In [1]:
```
import sys
sys.executable
```

Out[1]:
```
'/Users/sakshi/opt/anaconda3/bin/python'
```

In [2]:
```
%pip install pandas
%pip install numpy
%pip install matplotlib
%pip install scikit-learn
%pip install keras
%pip install opencv-python
%pip install pydot
!pip install pandas
!pip install numpy
!pip install matplotlib
!pip install tensorflow
```

```
onda3/lib/python3.9/site-packages (from pandas) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in ./opt/anaconda3/lib/
python3.9/site-packages (from pandas) (2022.1)
Requirement already satisfied: numpy>=1.18.5 in ./opt/anaconda3/li
b/python3.9/site-packages (from pandas) (1.24.4)
Requirement already satisfied: six>=1.5 in ./opt/anaconda3/lib/pyth
on3.9/site-packages (from python-dateutil>=2.8.1->pandas) (1.16.0)
Requirement already satisfied: numpy in ./opt/anaconda3/lib/python
3.9/site-packages (1.24.4)
Requirement already satisfied: matplotlib in ./opt/anaconda3/lib/py
thon3.9/site-packages (3.5.2)
Requirement already satisfied: pyparsing>=2.2.1 in ./opt/anaconda3/
lib/python3.9/site-packages (from matplotlib) (3.0.9)
Requirement already satisfied: python-dateutil>=2.7 in ./opt/anacon
da3/lib/python3.9/site-packages (from matplotlib) (2.8.2)
Requirement already satisfied: fonttools>=4.22.0 in ./opt/anaconda
3/lib/python3.9/site-packages (from matplotlib) (4.25.0)
Requirement already satisfied: pillow>=6.2.0 in ./opt/anaconda3/li
b/python3.9/site-packages (from matplotlib) (9.2.0)
Requirement already satisfied: packaging>=20.0 in ./opt/anaconda3/l
```

In [3]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import tensorflow as tf
import os
from keras.preprocessing.image import ImageDataGenerator
from sklearn.model_selection import train_test_split
from keras.utils import to_categorical
import cv2
import pydot
```

```
2024-03-30 21:41:29.975506: I tensorflow/core/platform/cpu_feature_g
uard.cc:182] This TensorFlow binary is optimized to use available CP
U instructions in performance-critical operations.
To enable the following instructions: AVX2 FMA, in other operations,
rebuild TensorFlow with the appropriate compiler flags.
```

In [4]:

```
#load_dataset function to load the data and resize the images to 50x5
def load_dataset(directory):
  images = []
  labels = []
  for idx, label in enumerate(uniq_labels):
    for file in os.listdir(directory + '/'+label):
      filepath = directory +'/'+ label + "/" + file
      img = cv2.resize(cv2.imread(filepath),(50,50))
      images.append(img)
      labels.append(idx)
  images = np.asarray(images)
  labels = np.asarray(labels)
  return images, labels
```

In [5]:

```
#display_images function to show examples
def display_images(x_data,y_data, title, display_label = True):
    x, y = x_data,y_data
    fig, axes = plt.subplots(5, 8, figsize = (18, 5))
    fig.subplots_adjust(hspace = 0.5, wspace = 0.5)
    fig.suptitle(title, fontsize = 18)
    for i, ax in enumerate(axes.flat):
        ax.imshow(cv2.cvtColor(x[i], cv2.COLOR_BGR2RGB))
        if display_label:
            ax.set_xlabel(uniq_labels[y[i]])
        ax.set_xticks([])
        ax.set_yticks([])
    plt.show()
```

In [6]:

```
from sklearn.preprocessing import LabelEncoder

def load_dataset(directory):
    images = []
    labels = []

    label_encoder = LabelEncoder()

    for label in os.listdir(directory):
        label_path = os.path.join(directory, label)

        # Check if the item is a directory
        if os.path.isdir(label_path):
            for file in os.listdir(label_path):
                filepath = os.path.join(label_path, file)

                # Load the image and check if it's valid
                img = cv2.imread(filepath)
                if img is not None:
                    img = cv2.resize(img, (50, 50))
                    images.append(img)
                    labels.append(label)

    images = np.asarray(images)
    labels = label_encoder.fit_transform(labels)

    return images, labels
```

In [7]:

```
data_dir = r'/Users/sakshi/Desktop/input/classification_frames/Images'
uniq_labels = sorted(os.listdir(data_dir))
X_pre, Y_pre = load_dataset(data_dir)

