TEAM ID:PNT2022TMID09663

```
# Importing Libarries
from tensorflow.keras.models import load model
from tensorflow.keras.preprocessing import image
import numpy as np
import cv2
C:\Users\Lenovo\anaconda3\lib\site-packages\scipy\__init__.py:146: UserWarn
ing: A NumPy version >=1.16.5 and <1.23.0 is required for this version of S
ciPy (detected version 1.23.4
  warnings.warn(f"A NumPy version >={np minversion} and <{np maxversion}"</pre>
In [2]:
 # loading model
model = load model('aslpng1.h5')
In [3]:
\textbf{from} \ \texttt{skimage.transform} \ \textbf{import} \ \texttt{resize}
def detect(frame):
     img = resize(frame, (64, 64, 3))
     img = np.expand dims(img, axis = 0)
     if np.max(img) > 1:
         img = img/255.0
     prediction = model.predict(img)
    print(prediction)
    return prediction
In [4]:
frame = cv2.imread(r"C:\Users\Lenovo\Downloads\SI-GuidedProject-322096-
1664773219-main\Dataset\test set\A\16.png")
data = detect(frame)
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[[9.7412103e-01 2.7494560e-05 3.8467112e-04 8.7245627e-07 1.7382070e-02
  2.3606113e-04 6.3319956e-03 1.0962561e-05 1.5048817e-03]]
In [5]:
index = ['A','B','C','D','E','F','G','H','I']
index[np.argmax(data)]
Out[5]:
'A'
OpenCV
In [6]:
 # Importing Libraries
import cv2
import numpy as np
from tensorflow.keras.models import load model
from tensorflow.keras.preprocessing import image
In [7]:
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# Loading Model
model = load model("aslpng1.h5")
In [8]:
video = cv2.VideoCapture(0)
index = ['A','B','C','D','E','F','G','H','I']
In [10]:
while True:
   success, frame = video.read()
   cv2.imwrite('frame.jpg', frame)
   img = image.load_img('frame.jpg', target size = (64, 64))
   x = image.img_to_array(img)
   x = cv2.cvtColor(x, cv2.COLOR BGR2HSV)
   a = x.array to img(x)
   cv2.imshow("")
   x = np.expand dims(x, axis = 0)
   pred = np.argmax(model.predict(x), axis = 1)
   y = pred[0]
   copy = frame.copy()
   cv2.rectangle(copy, (320, 100), (620, 400), (255, 0, 0), 5)
   cv2.putText(frame, "The Predicted Alphabet : " + str(index[y]), (100,
100), cv2.FONT HERSHEY SIMPLEX, 1, (0, 0, 0), 4)
   cv2.imshow('frame', frame)
   if cv2.waitKey(1) & 0xFF == ord('q'):
      break
video.release()
cv2.destroyAllWindows()
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1/1 [=======] - 0s 18ms/step
1/1 [=======] - Os 9ms/step
1/1 [======] - Os 22ms/step
1/1 [======= ] - Os 11ms/step
1/1 [======= ] - 0s 7ms/step
1/1 [======] - 0s 10ms/step
1/1 [=======] - 0s 20ms/step
1/1 [=======] - 0s 8ms/step
1/1 [=======] - 0s 21ms/step
1/1 [======] - Os 7ms/step
1/1 [======] - 0s 22ms/step
1/1 [======] - 0s 21ms/step
1/1 [=======] - 0s 22ms/step
1/1 [=======] - Os 9ms/step
1/1 [=======] - Os 22ms/step
1/1 [=======] - 0s 22ms/step
1/1 [======= ] - Os 21ms/step
1/1 [======] - 0s 18ms/step
1/1 [======] - 0s 16ms/step
1/1 [======= ] - 0s 18ms/step
1/1 [=======] - 0s 16ms/step
1/1 [======] - Os 24ms/step
