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        "from keras.preprocessing.image import ImageDataGenerator"
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        "train_datagen=ImageDataGenerator(rescale=1./255,shear_range=0.2,rotation
_range=180,zoom_range=0.2,horizontal_flip=True)\n",
        "\n",
        "test_datagen=ImageDataGenerator(rescale=1./255)"
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        "#Applying ImageDataGenerator functionality to trainset\n",
        "x_train=train_datagen.flow_from_directory('/content/drive/MyDrive/Dataset/Dat
aset/train_set',target_size=(128,128),batch_size=32,class_mode='binary')"
      ],
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set/test_set',target_size=(128,128),batch_size=32,class_mode='binary')"
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     "#import model building libraries\n",
     "\n",
     "#To define Linear initialisation import Sequential\n",
     "from keras.models import Sequential\n",
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        "#To add layers import Dense\n",
        "from keras.layers import Dense\n",
        "#To create Convolution kernel import Convolution2D\n",
        "from keras.layers import Convolution2D\n",
        "#import Maxpooling layer\n",
        "from keras.layers import MaxPooling2D\n",
        "#import flatten layer\n",
        "from keras.layers import Flatten\n",
        "import warnings\n",
        "warnings.filterwarnings('ignore')"
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        "#initializing the model\n",
        "model=Sequential()"
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        "#add convolutional layer\n",
        "model.add(Convolution2D(32,(3,3),input_shape=(128,128,3),activation='relu'))\
n",
        "#add maxpooling layer\n",
        "model.add(MaxPooling2D(pool_size=(2,2)))\n",
        "#add flatten layer \n",
        "model.add(Flatten())"
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        "#add hidden layer\n",
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        "model.add(Dense(150,activation='relu'))\n",
        "#add output layer\n",
        "model.add(Dense(1,activation='sigmoid'))"
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        "model.compile(loss='binary_crossentropy',optimizer=\"adam\",metrics=[\"accur
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        "model.fit_generator(x_train,steps_per_epoch=14,epochs=10,validation_data=x
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          "Epoch 1/10\n",
          "14/14 [==============================] - 153s 11s/step - loss:
0.6812 - accuracy: 0.6399 - val_loss: 0.6765 - val_accuracy: 0.5950\n",
          "Epoch 2/10\n",
          "14/14 [==============================] - 26s 2s/step - loss: 0.6577 -
accuracy: 0.6445 - val_loss: 0.6765 - val_accuracy: 0.5950\n",
          "Epoch 3/10\n",
```

```
          "14/14 [==============================] - 25s 2s/step - loss: 0.6532 -
accuracy: 0.6445 - val_loss: 0.6820 - val_accuracy: 0.5950\n",
          "Epoch 4/10\n",
          "14/14 [==============================] - 26s 2s/step - loss: 0.6512 -
accuracy: 0.6445 - val_loss: 0.6794 - val_accuracy: 0.5950\n",
          "Epoch 5/10\n",
          "14/14 [==============================] - 25s 2s/step - loss: 0.6510 -
accuracy: 0.6445 - val_loss: 0.6793 - val_accuracy: 0.5950\n",
          "Epoch 6/10\n",
          "14/14 [==============================] - 25s 2s/step - loss: 0.6509 -
accuracy: 0.6445 - val_loss: 0.6806 - val_accuracy: 0.5950\n",
          "Epoch 7/10\n",
          "14/14 [==============================] - 26s 2s/step - loss: 0.6509 -
accuracy: 0.6445 - val_loss: 0.6807 - val_accuracy: 0.5950\n",
          "Epoch 8/10\n",
          "14/14 [==============================] - 25s 2s/step - loss: 0.6513 -
accuracy: 0.6445 - val_loss: 0.6815 - val_accuracy: 0.5950\n",
          "Epoch 9/10\n",
          "14/14 [==============================] - 25s 2s/step - loss: 0.6511 -
accuracy: 0.6445 - val_loss: 0.6797 - val_accuracy: 0.5950\n",
          "Epoch 10/10\n",
          "14/14 [==============================] - 26s 2s/step - loss: 0.6514 -
accuracy: 0.6445 - val_loss: 0.6809 - val_accuracy: 0.5950\n"
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        "from keras.models import load_model\n",
        "#import image class from keras\n",
        "from tensorflow.keras.preprocessing import image\n",
        "#import numpy\n",
        "import numpy as np\n",
        "#import cv2\n",
        "import cv2"
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        "#load the saved model\n",
        "model = load_model(\"forest1.h5\")"
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        "img=image.load_img('/content/drive/MyDrive/Dataset/Dataset/test_set/with
fire/180802_CarrFire_010_large_700x467.jpg')\n",
        "x=image.img_to_array(img)\n",
        "res = cv2.resize(x, dsize=(128, 128), interpolation=cv2.INTER_CUBIC)\n",
        "#expand the image shape\n",
        "x=np.expand_dims(res,axis=0)"
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