# Split the dataset into training, testing, and evaluation sets
X_train, X_test, Y_train, Y_test = train_test_split(X_pre, Y_pre, test
X_test, X_eval, Y_test, Y_eval = train_test_split(X_test, Y_test, test

# Print shapes of each set
print("Train images shape", X_train.shape, Y_train.shape)
print("Test images shape", X_test.shape, Y_test.shape)
print("Evaluate image shape", X_eval.shape, Y_eval.shape)

# Print the labels and their count
print("Printing the labels", uniq_labels, len(uniq_labels))
```

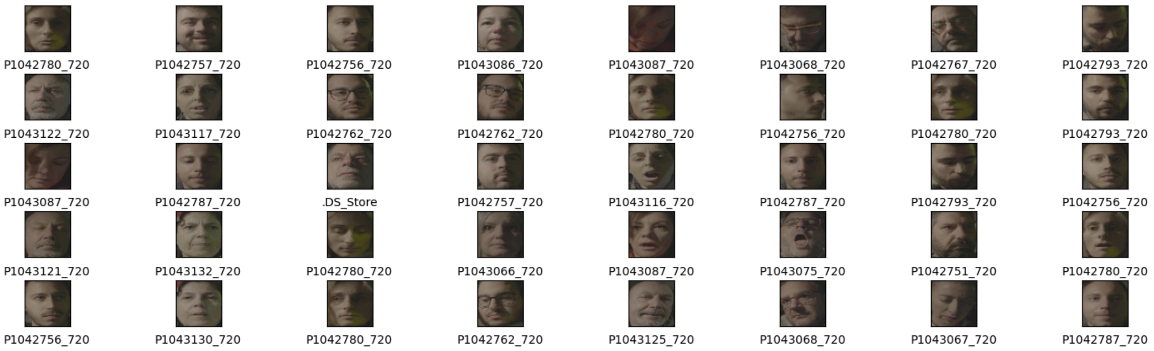
```
Train images shape (42664, 50, 50, 3) (42664,)
Test images shape (5333, 50, 50, 3) (5333,)
Evaluate image shape (5334, 50, 50, 3) (5334,)
Printing the labels ['.DS_Store', 'P1042751_720', 'P1042756_720', 'P
1042757_720', 'P1042762_720', 'P1042767_720', 'P1042772_720', 'P1042
777_720', 'P1042780_720', 'P1042787_720', 'P1042793_720', 'P1042797_
720', 'P1043066_720', 'P1043067_720', 'P1043068_720', 'P1043075_72
0', 'P1043076_720', 'P1043078_720', 'P1043079_720', 'P1043080_720',
'P1043081_720', 'P1043086_720', 'P1043087_720', 'P1043089_720', 'P10
43106_720', 'P1043115_720', 'P1043116_720', 'P1043117_720', 'P104311
8_720', 'P1043119_720', 'P1043120_720', 'P1043121_720', 'P1043122_72
0', 'P1043123_720', 'P1043124_720', 'P1043125_720', 'P1043126_720',
'P1043127_720', 'P1043128_720', 'P1043130_720', 'P1043131_720', 'P10
43132_720', 'P1043133_720', 'P1043134_720', 'P1043135_720'] 45
```

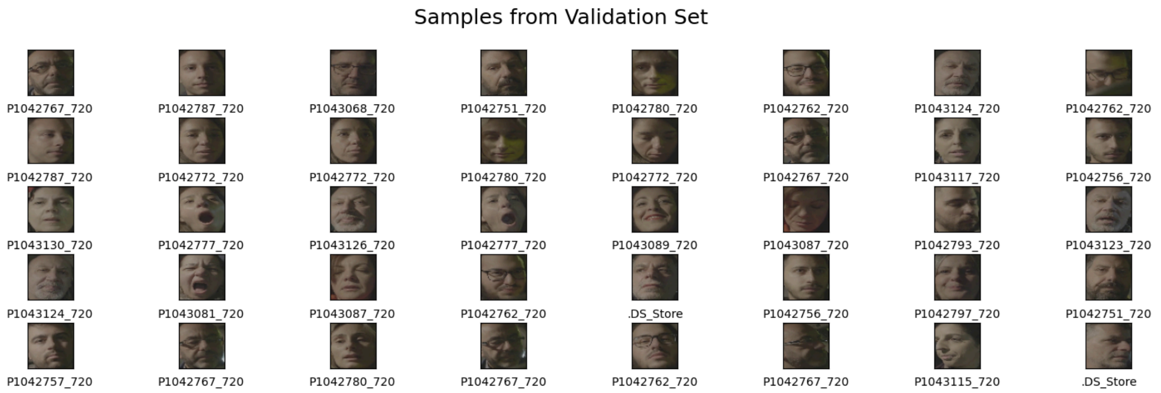
In [8]:
```
# Load the dataset
data_dir = r'/Users/sakshi/Desktop/input/classification_frames/Images'
uniq_labels = sorted(os.listdir(data_dir))
X_pre, Y_pre = load_dataset(data_dir)