1/1 [======] - 0s 23ms/step
```

```
1/1 [=======] - Os 22ms/step
1/1 [=======] - 0s 22ms/step
1/1 [======] - 0s 19ms/step
1/1 [=======] - 0s 20ms/step
1/1 [=======] - Os 28ms/step
1/1 [======= ] - Os 25ms/step
1/1 [=======] - 0s 17ms/step
1/1 [======= ] - 0s 22ms/step
1/1 [=======] - Os 24ms/step
1/1 [=======] - 0s 34ms/step
1/1 [======= ] - 0s 23ms/step
1/1 [=======] - Os 25ms/step
1/1 [=======] - 0s 9ms/step
1/1 [======] - 0s 17ms/step
1/1 [======] - 0s 12ms/step
1/1 [======= ] - 0s 20ms/step
1/1 [=======] - 0s 11ms/step
1/1 [======= ] - Os 23ms/step
1/1 [=======] - Os 17ms/step
1/1 [======] - 0s 17ms/step
1/1 [======= ] - Os 21ms/step
1/1 [======= ] - Os 14ms/step
1/1 [=======] - 0s 22ms/step
1/1 [=======] - 0s 22ms/step
1/1 [======] - 0s 13ms/step
1/1 [======= ] - 0s 8ms/step
1/1 [======= ] - Os 17ms/step
1/1 [======= ] - Os 14ms/step
1/1 [=======] - 0s 28ms/step
1/1 [======= ] - Os 11ms/step
1/1 [=======] - 0s 23ms/step
1/1 [======= ] - Os 16ms/step
1/1 [======] - 0s 22ms/step
1/1 [======] - 0s 11ms/step
1/1 [=======] - 0s 17ms/step
1/1 [======] - 0s 21ms/step
1/1 [=======] - 0s 22ms/step
1/1 [======= ] - Os 17ms/step
1/1 [======= ] - Os 11ms/step
1/1 [=======] - 0s 19ms/step
1/1 [======= ] - 0s 13ms/step
1/1 [======] - 0s 22ms/step
1/1 [=======] - 0s 18ms/step
1/1 [=======] - Os 7ms/step
1/1 [======= ] - 0s 21ms/step
1/1 [=======] - 0s 10ms/step
1/1 [======= ] - Os 19ms/step
1/1 [======] - 0s 22ms/step
1/1 [======] - 0s 22ms/step
1/1 [=======] - Os 7ms/step
1/1 [=======] - 0s 22ms/step
1/1 [======] - Os 8ms/step
1/1 [======] - 0s 19ms/step
```

1/1	[======]		0.0	13ms/step
1/1	[======]	_	0s	
1/1	[======]	_	0s	
1/1	[=======]	_	0s	31ms/step
1/1	[======]	_	0s	29ms/step
1/1	[======]	_	0s	13ms/step
1/1	[======]	_	0s	11ms/step
1/1	[======]		0s	19ms/step
1/1	[=======]		0s	24ms/step
1/1	[======]		0s	24ms/step
1/1	[======]	_	0s	16ms/step
1/1	[======]	_	0s	20ms/step
1/1	[======]	_	0s	23ms/step
1/1	[======]	_	0s	18ms/step
1/1	[======]	_	0s	16ms/step
1/1	[======]	_	0s	16ms/step
1/1	[======]	_	0s	28ms/step
1/1	[=======]	_	0s	16ms/step
1/1	[======]	_	0s	10ms/step
1/1	[======]	_	0s	
1/1	[======]	_	0s	29ms/step 6ms/step
1/1	[======]	_	0s	23ms/step
1/1	[=======]	_	0s	18ms/step
1/1	[======]	_	0s	8ms/step
1/1	[======]	_	0s	22ms/step
1/1	[======]	_	0s	20ms/step
1/1	[======]	_	0s	20ms/step 22ms/step
1/1	[======]	_	0s	13ms/step
1/1	[======]	_	0s	22ms/step
1/1	[======]	_	0s	11ms/step
1/1	[======]	_	0s	22ms/step
1/1	[======]	_	0s	22ms/step
1/1	[======]	_	0s	22ms/step
1/1	[======]	_	0s	21ms/step
1/1	[=======]	_	0s	11ms/step
1/1	[=========]	_		26ms/step
1/1				32ms/step
1/1	[========]			16ms/step
1/1	[======]			29ms/step
1/1	[=========]			16ms/step
1/1	[======]			24ms/step
1/1	[==========]	_		9ms/step
1/1	[======]	_		19ms/step
1/1	[======]	_		32ms/step
1/1	[=======]	_		32ms/step
1/1	[=======]	_		23ms/step
1/1	[======]			23ms/step
1/1	[======]			16ms/step
1/1	[=======]			6ms/step
1/1	[======]			
In []:	ı. J			_ 1c, cccp
[].				

In []: