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}"
```

In [2]:

```
# loading model

model = load_model('aslpng1.h5')
```

In [3]:

```
from skimage.transform import 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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  2.3606113e-04 6.3319956e-03 1.0962561e-05 1.5048817e-03]]
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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]:

```
# 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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