# Split the dataset into training, testing, and evaluation sets
X_train, X_test, Y_train, Y_test = train_test_split(X_pre, Y_pre, test
X_test, X_eval, Y_test, Y_eval = train_test_split(X_test, Y_test, test

# Print shapes of each set
print("Train images shape", X_train.shape, Y_train.shape)
print("Test images shape", X_test.shape, Y_test.shape)
print("Evaluate image shape", X_eval.shape, Y_eval.shape)

# Printing the labels and their count
print("Printing the labels", uniq_labels, len(uniq_labels))

# Display examples
display_images(X_train, Y_train, 'Samples from Train Set')
display_images(X_test, Y_test, 'Samples from Test Set')
display_images(X_eval, Y_eval, 'Samples from Validation Set')
```

```
Train images shape (42664, 50, 50, 3) (42664,)
Test images shape (5333, 50, 50, 3) (5333,)
Evaluate image shape (5334, 50, 50, 3) (5334,)
Printing the labels ['.DS_Store', 'P1042751_720', 'P1042756_720', 'P
1042757_720', 'P1042762_720', 'P1042767_720', 'P1042772_720', 'P1042
777_720', 'P1042780_720', 'P1042787_720', 'P1042793_720', 'P1042797_
720', 'P1043066_720', 'P1043067_720', 'P1043068_720', 'P1043075_72
0', 'P1043076_720', 'P1043078_720', 'P1043079_720', 'P1043080_720',
'P1043081_720', 'P1043086_720', 'P1043087_720', 'P1043089_720', 'P10
43106_720', 'P1043115_720', 'P1043116_720', 'P1043117_720', 'P104311
8_720', 'P1043119_720', 'P1043120_720', 'P1043121_720', 'P1043122_72
0', 'P1043123_720', 'P1043124_720', 'P1043125_720', 'P1043126_720',
'P1043127_720', 'P1043128_720', 'P1043130_720', 'P1043131_720', 'P10
43132_720', 'P1043133_720', 'P1043134_720', 'P1043135_720'] 45
```

Samples from Train Set

Samples from Test Set





In [9]:

```
# Convert labels to one-hot encoding
num_classes = len(uniq_labels)
Y_train = to_categorical(Y_train, num_classes)
Y_test = to_categorical(Y_test, num_classes)
Y_eval = to_categorical(Y_eval, num_classes)

# Normalize pixel values
X_train = X_train / 255.
X_test = X_test / 255.
X_eval = X_eval / 255.
```

In [10]:

```
import tensorflow as tf
from tensorflow.keras.utils import to_categorical

# Assuming your model's output layer has 'num_classes' units
model = tf.keras.Sequential([
    tf.keras.layers.Conv2D(16, (3,3), activation='relu', input_shape=(
    tf.keras.layers.Conv2D(16, (3,3), activation='relu'),
    tf.keras.layers.Conv2D(16, (3,3), activation='relu'),
    tf.keras.layers.MaxPool2D((2,2)),
    tf.keras.layers.Conv2D(32, (3,3), activation='relu'),
    tf.keras.layers.Conv2D(32, (3,3), activation='relu'),
    tf.keras.layers.Conv2D(32, (3,3), activation='relu'),
    tf.keras.layers.MaxPool2D((2,2)),
    tf.keras.layers.Conv2D(64, (3,3), activation='relu'),
    tf.keras.layers.Conv2D(64, (3,3), activation='relu'),
    tf.keras.layers.Conv2D(64, (3,3), activation='relu'),
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(128, activation='relu'),
    tf.keras.layers.Dense(num_classes, activation='softmax')
])

# Compile the model
model.compile(optimizer='adam',
              loss='categorical_crossentropy',
              metrics=['accuracy'])

# Train the model
history = model.fit(X_train, Y_train, epochs=10, verbose=1,
                    validation_data=(X_eval, Y_eval))
```

```
Epoch 1/10
1334/1334 [==============================] - 414s 307ms/step - loss:
1.2935 - accuracy: 0.6257 - val_loss: 0.6023 - val_accuracy: 0.7998
Epoch 2/10
1334/1334 [==============================] - 383s 287ms/step - loss:
0.4117 - accuracy: 0.8577 - val_loss: 0.3462 - val_accuracy: 0.8798
Epoch 3/10
1334/1334 [==============================] - 359s 269ms/step - loss:
0.2994 - accuracy: 0.8949 - val_loss: 0.2210 - val_accuracy: 0.9233
Epoch 4/10
1334/1334 [==============================] - 352s 264ms/step - loss:
0.2359 - accuracy: 0.9170 - val_loss: 0.1973 - val_accuracy: 0.9319
Epoch 5/10
1334/1334 [==============================] - 9218s 7s/step - loss:
0.1967 - accuracy: 0.9300 - val_loss: 0.2475 - val_accuracy: 0.9113
Epoch 6/10
1334/1334 [==============================] - 276s 207ms/step - loss:
0.1711 - accuracy: 0.9380 - val_loss: 0.1394 - val_accuracy: 0.9537
Epoch 7/10
1334/1334 [==============================] - 312s 234ms/step - loss:
0.1421 - accuracy: 0.9504 - val_loss: 0.1568 - val_accuracy: 0.9464
Epoch 8/10
1334/1334 [==============================] - 305s 228ms/step - loss:
0.1345 - accuracy: 0.9536 - val_loss: 0.1349 - val_accuracy: 0.9565
Epoch 9/10
1334/1334 [==============================] - 322s 242ms/step - loss:
0.1161 - accuracy: 0.9602 - val_loss: 0.1107 - val_accuracy: 0.9666
Epoch 10/10
1334/1334 [==============================] - 332s 248ms/step - loss:
0.1037 - accuracy: 0.9637 - val_loss: 0.0877 - val_accuracy: 0.9723
```

In [11]:
```
model.summary()
```

```
Model: "sequential"
_________________________________________________________________
 Layer (type)                Output Shape              Param #   
=================================================================
 conv2d (Conv2D)             (None, 48, 48, 16)        448       
                                                                 
 conv2d_1 (Conv2D)           (None, 46, 46, 16)        2320      
                                                                 
 conv2d_2 (Conv2D)           (None, 44, 44, 16)        2320      
                                                                 
 max_pooling2d (MaxPooling2  (None, 22, 22, 16)        0         
 D)                                                              
                                                                 
 conv2d_3 (Conv2D)           (None, 20, 20, 32)        4640      
                                                                 
 conv2d_4 (Conv2D)           (None, 18, 18, 32)        9248      
                                                                 
 conv2d_5 (Conv2D)           (None, 16, 16, 32)        9248      
                                                                 
 max_pooling2d_1 (MaxPoolin  (None, 8, 8, 32)          0         
```

In [12]:
```
#testing
model.evaluate(X_test, Y_test)
```

```
167/167 [==============================] - 7s 42ms/step - loss: 0.08
72 - accuracy: 0.9689
```

Out[12]:
```
[0.0872001200914383, 0.9688730835914612]
```

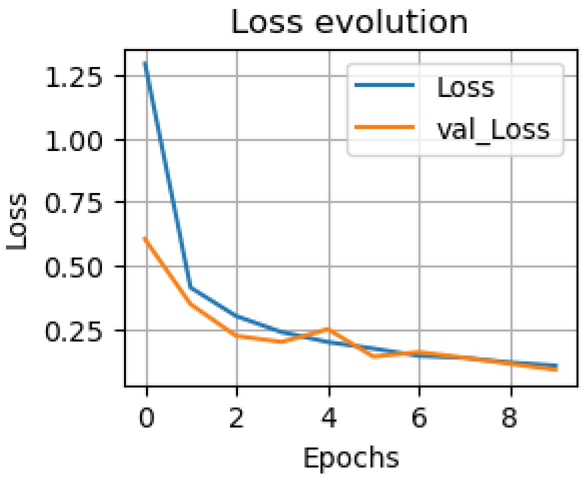
In [13]:
```
from tensorflow.keras.models import load_model

