: dataset/train_set/Flood/94.jpg
inflating: dataset/train_set/Flood/95.jpg
inflating: dataset/train_set/Flood/96.jpg
inflating: dataset/train_set/Flood/97.jpg
inflating: dataset/train_set/Flood/98.jpg
inflating: dataset/train_set/Flood/99.jpg
 creating: dataset/train_set/Wildfire/
inflating: dataset/train_set/Wildfire/0.jpg
inflating: dataset/train_set/Wildfire/1.jpg
inflating: dataset/train_set/Wildfire/10.jpg
inflating: dataset/train_set/Wildfire/100.jpg
inflating: dataset/train_set/Wildfire/101.jpg
inflating: dataset/train_set/Wildfire/11.jpg
inflating: dataset/train_set/Wildfire/12.jpg
inflating: dataset/train_set/Wildfire/13.jpg
inflating: dataset/train_set/Wildfire/14.jpg
inflating: dataset/train_set/Wildfire/15.jpg
inflating: dataset/train_set/Wildfire/16.jpg
inflating: dataset/train_set/Wildfire/17.jpg
inflating: dataset/train_set/Wildfire/18.jpg
inflating: dataset/train_set/Wildfire/19.jpg
inflating: dataset/train_set/Wildfire/2.jpg
inflating: dataset/train_set/Wildfire/20.jpg
inflating: dataset/train_set/Wildfire/21.jpg
inflating: dataset/train_set/Wildfire/22.jpg
inflating: dataset/train_set/Wildfire/23.jpg
inflating: dataset/train_set/Wildfire/24.jpg
inflating: dataset/train_set/Wildfire/25.jpg    inflating: dataset/train_set/Wildfire/26.jpg
inflating: dataset/train_set/Wildfire/27.jpg
```

```
inflating: dataset/train_set/Wildfire/270.jpg
inflating: dataset/train_set/Wildfire/271.jpg
inflating: dataset/train_set/Wildfire/272.jpg
inflating: dataset/train_set/Wildfire/273.jpg
inflating: dataset/train_set/Wildfire/274.jpg
inflating: dataset/train_set/Wildfire/275.jpg
inflating: dataset/train_set/Wildfire/276.jpg
inflating: dataset/train_set/Wildfire/277.jpg
inflating: dataset/train_set/Wildfire/278.jpg
inflating: dataset/train_set/Wildfire/279.jpg
inflating: dataset/train_set/Wildfire/28.jpg
inflating: dataset/train_set/Wildfire/280.jpg
inflating: dataset/train_set/Wildfire/281.jpg
inflating: dataset/train_set/Wildfire/282.jpg
inflating: dataset/train_set/Wildfire/283.jpg
inflating: dataset/train_set/Wildfire/284.jpg
inflating: dataset/train_set/Wildfire/285.jpg
inflating: dataset/train_set/Wildfire/286.jpg
inflating: dataset/train_set/Wildfire/287.jpg
inflating: dataset/train_set/Wildfire/288.jpg
inflating: dataset/train_set/Wildfire/289.jpg
inflating: dataset/train_set/Wildfire/29.jpg
inflating: dataset/train_set/Wildfire/290.jpg
inflating: dataset/train_set/Wildfire/291.jpg
inflating: dataset/train_set/Wildfire/292.jpg
inflating: dataset/train_set/Wildfire/293.jpg
inflating: dataset/train_set/Wildfire/294.jpg
inflating: dataset/train_set/Wildfire/295.jpg
inflating: dataset/train_set/Wildfire/296.jpg
inflating: dataset/train_set/Wildfire/297.jpg
inflating: dataset/train_set/Wildfire/298.jpg
inflating: dataset/train_set/Wildfire/299.jpg
inflating: dataset/train_set/Wildfire/3.jpg
inflating: dataset/train_set/Wildfire/30.jpg
inflating: dataset/train_set/Wildfire/300.jpg
inflating: dataset/train_set/Wildfire/301.jpg
inflating: dataset/train_set/Wildfire/302.jpg    inflating: dataset/train_set/Wildfire/303.jpg
inflating: dataset/train_set/Wildfire/304.jpg
inflating: dataset/train_set/Wildfire/305.jpg
inflating: dataset/train_set/Wildfire/306.jpg
inflating: dataset/train_set/Wildfire/307.jpg
inflating: dataset/train_set/Wildfire/308.jpg
inflating: dataset/train_set/Wildfire/309.jpg
inflating: dataset/train_set/Wildfire/31.jpg
```

