

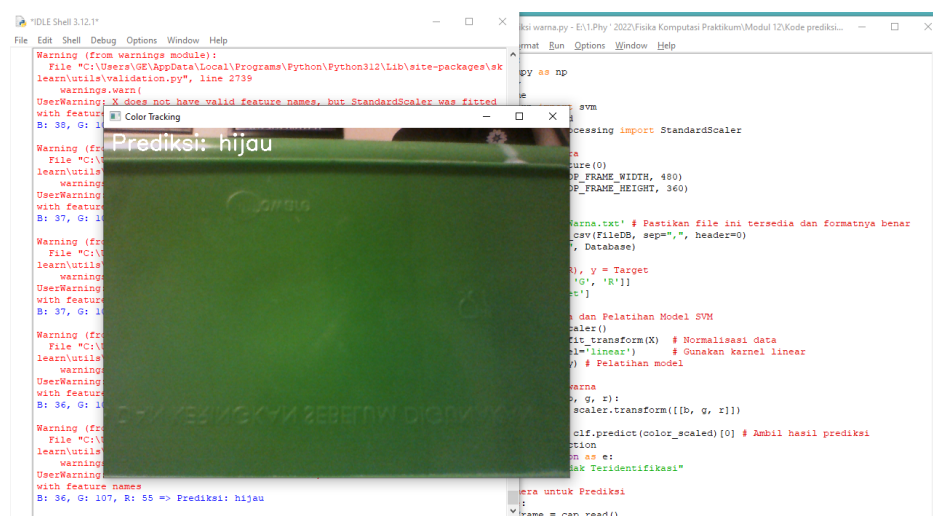
1. Buatlah database dengan target warna hijau dan hitam!

berikut adalah database warna yang dibuat hijau dan hitam.

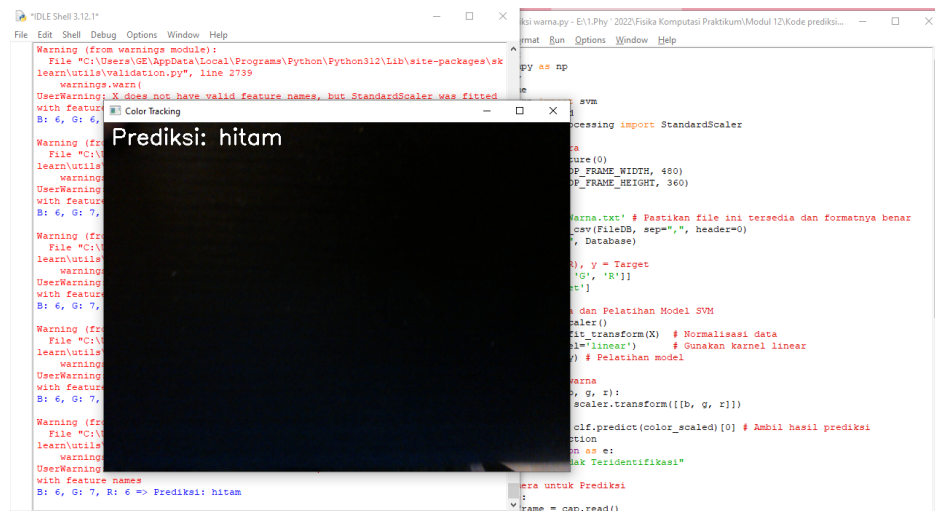
35,31,25,hitam	
32,29,26,hitam	
28,28,26,hitam	
27,28,22,hitam	
30,28,24,hitam	
34,29,22,hitam	52,78,51,hijau
32,27,28,hitam	51,68,43,hijau
29,26,26,hitam	53,110,80,hijau
30,26,27,hitam	41,99,53,hijau
45,36,30,hitam	48,81,46,hijau
46,36,32,hitam	69,91,64,hijau
47,36,31,hitam	43,68,48,hijau
44,36,31,hitam	74,97,68,hijau
37,34,31,hitam	74,97,65,hijau
34,33,29,hitam	57,78,49,hijau
33,33,28,hitam	95,128,102,hijau
34,35,29,hitam	
34,35,29,hitam	
37,33,30,hitam	
41,37,30,hitam	

2. Prediksi warna hijau dan hitam.

1. Prediksi warna Hijau



2. Prediksi warna Hitam



```
Warning (from warnings module):
  File "C:\Users\GE\AppData\Local\Programs\Python\Python312\Lib\site-packages\sk
learn\utils\_validation.py", line 2739
    warnings.warn(
UserWarning: X does not have valid feature names, but StandardScaler was fitted
with features B: 6, G: 6, R: 6

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    warnings.warn(
UserWarning: X does not have valid feature names, but StandardScaler was fitted
with features B: 6, G: 7, R: 7

Warning (from warnings module):
  File "C:\Users\GE\AppData\Local\Programs\Python\Python312\Lib\site-packages\sk
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    warnings.warn(
UserWarning: X does not have valid feature names, but StandardScaler was fitted
with features B: 6, G: 7, R: 7

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UserWarning: X does not have valid feature names, but StandardScaler was fitted
with features B: 6, G: 7, R: 6 => Prediksi: hitam
```

```
ks warna.py - E:\1.Phy\2022\Fisika Komputasi Praktikum\Modul 12\Kode prediksi...
File Edit Shell Debug Options Window Help
Run

from sklearn.preprocessing import StandardScaler
import cv2
import numpy as np

# Load the image
img = cv2.imread('hitam.jpg')

# Convert the image to grayscale
gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)

# Reshape the image to a 1D array
img_flat = gray.flatten()

# Load the training data
with open('warna.txt', 'r') as f:
    data = f.readlines()

# Parse the training data
X_train = []
y_train = []
for line in data:
    line = line.strip()
    if line:
        parts = line.split(',')
        X_train.append([float(part) for part in parts[:-1]])
        y_train.append(int(parts[-1]))

# Train the SVM model
svm = svm.SVC(kernel='linear')
svm.fit(X_train, y_train)

# Predict the color
def predict_color(img):
    gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
    img_flat = gray.flatten()
    color_scaled = StandardScaler().fit_transform([img_flat])
    prediction = svm.predict(color_scaled)[0]
    return prediction

# Test the model
img = cv2.imread('hitam.jpg')
prediction = predict_color(img)

# Print the prediction
print('Prediksi: {}'.format('hitam' if prediction == 0 else 'putih'))
```

3. Jelaskan kode program dan prosesnya hingga diperoleh hasil prediksi dengan Bahasa sendiri siingkat, padat dan jelas!