# Assuming you have already imported and built your model with Keras
# model = ... (your model definition here)

# Save the model
model.save('/Users/sakshi/Desktop/input/TestModel.h5')

# Load the model
loaded_model = load_model('/Users/sakshi/Desktop/input/TestModel.h5')
```

```
/Users/sakshi/opt/anaconda3/lib/python3.9/site-packages/keras/src/en
gine/training.py:3103: UserWarning: You are saving your model as an
HDF5 file via `model.save()`. This file format is considered legacy.
We recommend using instead the native Keras format, e.g. `model.save
('my_model.keras')`.
  saving_api.save_model(
```

In [14]:
```
train_loss = history.history['loss']
train_acc = history.history['accuracy']
val_loss = history.history['val_loss']
val_accuracy = history.history['val_accuracy']
```

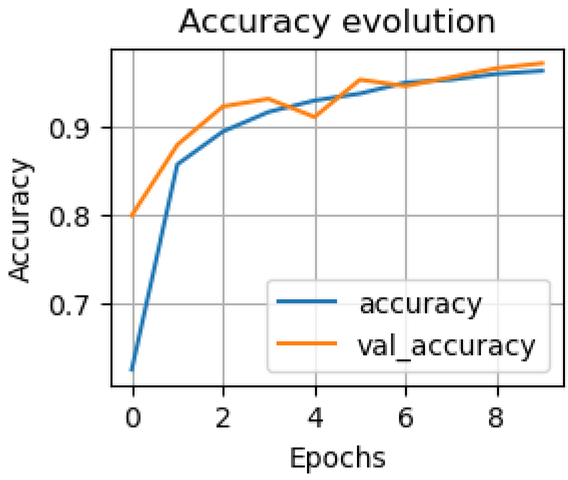
In [15]:

```
#ploting training and validation loss vs. epochs
plt.subplot(2, 2, 1)
plt.plot(history.history['loss'], label='Loss')
plt.plot(history.history['val_loss'], label='val_Loss')
plt.legend()
plt.grid()
plt.title('Loss evolution')
plt.xlabel('Epochs')
plt.ylabel('Loss')
plt.savefig('/Users/sakshi/Desktop/loss_plot.png')
plt.show()
```



In [16]:

```
#ploting training and validation accuracy vs. epochs
plt.subplot(2, 2, 2)
plt.plot(history.history['accuracy'], label='accuracy')
plt.plot(history.history['val_accuracy'], label='val_accuracy')
plt.legend()
plt.grid()
plt.title('Accuracy evolution')
plt.xlabel('Epochs')
plt.ylabel('Accuracy')
plt.savefig('/Users/sakshi/Desktop/acc_plot.png')
plt.show()
```



In [17]:

```
import numpy as np

combined_loss = history.history['loss'] + history.history['val_loss']
overall_loss = np.mean(combined_loss)

combined_accuracy = history.history['accuracy'] + history.history['va
overall_accuracy = np.mean(combined_accuracy)

print(f"Loss: {overall_loss:.4f}")
print(f"Accuracy: {overall_accuracy:.4f}")
```

```
Loss: 0.2674
Accuracy: 0.9116
```

In [23]:

```
import cv2
import numpy as np
import tensorflow as tf
from keras.preprocessing.image import ImageDataGenerator
import os
import pyttsx3
```

In [24]:

```
import os

model_path = '/Users/sakshi/Desktop/input/TestModel.h5'
full_path = os.path.abspath(model_path)

model = tf.keras.models.load_model(full_path)
```

In [25]:
```
# engine = pyttsx3.init()
# load saved model from PC
model = tf.keras.models.load_model(
    r'/Users/sakshi/Desktop/input/TestModel.h5')
model.summary()
```

```
Model: "sequential"
_________________________________________________________________
 Layer (type)                Output Shape              Param #   
=================================================================
 conv2d (Conv2D)             (None, 48, 48, 16)        448       
                                                                 
 conv2d_1 (Conv2D)           (None, 46, 46, 16)        2320      
                                                                 
 conv2d_2 (Conv2D)           (None, 44, 44, 16)        2320      
                                                                 
 max_pooling2d (MaxPooling2  (None, 22, 22, 16)        0         
 D)                                                              
                                                                 