```
  inflating: dataset/train_set/Wildfire/310.jpg    inflating: 
dataset/train_set/Wildfire/311.jpg
  inflating: dataset/train_set/Wildfire/312.jpg
  inflating: dataset/train_set/Wildfire/313.jpg
  inflating: dataset/train_set/Wildfire/314.jpg
  inflating: dataset/train_set/Wildfire/315.jpg
  inflating: dataset/train_set/Wildfire/316.jpg
  inflating: dataset/train_set/Wildfire/317.jpg
  inflating: dataset/train_set/Wildfire/318.jpg
  inflating: dataset/train_set/Wildfire/319.jpg
  inflating: dataset/train_set/Wildfire/32.jpg
  inflating: dataset/train_set/Wildfire/320.jpg
  inflating: dataset/train_set/Wildfire/321.jpg
  inflating: dataset/train_set/Wildfire/322.jpg
  inflating: dataset/train_set/Wildfire/323.jpg
  inflating: dataset/train_set/Wildfire/324.jpg
  inflating: dataset/train_set/Wildfire/325.jpg
  inflating: dataset/train_set/Wildfire/326.jpg
  inflating: dataset/train_set/Wildfire/327.jpg
  inflating: dataset/train_set/Wildfire/328.jpg  6
  inflating: dataset/train_set/Wildfire/329.jpg
  inflating: dataset/train_set/Wildfire/33.jpg
  inflating: dataset/train_set/Wildfire/330.jpg
  inflating: dataset/train_set/Wildfire/331.jpg
  inflating: dataset/train_set/Wildfire/332.jpg
  inflating: dataset/train_set/Wildfire/333.jpg
  inflating: dataset/train_set/Wildfire/334.jpg
  inflating: dataset/train_set/Wildfire/335.jpg
  inflating: dataset/train_set/Wildfire/34.jpg
  inflating: dataset/train_set/Wildfire/35.jpg
  inflating: dataset/train_set/Wildfire/36.jpg    inflating: dataset/train_set/Wildfire/37.jpg
  inflating: dataset/train_set/Wildfire/38.jpg
  inflating: dataset/train_set/Wildfire/39.jpg
  inflating: dataset/train_set/Wildfire/4.jpg
  inflating: dataset/train_set/Wildfire/40.jpg
  inflating: dataset/train_set/Wildfire/41.jpg
  inflating: dataset/train_set/Wildfire/42.jpg
  inflating: dataset/train_set/Wildfire/43.jpg
  inflating: dataset/train_set/Wildfire/44.jpg
  inflating: dataset/train_set/Wildfire/45.jpg
  inflating: dataset/train_set/Wildfire/46.jpg
  inflating: dataset/train_set/Wildfire/47.jpg
  inflating: dataset/train_set/Wildfire/48.jpg
  inflating: dataset/train_set/Wildfire/49.jpg
  inflating: dataset/train_set/Wildfire/5.jpg
```

```
inflating: dataset/train_set/Wildfire/50.jpg
inflating: dataset/train_set/Wildfire/51.jpg
inflating: dataset/train_set/Wildfire/52.jpg
inflating: dataset/train_set/Wildfire/53.jpg
inflating: dataset/train_set/Wildfire/54.jpg
inflating: dataset/train_set/Wildfire/55.jpg
inflating: dataset/train_set/Wildfire/56.jpg
inflating: dataset/train_set/Wildfire/57.jpg
inflating: dataset/train_set/Wildfire/58.jpg
inflating: dataset/train_set/Wildfire/59.jpg
inflating: dataset/train_set/Wildfire/6.jpg
inflating: dataset/train_set/Wildfire/60.jpg
inflating: dataset/train_set/Wildfire/61.jpg
inflating: dataset/train_set/Wildfire/62.jpg
inflating: dataset/train_set/Wildfire/63.jpg
inflating: dataset/train_set/Wildfire/64.jpg
inflating: dataset/train_set/Wildfire/65.jpg
inflating: dataset/train_set/Wildfire/66.jpg
inflating: dataset/train_set/Wildfire/67.jpg
inflating: dataset/train_set/Wildfire/68.jpg
inflating: dataset/train_set/Wildfire/69.jpg
inflating: dataset/train_set/Wildfire/7.jpg
inflating: dataset/train_set/Wildfire/70.jpg
inflating: dataset/train_set/Wildfire/71.jpg    inflating: dataset/train_set/Wildfire/72.jpg
inflating: dataset/train_set/Wildfire/73.jpg
inflating: dataset/train_set/Wildfire/74.jpg
inflating: dataset/train_set/Wildfire/75.jpg
inflating: dataset/train_set/Wildfire/76.jpg
inflating: dataset/train_set/Wildfire/77.jpg
inflating: dataset/train_set/Wildfire/78.jpg
inflating: dataset/train_set/Wildfire/79.jpg
inflating: dataset/train_set/Wildfire/8.jpg
inflating: dataset/train_set/Wildfire/80.jpg
inflating: dataset/train_set/Wildfire/81.jpg
inflating: dataset/train_set/Wildfire/82.jpg
inflating: dataset/train_set/Wildfire/83.jpg
inflating: dataset/train_set/Wildfire/84.jpg
inflating: dataset/train_set/Wildfire/85.jpg
inflating: dataset/train_set/Wildfire/86.jpg
inflating: dataset/train_set/Wildfire/87.jpg
inflating: dataset/train_set/Wildfire/88.jpg
inflating: dataset/train_set/Wildfire/89.jpg
inflating: dataset/train_set/Wildfire/9.jpg
inflating: dataset/train_set/Wildfire/90.jpg
inflating: dataset/train_set/Wildfire/91.jpg
```

```
  inflating: dataset/train_set/Wildfire/92.jpg
  inflating: dataset/train_set/Wildfire/93.jpg
  inflating: dataset/train_set/Wildfire/94.jpg
  inflating: dataset/train_set/Wildfire/95.jpg
  inflating: dataset/train_set/Wildfire/96.jpg
  inflating: dataset/train_set/Wildfire/97.jpg
  inflating: dataset/train_set/Wildfire/98.jpg    inflating:
dataset/train_set/Wildfire/99.jpg
```

```
from tensorflow.keras.preprocessing.image import ImageDataGenerator
```

```
train_datagen =
ImageDataGenerator(rescale=1./255,zoom_range=0.2,horizontal_flip=True,shear_range=0.2) test_datagen =
ImageDataGenerator(rescale=1./255)
x_train=train_datagen.flow_from_directory("/content/drive/MyDrive/dataset/dataset/train_set",tar
get_size=(64,64),class_mode='categorical',batch_size=5,color_mode='rgb')
x_test=test_datagen.flow_from_directory(r"/content/drive/MyDrive/dataset/dataset/test_set",targ
et_size=(64,64),class_mode='categorical',batch_size=5,color_mode='rgb')
```

```
Found 742 images belonging to 4 classes.
Found 198 images belonging to 4 classes.
```

```
import numpy as np import tensorflow
from tensorflow.keras.models import Sequential from tensorflow.keras.layers import
Dense,Conv2D,MaxPooling2D,Flatten
```

```
model=Sequential()
```

```
model.add(Conv2D(32,(3,3),input_shape=(64,64,3),activation='relu'))
model.add(MaxPooling2D(pool_size=(2,2))) model.add(Conv2D(32,(3,3),activation='relu'))
model.add(MaxPooling2D(pool_size=(2,2))) model.add(Flatten())
model.add(Dense(units=128,activation='relu')) model.add(Dense(units=4,activation='softmax'))
model.compile(loss='categorical_crossentropy',optimizer='adam',metrics=['accuracy'])
```

```
model.add(Dense(units=128,activation='relu')) model.add(Dense(units=4,activation='softmax'))
```

```
model.compile(loss='categorical_crossentropy',optimizer='adam',metrics=['accuracy']) model.summary()
```

```
Model: "sequential_2"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 conv2d_7 (Conv2D)           (None, 62, 62, 32)        896

 max_pooling2d_4 (MaxPooling  (None, 31, 31, 32)       0
 2D)

 conv2d_8 (Conv2D)           (None, 29, 29, 32)        9248

 max_pooling2d_5 (MaxPooling  (None, 14, 14, 32)       0
 2D)

 flatten_2 (Flatten)         (None, 6272)              0

 dense_4 (Dense)             (None, 128)               802944

 dense_5 (Dense)             (None, 4)                 516

 dense_6 (Dense)             (None, 128)               640

 dense_7 (Dense)             (None, 4)                 516

=================================================================
Total params: 814,760
Trainable params: 814,760
Non-trainable params: 0
_________________________________________________________________
```

```
model.fit_generator(generator=x_train,steps_per_epoch=len(x_train),validation_data=x_test,vali
dation_steps=len(x_test),epochs=20)
```

```
/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:1: UserWarning:
`Model.fit_generator` is deprecated and will be removed in a future version. Please use `Model.fit`, which supports
generators.
  """Entry point for launching an IPython kernel.
```

```
Epoch 1/20
149/149 [==============================] - 429s 3s/step - loss: 1.1075 - accuracy:
0.5431 - val_loss: 0.8727 - val_accuracy: 0.6414
Epoch 2/20
149/149 [==============================] - 35s 231ms/step - loss: 0.7546 - accuracy:
0.6873 - val_loss: 0.6263 - val_accuracy: 0.7525
Epoch 3/20
```

```
149/149 [==============================] - 34s 225ms/step - loss: 0.6689 - accuracy:
0.7318 - val_loss: 0.7319 - val_accuracy: 0.7273
Epoch 4/20
149/149 [==============================] - 33s 217ms/step - loss: 0.5827 - accuracy:
0.7574 - val_loss: 0.7686 - val_accuracy: 0.7424
Epoch 5/20
149/149 [==============================] - 33s 219ms/step - loss: 0.5061 - accuracy:
0.8100 - val_loss: 0.5469 - val_accuracy: 0.8030
Epoch 6/20
149/149 [==============================] - 34s 226ms/step - loss: 0.4730 - accuracy:
0.8315 - val_loss: 0.5556 - val_accuracy: 0.8182
Epoch 7/20
149/149 [==============================] - 32s 218ms/step - loss: 0.4642 - accuracy:
0.8221 - val_loss: 0.5224 - val_accuracy: 0.8283
Epoch 8/20
149/149 [==============================] - 32s 217ms/step - loss: 0.4213 - accuracy:
0.8288 - val_loss: 0.6842 - val_accuracy: 0.8030
Epoch 9/20
149/149 [==============================] - 33s 223ms/step - loss: 0.3917 - accuracy:
0.8544 - val_loss: 0.6540 - val_accuracy: 0.7727
Epoch 10/20
149/149 [==============================] - 33s 219ms/step - loss: 0.3245 - accuracy:
0.8827 - val_loss: 0.8957 - val_accuracy: 0.7475
Epoch 11/20
149/149 [==============================] - 32s 216ms/step - loss: 0.3467 - accuracy:
0.8747 - val_loss: 0.5863 - val_accuracy: 0.8283
Epoch 12/20
149/149 [==============================] - 32s 217ms/step - loss: 0.3061 - accuracy:
0.8787 - val_loss: 0.7613 - val_accuracy: 0.7980
Epoch 13/20
149/149 [==============================] - 33s 220ms/step - loss: 0.2523 - accuracy:
0.9137 - val_loss: 0.7057 - val_accuracy: 0.7980
Epoch 14/20
149/149 [==============================] - 32s 216ms/step - loss: 0.2450 - accuracy:
0.9272 - val_loss: 0.7239 - val_accuracy: 0.8030
Epoch 15/20
149/149 [==============================] - 32s 218ms/step - loss: 0.2441 - accuracy:
0.9164 - val_loss: 0.6528 - val_accuracy: 0.8182
Epoch 16/20
149/149 [==============================] - 33s 222ms/step - loss: 0.2148 - accuracy:
0.9111 - val_loss: 0.8139 - val_accuracy: 0.7929
Epoch 17/20
149/149 [==============================] - 33s 219ms/step - loss: 0.2063 - accuracy:
0.9299 - val_loss: 0.8902 - val_accuracy: 0.7879
Epoch 18/20
```

```
149/149 [==============================] - 34s 228ms/step - loss: 0.1718 - accuracy:
0.9407 - val_loss: 0.8917 - val_accuracy: 0.7980
Epoch 19/20
149/149 [==============================] - 34s 232ms/step - loss: 0.1728 - accuracy:
0.9340 - val_loss: 1.5961 - val_accuracy: 0.6717
Epoch 20/20
149/149 [==============================] - 34s 225ms/step - loss: 0.1809 - accuracy:
0.9299 - val_loss: 0.7846 - val_accuracy: 0.8182

<keras.callbacks.History at 0x7f6a5c2fd310>
```

```
model.save('disaster.h5') model_json=model.to_json() with
open("model-bw.json","w") as json_file:
json_file.write(model_json)
```

```
from tensorflow.keras.models import load_model from
tensorflow.keras.preprocessing import image
model=load_model('disaster.h5') x_train.class_indices

{'Cyclone': 0, 'Earthquake': 1, 'Flood': 2, 'Wildfire': 3}
```

```
img =
image.load_img(r"/content/drive/MyDrive/dataset/dataset/test_set/Earthquake/1328.jpg",target_ size=(64,64))
x=image.img_to_array(img) x=np.expand_dims(x,axis=0)
index=['Cyclone','Earthquake','Flood','Wildfire']
y=np.argmax(model.predict(x),axis=1) print(index[int(y)])

1/1 [==============================] - 0s 19ms/step
Earthquake
```

```
img =
image.load_img(r"/content/drive/MyDrive/dataset/dataset/test_set/Cyclone/869.jpg",target_size=
(64,64))
x=image.img_to_array(img) x=np.expand_dims(x,axis=0)
index=['Cyclone','Earthquake','Flood','Wildfire']
y=np.argmax(model.predict(x),axis=1) print(index[int(y)])

1/1 [==============================] - 0s 19ms/step
Cyclone
```

Home page.html

```
<!DOCTYPE html>

<html>
                        <head>
                                  <title>Home page</title>
                        </head>
                        <body>
                                  <a href = "Intro page.html">Intro page </a>
                                  <a href = "Upload page.html">Upload page </a>

                                  <h1>AI BASED NATURAL DISASTER ANALYSIS</h1>
                                  <img src = "D:\Disasters\CYCLONE.jpg">
                                  <img src = "D:\Disasters\EARTHQUAKE.jpg">
                                  <img src = "D:\Disasters\FLOOD.jpg">
                                  <img src = "D:\Disasters\FOREST FIRE.jpg">
                                    </body>
</html>
```

Intro page.html

```
<!DOCTYPE html>

<html>
                        <head>
                                  <title>Intro page</title>
                        </head>
                        <body>
                                  <a href = "Home page.html">Home page </a>
                                  <a href = "Upload page.html">Upload page </a>

                                  <h1>AI BASED NATURAL DISASTER ANALYSIS</h1>
                                   <p>A Disaster is a serious problem occuring over a short or long period of time that causes widespread human, material, economic or environm
                                    </body>
</html>
```

Upload page.html

```
<!DOCTYPE html>

<html>
                        <head>
                                  <title>Upload page</title>
                        </head>
                        <body>
                                  <a href = "Intro page.html">Intro page </a>
                                  <a href = "Home page.html">Home page </a>

                                  <h1>AI BASED NATURAL DISASTER ANALYSIS</h1>
                                  <img src = "D:\Emergency\Emergency alert.jpeg">
                          </body>
</html>
```

OUTPUTS:

```
# connecting with IBM Cloud

!pip install watson-machine-learning-client

Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: watson-machine-learning-client in /usr/local/lib/python3.7/dist-packages (1.0.391)
Requirement already satisfied: ibm-cos-sdk in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (2.7.0)
Requirement already satisfied: lomond in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (0.3.3)
Requirement already satisfied: urllib3 in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (1.26.12)
Requirement already satisfied: certifi in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (2022.9.24)
Requirement already satisfied: requests in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (2.28.1)
Requirement already satisfied: tqdm in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (4.64.1)
Requirement already satisfied: boto3 in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (1.26.13)
Requirement already satisfied: pandas in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (1.3.5)
Requirement already satisfied: tabulate in /usr/local/lib/python3.7/dist-packages (from watson-machine-learning-client) (0.8.10)
Requirement already satisfied: botocore<1.30.0,>=1.29.13 in /usr/local/lib/python3.7/dist-packages (from boto3->watson-machine-learning-client) (1.29.13)
Requirement already satisfied: jmespath<2.0.0,>=0.7.1 in /usr/local/lib/python3.7/dist-packages (from boto3->watson-machine-learning-client) (0.10.0)
Requirement already satisfied: s3transfer<0.7.0,>=0.6.0 in /usr/local/lib/python3.7/dist-packages (from boto3->watson-machine-learning-client) (0.6.0)
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in /usr/local/lib/python3.7/dist-packages (from botocore<1.30.0,>=1.29.13->boto3->watson-machine-learning-client) (2.8.2)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.7/dist-packages (from python-dateutil<3.0.0,>=2.1->botocore<1.30.0,>=1.29.13->boto3->watson-machine-learning-client) (1.15.0)
Requirement already satisfied: ibm-cos-sdk-core==2.7.0 in /usr/local/lib/python3.7/dist-packages (from ibm-cos-sdk->watson-machine-learning-client) (2.7.0)
Requirement already satisfied: ibm-cos-sdk-s3transfer==2.7.0 in /usr/local/lib/python3.7/dist-packages (from ibm-cos-sdk->watson-machine-learning-client) (2.7.0)
Requirement already satisfied: docutils<0.16,>=0.10 in /usr/local/lib/python3.7/dist-packages (from ibm-cos-sdk-core==2.7.0->ibm-cos-sdk->watson-machine-learning-client) (0.15.2)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.7/dist-packages (from requests->watson-machine-learning-client) (2.10)
Requirement already satisfied: charset-normalizer<3,>=2 in /usr/local/lib/python3.7/dist-packages (from requests->watson-machine-learning-client) (2.1.1)
Requirement already satisfied: pytz>=2017.3 in /usr/local/lib/python3.7/dist-packages (from pandas->watson-machine-learning-client) (2022.6)
Requirement already satisfied: numpy>=1.17.3 in /usr/local/lib/python3.7/dist-packages (from pandas->watson-machine-learning-client) (1.21.6)
```

```
!pip install ibm_watson_machine_learning

Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Collecting ibm_watson_machine_learning
  Downloading ibm_watson_machine_learning-1.0.257-py3-none-any.whl (1.8 MB)
     |████████████████████████████████| 1.8 MB 5.0 MB/s
Requirement already satisfied: lomond in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (0.3.3)
Collecting ibm-cos-sdk==2.7.*
  Downloading ibm-cos-sdk-2.7.0.tar.gz (51 kB)
     |████████████████████████████████| 51 kB 686 kB/s
Requirement already satisfied: urllib3 in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (1.26.12)
Requirement already satisfied: packaging in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (21.3)
Requirement already satisfied: pandas<1.5.0,>=0.24.2 in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (1.3.5)
Requirement already satisfied: certifi in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (2022.9.24)
Requirement already satisfied: requests in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (2.28.1)
Requirement already satisfied: tabulate in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (0.8.10)
Requirement already satisfied: importlib-metadata in /usr/local/lib/python3.7/dist-packages (from ibm_watson_machine_learning) (4.13.0)
Collecting ibm-cos-sdk-core==2.7.0
  Downloading ibm-cos-sdk-core-2.7.0.tar.gz (824 kB)
     |████████████████████████████████| 824 kB 50.8 MB/s
Collecting ibm-cos-sdk-s3transfer==2.7.0
  Downloading ibm-cos-sdk-s3transfer-2.7.0.tar.gz (133 kB)
     |████████████████████████████████| 133 kB 67.9 MB/s
Requirement already satisfied: jmespath<1.0.0,>=0.7.1 in /usr/local/lib/python3.7/dist-packages (from ibm-cos-sdk==2.7.*->ibm_watson_machine_learning) (0.10.0)
Collecting docutils<0.16,>=0.10
  Downloading docutils-0.15.2-py3-none-any.whl (547 kB)
     |████████████████████████████████| 547 kB 55.1 MB/s
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in /usr/local/lib/python3.7/dist-packages (from ibm-cos-sdk-core==2.7.0->ibm-cos-sdk==2.7.*->ibm_watson_machine_learning) (2.8.2)
Requirement already satisfied: pytz>=2017.3 in /usr/local/lib/python3.7/dist-packages (from pandas<1.5.0,>=0.24.2->ibm_watson_machine_learning) (2022.6)
Requirement already satisfied: numpy>=1.17.3 in /usr/local/lib/python3.7/dist-packages (from pandas<1.5.0,>=0.24.2->ibm_watson_machine_learning) (1.21.6)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.7/dist-packages (from python-dateutil<3.0.0,>=2.1->ibm-cos-sdk-core==2.7.0->ibm-cos-sdk==2.7.*->ibm_watson_machine_learning) (1.15.0)
Requirement already satisfied: charset-normalizer<3,>=2 in /usr/local/lib/python3.7/dist-packages (from requests->ibm_watson_machine_learning) (2.1.1)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.7/dist-packages (from requests->ibm_watson_machine_learning) (2.10)
Requirement already satisfied: typing-extensions>=3.6.4 in /usr/local/lib/python3.7/dist-packages (from importlib-metadata->ibm_watson_machine_learning) (4.1.1)
```

```
Requirement already satisfied: zipp>=0.5 in /usr/local/lib/python3.7/dist-packages (from importlib-metadata->ibm_watson_machine_learning) (3.10.0)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in /usr/local/lib/python3.7/dist-packages (from packaging->ibm_watson_machine_learning) (3.0.9)
Building wheels for collected packages: ibm-cos-sdk, ibm-cos-sdk-core, ibm-cos-sdk-s3transfer
  Building wheel for ibm-cos-sdk (setup.py) ... done
  Created wheel for ibm-cos-sdk: filename=ibm_cos_sdk-2.7.0-py2.py3-none-any.whl size=72563 sha256=db75e4623c1d5e5b5c1cb457d58389f366cf76321e899a17e44dd62cfa28a3e4
  Stored in directory: /root/.cache/pip/wheels/47/22/bf/e1154ff0f5de93cc477acd0ca69abfbb8b799c5b28a66b44c2
  Building wheel for ibm-cos-sdk-core (setup.py) ... done
  Created wheel for ibm-cos-sdk-core: filename=ibm_cos_sdk_core-2.7.0-py2.py3-none-any.whl size=501013 sha256=bdafbc05a701aa743c82cb536d62547993058540a1a653bb9a17f40175198c3d
  Stored in directory: /root/.cache/pip/wheels/6c/a2/e4/c16d02f809a3ea998e17cfd02c13369281f3d232aaf5902c19
  Building wheel for ibm-cos-sdk-s3transfer (setup.py) ... done
  Created wheel for ibm-cos-sdk-s3transfer: filename=ibm_cos_sdk_s3transfer-2.7.0-py2.py3-none-any.whl size=88622 sha256=1d07c79a8dc1feceaecfe65ae481047d9c5d2fb72ecb9865a764be509438ca8f
  Stored in directory: /root/.cache/pip/wheels/5f/b7/14/fbe02bc1ef1af890650c7e51743d1c83890852e598d164b9da
Successfully built ibm-cos-sdk ibm-cos-sdk-core ibm-cos-sdk-s3transfer
Installing collected packages: docutils, ibm-cos-sdk-core, ibm-cos-sdk-s3transfer, ibm-cos-sdk, ibm-watson-machine-learning
  Attempting uninstall: docutils
    Found existing installation: docutils 0.17.1
    Uninstalling docutils-0.17.1:
      Successfully uninstalled docutils-0.17.1
  Attempting uninstall: ibm-cos-sdk-core
    Found existing installation: ibm-cos-sdk-core 2.12.0
    Uninstalling ibm-cos-sdk-core-2.12.0:
      Successfully uninstalled ibm-cos-sdk-core-2.12.0
  Attempting uninstall: ibm-cos-sdk-s3transfer
    Found existing installation: ibm-cos-sdk-s3transfer 2.12.0
    Uninstalling ibm-cos-sdk-s3transfer-2.12.0:
      Successfully uninstalled ibm-cos-sdk-s3transfer-2.12.0
  Attempting uninstall: ibm-cos-sdk
    Found existing installation: ibm-cos-sdk 2.12.0
    Uninstalling ibm-cos-sdk-2.12.0:
      Successfully uninstalled ibm-cos-sdk-2.12.0
Successfully installed docutils-0.15.2 ibm-cos-sdk-2.7.0 ibm-cos-sdk-core-2.7.0 ibm-cos-sdk-s3transfer-2.7.0 ibm-watson-machine-learning-1.0.257
```

```python
from ibm_watson_machine_learning import APIClient
```

```python
wml_credentials = {
    "url" : "https://us-south.ml.cloud.ibm.com",
    "apikey" :"vC0huO9WFiLZVMOSDTra99pdVQRI7nlGFSpgQvBepP9J"
}
```

```python
wml_client=APIClient(wml_credentials)
wml_client.spaces.list()
```

```
Python 3.7 and 3.8 frameworks are deprecated and will be removed in a future release. Use Python 3.9 framework instead.
Note: 'limit' is not provided. Only first 50 records will be displayed if the number of records exceed 50
------------------------------------  --------------------------------------  ------------------------
ID                                    NAME                                    CREATED
c147dde1-e498-4151-bcf8-7b82eebf2ee3  NaturalDisasterIntensityClassification  2022-11-08T14:27:07.638Z
------------------------------------  --------------------------------------  ------------------------
```

```python
space_id="c147dde1-e498-4151-bcf8-7b82eebf2ee3"
```

```python
wml_client.set.default_space(space_id)
```

```
'SUCCESS'
```

```python
wml_client.software_specifications.list(500)
```

```
------------------------------  ------------------------------------  ----
NAME                            ASSET_ID                              TYPE
default_py3.6                   0062b8c9-8b7d-44a0-a9b9-46c416adcbd9  base
kernel-spark3.2-scala2.12       020d69ce-7ac1-5e68-ac1a-31189867356a  base
pytorch-onnx_1.3-py3.7-edt      069ea134-3346-5748-b513-49120e15d288  base
scikit-learn_0.20-py3.6         09c5a1d0-9c1e-4473-a344-eb7b665ff687  base
spark-mllib_3.0-scala_2.12      09f4cff0-90a7-5899-b9ed-1ef348aebdee  base
pytorch-onnx_rt22.1-py3.9       0b848dd4-e681-5599-be41-b5f6fccc6471  base
ai-function_0.1-py3.6           0cdb0f1e-5376-4f4d-92dd-da3b69aa9bda  base
shiny-r3.6                      0e6e79df-875e-4f24-8ae9-62dcc2148306  base
tensorflow_2.4-py3.7-horovod    1092590a-307d-563d-9b62-4eb7d64b3f22  base
pytorch_1.1-py3.6               10ac12d6-6b30-4ccd-8392-3e922c096a92  base
tensorflow_1.15-py3.6-ddl       111e41b3-de2d-5422-a4d6-bf776828c4b7  base
autoai-kb_rt22.2-py3.10         125b6d9a-5b1f-5e8d-972a-b251688ccf40  base
runtime-22.1-py3.9              12b83a17-24d8-5082-900f-0ab31fbfd3cb  base
scikit-learn_0.22-py3.6         154010fa-5b3b-4ac1-82af-4d5ee5abbc85  base
default_r3.6                    1b70aec3-ab34-4b87-8aa0-a4a3c8296a36  base
pytorch-onnx_1.3-py3.6          1bc6029a-cc97-56da-b8e0-39c3880dbbe7  base
kernel-spark3.3-r3.6            1c9e5454-f216-59dd-a20e-474a5cdf5988  base
pytorch-onnx_rt22.1-py3.9-edt   1d362186-7ad5-5b59-8b6c-9d0880bde37f  base
tensorflow_2.1-py3.6            1eb25b84-d6ed-5dde-b6a5-3fbdf1665666  base
spark-mllib_3.2                 20047f72-0a98-58c7-9ff5-a77b012eb8f5  base
tensorflow_2.4-py3.8-horovod    217c16f6-178f-56bf-824a-b19f20564c49  base
runtime-22.1-py3.9-cuda         26215f05-08c3-5a41-a1b0-da66306ce658  base
do_py3.8                        295addb5-9ef9-547e-9bf4-92ae3563e720  base
autoai-ts_3.8-py3.8             2aa0c932-798f-5ae9-abd6-15e0c2402fb5  base
tensorflow_1.15-py3.6           2b73a275-7cbf-420b-a912-eae7f436e0bc  base
kernel-spark3.3-py3.9           2b7961e2-e3b1-5a8c-a491-482c8368839a  base
pytorch_1.2-py3.6               2c8ef57d-2687-4b7d-acce-01f94976dac1  base
spark-mllib_2.3                 2e51f700-bca0-4b0d-88dc-5c6791338875  base
pytorch-onnx_1.1-py3.6-edt      32983cea-3f32-4400-8965-dde874a8d67e  base
spark-mllib_3.0-py37            36507ebe-8770-55ba-ab2a-eafe787600e9  base
spark-mllib_2.4                 390d21f8-e58b-4fac-9c55-d7ceda621326  base
```

```
nlp-py3.8                       96e60351-99d4-5a1c-9cc0-473ac1b5a864  base
cuda-py3.7                      9a44990c-1aa1-4c7d-baf8-c4099011741c  base
hybrid_0.2                      9b3f9040-9cee-4ead-8d7a-780600f542f7  base
spark-mllib_3.0-py38            9f7a8fc1-4d3c-5e65-ab90-41fa8de2d418  base
autoai-kb_3.3-py3.7             a545cca3-02df-5c61-9e88-998b09dc79af  base
spark-mllib_3.0-py39            a6082a27-5acc-5163-b02c-6b96916eb5e0  base
runtime-22.1-py3.9-do           a7e7dbf1-1d03-5544-994d-e5ec845ce99a  base
default_py3.8                   ab9e1b80-f2ce-592c-a7d2-4f2344f77194  base
tensorflow_rt22.1-py3.9         acd9c798-6974-5d2f-a657-ce06e986df4d  base
kernel-spark3.2-py3.9           ad7033ee-794e-58cf-812e-a95f4b64b207  base
autoai-obm_2.0 with Spark 3.0   af10f35f-69fa-5d66-9bf5-acb58434263a  base
runtime-22.2-py3.10             b56101f1-309d-549b-a849-eaa63f77b2fb  base
default_py3.7_opence            c2057dd4-f42c-5f77-a02f-72bdbd3282c9  base
tensorflow_2.1-py3.7            c4032338-2a40-500a-beef-b01ab2667e27  base
do_py3.7_opence                 cc8f8976-b74a-551a-bb66-6377f8d865b4  base
spark-mllib_3.3                 d11f2434-4fc7-58b7-8a62-755da64fdaf8  base
autoai-kb_3.0-py3.6             d139f196-e04b-5d8b-9140-9a10ca1fa91a  base
spark-mllib_3.0-py36            d82546d5-dd78-5fbb-9131-2ec309bc56ed  base
autoai-kb_3.4-py3.8             da9b39c3-758c-5a4f-9cfd-457dd4d8c395  base
kernel-spark3.2-r3.6            db2fe4d6-d641-5d05-9972-73c654c60e0a  base
autoai-kb_rt22.1-py3.9          db6afe93-665f-5910-b117-d879897404d9  base
tensorflow_rt22.1-py3.9-horovod dda170cc-ca67-5da7-9b7a-cf84c6987fae  base
autoai-ts_1.0-py3.7             deef04f0-0c42-5147-9711-89f9904299db  base
tensorflow_2.1-py3.7-horovod    e384fce5-fdd1-53f8-bc71-11326c9c635f  base
default_py3.7                   e4429883-c883-42b6-87a8-f419d64088cd  base
do_22.1                         e51999ba-6452-5f1f-8287-17228b88b652  base
autoai-obm_3.2                  eae86aab-da30-5229-a6a6-1d0d4e368983  base
runtime-22.2-r4.2               ec0a3d28-08f7-556c-9674-ca7c2dba30bd  base
tensorflow_rt22.2-py3.10        f65bd165-f057-55de-b5cb-f97cf2c0f393  base
do_20.1                         f686cdd9-7904-5f9d-a732-01b0d6b10dc5  base
pytorch-onnx_rt22.2-py3.10-edt  f8a05d07-e7cd-57bb-a10b-23f1d4b837ac  base
scikit-learn_0.19-py3.6         f963fa9d-4bb7-5652-9c5d-8d9289ef6ad9  base
tensorflow_2.4-py3.8            fe185c44-9a99-5425-986b-59bd1d2eda46  base
------------------------------  ------------------------------------  ----
```

```
[ ] software_spec_uid=wml_client.software_specifications.get_uid_by_name("tensorflow_rt22.1-py3.9")

[ ] software_spec_uid

    'acd9c798-6974-5d2f-a657-ce06e986df4d'

[ ] model_details = wml_client.repository.store_model(model="naturaldisaster-classification-model.tgz",meta_props={
        wml_client.repository.ModelMetaNames.NAME : "CNN model",
        wml_client.repository.ModelMetaNames.TYPE : "tensorflow_2.7",
        wml_client.repository.ModelMetaNames.SOFTWARE_SPEC_UID: software_spec_uid
    })

[ ] model_id = wml_client.repository.get_model_id(model_details)

[ ] model_id

    'b859dab6-7364-4ad8-a417-559922bbefc2'

[ ] wml_client.repository.download(model_id,'naturaldisaster.tar.gb')

    Successfully saved model content to file: 'naturaldisaster.tar.gb'
    '/content/drive/MyDrive/dataset/naturaldisaster.tar.gb'
```

```
[ ] model_details

    {'entity': {'hybrid_pipeline_software_specs': [],
      'software_spec': {'id': 'acd9c798-6974-5d2f-a657-ce06e986df4d',
       'name': 'tensorflow_rt22.1-py3.9'},
      'type': 'tensorflow_2.7'},
     'metadata': {'created_at': '2022-11-21T17:56:32.685Z',
      'id': 'b859dab6-7364-4ad8-a417-559922bbefc2',
      'modified_at': '2022-11-21T17:56:36.195Z',
      'name': 'CNN model',
      'owner': 'IBMid-6630043HKX',
      'resource_key': '211b15f2-fc2e-4c95-866c-45a87d520abf',
      'space_id': 'c147dde1-e498-4151-bcf8-7b82eebf2ee3'},
     'system': {'warnings': []}}
```

GITHUB LINK :

https://github.com/IBM-EPBL/IBM-Project-21910-1659796595

Team Id : PNT2022TMID29409

Project Name : Natural Disaster Intensity Analysis and Classification Using Artificial Intelligence