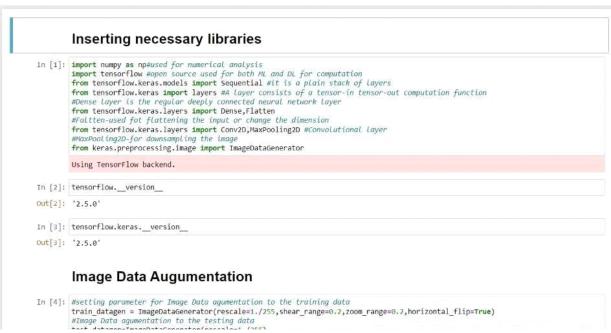
PROJECT DEVELOPMENT PHASE SPRINT - III

Date	17 - NOV - 2022
Team ID	PNT2022TMID49204
Project Name	Natural Disaster Intensity Analysis and Classification using
	Artificial Intelligence

DETECTION AND ANALYSIS OF DATA:

After Testing and Training the model, data which given in dataset are analysed and visualised effectively to detect the Disaster Type. Using webcam, it can capture image or video stream of Disaster, to detect and analyse the type of Disaster.



MODEL BUILDING:

Building a Model with web application named "FLASK", modelbuilding process consist several steps like,

- Import the model building Libraries
- Initializing the model

- Adding CNN Layers
- Adding Hidden Layer
- Adding Output Layer
- Configure the Learning Process
- Training and testing the model

all the above processes are done and saved in a model.

```
In [1]: import numpy as np#used for numerical analysis
import tensorflow #open source used for both ML and DL for computation
from tensorflow #open source used for both ML and DL for computation
from tensorflow #open source used for both ML and DL for computation
from tensorflow #open source used for both ML and DL for computation
#ones to layer is the regular deeply connected eneral network layer
from tensorflow.keras.layers import Dense,Flatten
#foltten-used for flattening the image
from tensorflow.keras.layers import Conv2D,MaxPooling2D #convolutional Layer
#MOxPooling2D-for downsampling the image
from keras.preprocessing.image import ImageDataGenerator

Using Tensorflow backend.

In [2]: tensorflow._version_
Out[2]: '2.5.0'

Image Data Augumentation

In [4]: #setting parameter for Image Data agumentation to the training data
train_datagen = ImageOataGenerator(rescale=1./255, shear_range=0.2, horizontal_flip=True)
#Image Data agumentation to the testing data
test_datagen=ImageOataGenerator(rescale=1./255, shear_range=0.2, coom_range=0.2, horizontal_flip=True)
#Image Data agumentation to the testing data
test_datagen=ImageOataGenerator(rescale=1./255, shear_range=0.2, coom_range=0.2, horizontal_flip=True)
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test_datagen=ImageOataGenerator(rescale=1./255, shear_range=0.2, coom_range=0.2, horizontal_flip=True)
```

```
from flask import Flask, render_template, request
# Flask-It is our framework which we are going to use to run/serve our application. #request-for accessing file which was uploaded by the user on our application.
import cv2 # opency library
from tensorflow.keras.models import load_model#to load our trained model
import numpy as np
from werkzeug.utils import secure_filename
    speech=gTTS(text)
print(type(speech))
speech.save("output1.mp3")
playsound("output1.mp3")
app = Flask(_name__,template_folder="templates") # initializing a flask app
model=load_model(r'C:\Users\user\Desktop\IBM\Flask\templates\disaster.h5')
print("Loaded model from disk")
app=Flask(__name__,template_folder="templates")
@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_template('intro.html')
@app.route('/upload', methods=['GET', 'POST'])
```