 conv2d_3 (Conv2D)           (None, 20, 20, 32)        4640      
                                                                 
 conv2d_4 (Conv2D)           (None, 18, 18, 32)        9248      
                                                                 
 conv2d_5 (Conv2D)           (None, 16, 16, 32)        9248      
                                                                 
 max_pooling2d_1 (MaxPoolin  (None, 8, 8, 32)          0         
 g2D)                                                            
                                                                 
 conv2d_6 (Conv2D)           (None, 6, 6, 64)          18496     
                                                                 
 conv2d_7 (Conv2D)           (None, 4, 4, 64)          36928     
                                                                 
 conv2d_8 (Conv2D)           (None, 2, 2, 64)          36928     
                                                                 
 flatten (Flatten)           (None, 256)               0         
                                                                 
 dense (Dense)               (None, 128)               32896     
                                                                 
 dense_1 (Dense)             (None, 45)                5805      
                                                                 
=================================================================
Total params: 159277 (622.18 KB)
Trainable params: 159277 (622.18 KB)
Non-trainable params: 0 (0.00 Byte)
_________________________________________________________________
```

In [26]:
```
train_dir = r'/Users/sakshi/Desktop/input/archive'
# getting the labels form data directory
labels = sorted(os.listdir(train_dir))
labels[-1] = 'Nothing'
print(labels)
```

```
['.DS_Store', 'coco_annotations', 'data.yaml', 'test', 'train', 'Not
hing']
```

In [27]:

```
! pip install pyttsx3
import cv2
import numpy as np
import tensorflow as tf
import pyttsx3

# Load saved model from PC
model = tf.keras.models.load_model(r'/Users/sakshi/Desktop/input/TestM
model.summary()

# Load Haar Cascade for face detection
face_cascade = cv2.CascadeClassifier(cv2.data.haarcascades + 'haarcasc
```

```
Requirement already satisfied: pyttsx3 in ./opt/anaconda3/lib/pytho
n3.9/site-packages (2.90)
Requirement already satisfied: pyobjc>=2.4 in ./opt/anaconda3/lib/p
ython3.9/site-packages (from pyttsx3) (10.1)
Requirement already satisfied: pyobjc-framework-ExceptionHandling==
10.1 in ./opt/anaconda3/lib/python3.9/site-packages (from pyobjc>=
2.4->pyttsx3) (10.1)
Requirement already satisfied: pyobjc-framework-UserNotificationsUI
==10.1 in ./opt/anaconda3/lib/python3.9/site-packages (from pyobjc>
=2.4->pyttsx3) (10.1)
Requirement already satisfied: pyobjc-framework-SecurityFoundation=
=10.1 in ./opt/anaconda3/lib/python3.9/site-packages (from pyobjc>=
2.4->pyttsx3) (10.1)
Requirement already satisfied: pyobjc-framework-ReplayKit==10.1 in
./opt/anaconda3/lib/python3.9/site-packages (from pyobjc>=2.4->pytt
sx3) (10.1)
Requirement already satisfied: pyobjc-framework-LaunchServices==10.
1 in ./opt/anaconda3/lib/python3.9/site-packages (from pyobjc>=2.4-
>pyttsx3) (10.1)
Requirement already satisfied: pyobjc-framework-CoreAudio==10.1 in
```

In [28]:

```
!pip install imutils
```

```
Requirement already satisfied: imutils in ./opt/anaconda3/lib/python
3.9/site-packages (0.5.4)
```

In [ ]:

```
import cv2
import numpy as np
import dlib
import imutils
from scipy.spatial import distance as dist
from imutils.video import VideoStream
from imutils import face_utils
from threading import Thread
import time
import playsound
import os

def sound_alarm(path):
    global alarm_status
    global alarm_status2
    global saying

    while alarm_status:
        print('Closed Eyes Detected')
        playsound.playsound(path)
    if alarm_status2:
        print('Yawn Detected')
        saying = True
        playsound.playsound(path)
        saying = False

def eye_aspect_ratio(eye):
    A = dist.euclidean(eye[1], eye[5])
    B = dist.euclidean(eye[2], eye[4])

