# PROJECT DEVOLPMENT PHASE

## SPRINT-2

| Date | 04 November 202 |
|---|---|
| Team ID | PNT2022TMID13480 |
| Project Name | Emerging methods for the early detection of forest fires |

## Execution:

```
Epoch 1/10
14/14 [==============================] - 46s 3s/step - loss: 3.7642 - accuracy: 0.5550 - val_loss: 0.9342 - val_accuracy: 0.595
0
Epoch 2/10
14/14 [==============================] - 21s 2s/step - loss: 0.4257 - accuracy: 0.8050 - val_loss: 0.1760 - val_accuracy: 0.925
6
Epoch 3/10
14/14 [==============================] - 22s 2s/step - loss: 0.2191 - accuracy: 0.9083 - val_loss: 0.1141 - val_accuracy: 0.958
7
Epoch 4/10
14/14 [==============================] - 22s 2s/step - loss: 0.2520 - accuracy: 0.8991 - val_loss: 0.1058 - val_accuracy: 0.975
2
Epoch 5/10
14/14 [==============================] - 22s 2s/step - loss: 0.2192 - accuracy: 0.9014 - val_loss: 0.1065 - val_accuracy: 0.966
9
Epoch 6/10
14/14 [==============================] - 22s 2s/step - loss: 0.1942 - accuracy: 0.9106 - val_loss: 0.0938 - val_accuracy: 0.975
2
Epoch 7/10
14/14 [==============================] - 21s 2s/step - loss: 0.1684 - accuracy: 0.9358 - val_loss: 0.1383 - val_accuracy: 0.942
1
Epoch 8/10
14/14 [==============================] - 22s 2s/step - loss: 0.1872 - accuracy: 0.9266 - val_loss: 0.1577 - val_accuracy: 0.900
8
Epoch 9/10
14/14 [==============================] - 25s 2s/step - loss: 0.1643 - accuracy: 0.9312 - val_loss: 0.0874 - val_accuracy: 0.983
5
Epoch 10/10
14/14 [==============================] - 62s 5s/step - loss: 0.1640 - accuracy: 0.9220 - val_loss: 0.0809 - val_accuracy: 0.975
2
```

```
               [[217., 226., 179.],
                [ 79.,  87.,  28.],
                [ 48.,  58.,   0.],
                ...,
                [ 16.,  72.,   0.],
                [  1.,  39.,   0.],
                [221., 223., 212.]]]], dtype=float32)
```

In [25]: `images = np.vstack([x])`

In [26]:
```
pred=model.predict(images)
pred
```

```
1/1 [==============================] - 1s 1s/step
```

Out[26]: `array([[0.]], dtype=float32)`

In [27]: `x_train.class_indices`

Out[27]: `{'forest': 0, 'with fire': 1}`

In [28]:
```
if (pred[0] > 0.5):
    print("forest with fire")
else:
    print("forest without fire")
```

```
forest without fire
```