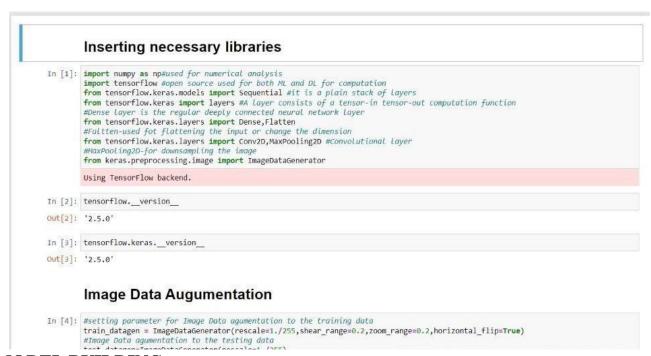
PROJECT DEVELOPMENT PHASE SPRINT - III

Date	10 NOV - 2022
Team ID	PNT2022TMID3949
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 analyzed and visualized effectively to detect the Disaster Type. Using webcam, it can capture image or video stream of Disaster, to detect and analyze the type of Disaster.



MODEL BUILDING:

Building a Model with web application named "FLASK", model building 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.

```
Inserting necessary libraries
In [1]: import numpy as np#used for numerical analysis
          import tensorflow #open source used for both ML and DL for computation
from tensorflow.keras.models import Sequential #it is a plain stack of layers
          from tensorflow.keras import layers #A layer consists of a tensor-in tensor-out computation function #Dense layer is the regular deeply connected neural network layer
          from tensorflow.keras.layers import Dense,Flatten
          #Faltten-used fot flattening the input or change the dimension
          from tensorflow.keras.layers import Conv2D,MaxPooling2D #Convolutional layer
#MaxPooling2D-for downsampling the image
          from keras.preprocessing.image import ImageDataGenerator
          Using TensorFlow backend.
In [2]: tensorflow.__version__
Out[2]: '2.5.0'
In [3]: tensorflow.keras.__version_
Out[3]: '2.5.0'
          Image Data Augumentation
In [4]: #setting parameter for Image Data agumentation to the training data
          train_datagen = ImageDataGenerator(rescale=1./255, shear_range=0.2, zoom_range=0.2, horizontal_flip=True)
          #Image Data agumentation to the testing data
```

```
from flask import Flask,render_template,request
from tensorflow.keras.models import load_model#to load our trained model
import numpy as np
from werkzeug.utils import secure_filename
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'])
   return render template('intro.html')
@app.route('/upload', methods=['GET', 'POST'])
```

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