```
import numpy as np
import pandas as pd
```

```
from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

```
dir_path = '/content/drive/MyDrive/MLinSec/Lab6/'
```

```
import tensorflow as tf
from tensorflow import keras
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn import metrics
```

Load Dataset

```
X_train = pd.read_csv(dir_path + "N_X_train.csv",header=None)
Y_train = pd.read_csv(dir_path + "N_Y_train.csv",header=None)
X_test = pd.read_csv(dir_path + "N_X_test.csv",header=None)
#Y_test = pd.read_csv(dir_path + "N_Y_test.csv",header=None)
```

```
print(X_train.shape)
print(Y_train.shape)
print(X_test.shape)
#print(Y_test.shape)
```

```
(250202, 115)
(250202, 1)
(23040, 115)
```

```
X_train.head()
```

	0	1	2	3	4	5	6	
0	5.688842	82.000000	1.270000e-09	8.147002	81.999999	8.470000e-06	16.450803	81.
1	2.054324	73.819740	2.355805e+00	2.317782	73.295223	9.140854e+00	4.684740	72.
2	7.668872	82.000000	7.280000e-12	10.287058	82.000000	3.020000e-07	22.760781	81.
3	4.138542	74.000000	1.460000e-11	4.851187	74.000000	2.510000e-06	8.148162	74.
4	2.191980	81.967791	7.075699e-01	3.022267	81.584711	8.963883e+00	11.588484	79.

5 rows × 115 columns

```
Y_train.head()
```

	0
0	0
1	0
2	0
3	0
4	0

Training Model

```
m = RandomForestClassifier()
```

```
m.fit(X_train, Y_train)
```

```
<ipython-input-21-ddad275d76aa>:1: DataConversionWarning: A column-vector y was passe
  m.fit(X_train, Y_train)
```

RandomForestClassifier

RandomForestClassifier()

```
y_pred = m.predict(X_test)
```

```
print(y_pred)
```

```
[0 0 0 ... 0 0 0]
```

Hint Flag

```
f = np.zeros((180, 128))
```

```
f
```

```
array([[0., 0., 0., ..., 0., 0., 0.],
       [0., 0., 0., ..., 0., 0., 0.],
       [0., 0., 0., ..., 0., 0., 0.],
       ...,
       [0., 0., 0., ..., 0., 0., 0.],
       [0., 0., 0., ..., 0., 0., 0.],
       [0., 0., 0., ..., 0., 0., 0.]])
```

```
from google.colab.patches import cv2_imshow
a = np.array(y_pred).reshape(23040,1)
a = a.reshape(180,128)
a[a==1] = 255
cv2_imshow(a)
```