    C = dist.euclidean(eye[0], eye[3])

    ear = (A + B) / (2.0 * C)

    return ear

def final_ear(shape):
    (lStart, lEnd) = face_utils.FACIAL_LANDMARKS_IDXS["left_eye"]
    (rStart, rEnd) = face_utils.FACIAL_LANDMARKS_IDXS["right_eye"]

    leftEye = shape[lStart:lEnd]
    rightEye = shape[rStart:rEnd]

    leftEAR = eye_aspect_ratio(leftEye)
    rightEAR = eye_aspect_ratio(rightEye)

    ear = (leftEAR + rightEAR) / 2.0
    return (ear, leftEye, rightEye)

def lip_distance(shape):
    top_lip = shape[50:53]
    top_lip = np.concatenate((top_lip, shape[61:64]))

    low_lip = shape[56:59]
    low_lip = np.concatenate((low_lip, shape[65:68]))

    top_mean = np.mean(top_lip, axis=0)
    low_mean = np.mean(low_lip, axis=0)

    distance = abs(top_mean[1] - low_mean[1])
    return distance
```

```
EYE_AR_THRESH = 0.25
EYE_AR_CONSEC_FRAMES = 20
YAWN_THRESH = 20
alarm_status = False
alarm_status2 = False
saying = False
COUNTER = 0

print("-> Loading the predictor and detector...")
detector = cv2.CascadeClassifier(cv2.data.haarcascades + "haarcascade_
#detector = dlib.get_frontal_face_detector()
predictor = dlib.shape_predictor("/Users/sakshi/Downloads/shape_predic

print("-> Starting Video Stream")
vs = VideoStream(src=0).start()
time.sleep(1.0)

while True:
    frame = vs.read()
    frame = imutils.resize(frame, width=450)
    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)

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

    # Detect faces in the frame
    faces = detector.detectMultiScale(gray, scaleFactor=1.1,
                                      minNeighbors=5, minSize=(30, 30)

    for (x, y, w, h) in faces:
        cv2.rectangle(frame, (x, y), (x+w, y+h), (255, 0, 0), 2)

        rect = dlib.rectangle(int(x), int(y), int(x + w), int(y + h))

        shape = predictor(gray, rect)
        shape = face_utils.shape_to_np(shape)

        eye = final_ear(shape)
        ear = eye[0]
        leftEye = eye[1]
        rightEye = eye[2]

        distance = lip_distance(shape)

        leftEyeHull = cv2.convexHull(leftEye)
        rightEyeHull = cv2.convexHull(rightEye)
        cv2.drawContours(frame, [leftEyeHull], -1, (0, 255, 0), 1)
        cv2.drawContours(frame, [rightEyeHull], -1, (0, 255, 0), 1)

        lip = shape[48:60]
        cv2.drawContours(frame, [lip], -1, (0, 255, 0), 1)

        if ear < EYE_AR_THRESH:
            COUNTER += 1

            if COUNTER >= EYE_AR_CONSEC_FRAMES:
                if alarm_status == False:
                    alarm_status = True
                    t = Thread(target=sound_alarm,
                               args=('/Users/sakshi/Downloads/loud-bee
                    t.daemon = True
                    t.start()

                cv2.putText(frame, "Closed Eyes ALERT!", (10, 30),
                            cv2.FONT_HERSHEY_SIMPLEX, 0.7, (0, 0, 255

        else:
            COUNTER = 0
            alarm_status = False

        if distance > YAWN_THRESH:
            cv2.putText(frame, "Yawn Alert", (10, 30),
                        cv2.FONT_HERSHEY_SIMPLEX, 0.7, (0, 0, 255), 2
            if alarm_status2 == False and saying == False:
                alarm_status2 = True
                t = Thread(target=sound_alarm,
                           args=('/Users/sakshi/Downloads/loud-beepy-a
                t.daemon = True
                t.start()
        else:
            alarm_status2 = False

        cv2.putText(frame, "EAR: {:.2f}".format(ear), (300, 30),
                    cv2.FONT_HERSHEY_SIMPLEX, 0.7, (0, 0, 255), 2)
        cv2.putText(frame, "YAWN: {:.2f}".format(distance), (300, 60),
                    cv2.FONT_HERSHEY_SIMPLEX, 0.7, (0, 0, 255), 2)

    cv2.imshow("Frame", frame)
    key = cv2.waitKey(1) & 0xFF

    if key == ord("q"):
        break

cv2.destroyAllWindows()
vs.stop()
```

```
-> Loading the predictor and detector...
-> Starting Video Stream
Yawn Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
Yawn Detected
Yawn Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
Yawn Detected
Yawn Detected
Closed Eyes Detected
Closed Eyes Detected
Yawn Detected
Yawn Detected
Yawn Detected
Closed Eyes Detected
Closed Eyes Detected
Yawn Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
Closed Eyes Detected
```