In [21]:
```
!pip install opencv-python-headless ipython
```

```
Requirement already satisfied: opencv-python-headless in c:\users\hp\.anacond
a\python\envs\notebook\lib\site-packages (4.9.0.80)
Requirement already satisfied: ipython in c:\users\hp\.anaconda\python\envs\n
otebook\lib\site-packages (8.20.0)
Requirement already satisfied: numpy>=1.21.2 in c:\users\hp\.anaconda\python
\envs\notebook\lib\site-packages (from opencv-python-headless) (1.26.4)
Requirement already satisfied: decorator in c:\users\hp\.anaconda\python\envs
\notebook\lib\site-packages (from ipython) (5.1.1)
Requirement already satisfied: jedi>=0.16 in c:\users\hp\.anaconda\python\env
s\notebook\lib\site-packages (from ipython) (0.18.1)
Requirement already satisfied: matplotlib-inline in c:\users\hp\.anaconda\pyt
hon\envs\notebook\lib\site-packages (from ipython) (0.1.6)
Requirement already satisfied: prompt-toolkit<3.1.0,>=3.0.41 in c:\users\hp\.
anaconda\python\envs\notebook\lib\site-packages (from ipython) (3.0.43)
Requirement already satisfied: pygments>=2.4.0 in c:\users\hp\.anaconda\pytho
n\envs\notebook\lib\site-packages (from ipython) (2.15.1)
Requirement already satisfied: stack-data in c:\users\hp\.anaconda\python\env
s\notebook\lib\site-packages (from ipython) (0.2.0)
Requirement already satisfied: traitlets>=5 in c:\users\hp\.anaconda\python\e
nvs\notebook\lib\site-packages (from ipython) (5.7.1)
Requirement already satisfied: exceptiongroup in c:\users\hp\.anaconda\python
\envs\notebook\lib\site-packages (from ipython) (1.2.0)
Requirement already satisfied: colorama in c:\users\hp\.anaconda\python\envs
\notebook\lib\site-packages (from ipython) (0.4.6)
Requirement already satisfied: parso<0.9.0,>=0.8.0 in c:\users\hp\.anaconda\p
ython\envs\notebook\lib\site-packages (from jedi>=0.16->ipython) (0.8.3)
Requirement already satisfied: wcwidth in c:\users\hp\.anaconda\python\envs\n
otebook\lib\site-packages (from prompt-toolkit<3.1.0,>=3.0.41->ipython) (0.2.
5)
Requirement already satisfied: executing in c:\users\hp\.anaconda\python\envs
\notebook\lib\site-packages (from stack-data->ipython) (0.8.3)
Requirement already satisfied: asttokens in c:\users\hp\.anaconda\python\envs
\notebook\lib\site-packages (from stack-data->ipython) (2.0.5)
Requirement already satisfied: pure-eval in c:\users\hp\.anaconda\python\envs
\notebook\lib\site-packages (from stack-data->ipython) (0.2.2)
Requirement already satisfied: six in c:\users\hp\.anaconda\python\envs\noteb
ook\lib\site-packages (from asttokens->stack-data->ipython) (1.16.0)
```

In [22]:
```
import cv2
```

In [23]:
```
from IPython.display import display, Image
```

In [24]:
```
from IPython.display import clear_output
```

In [25]:
```
# Load the pre-trained face detection model (Haar cascade classifier)
face_cascade = cv2.CascadeClassifier(cv2.data.haarcascades + 'haarcascade_front

# Initialize the webcam
cap = cv2.VideoCapture(0)

# Check if the webcam is opened correctly
if not cap.isOpened():
    print("Error: Could not open webcam.")
else:
    print("Webcam opened successfully.")

# Capture video frames in a loop
try:
    while True:
        # Read a frame from the webcam
        ret, frame = cap.read()

        if not ret:
            print("Failed to grab frame")
            break

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

        # Detect faces using the Haar cascade classifier
        faces = face_cascade.detectMultiScale(gray, scaleFactor=1.1, minNeighbo

        # Draw rectangles around the detected faces and display "Face" as the c
        for (x, y, w, h) in faces:
            cv2.rectangle(frame, (x, y), (x+w, y+h), (255, 0, 0), 2)
            cv2.putText(frame, "Face", (x, y - 5), cv2.FONT_HERSHEY_SIMPLEX, 0

        # Display the resulting frame with detected faces
        _, encoded_img = cv2.imencode('.jpeg', frame)
        display(Image(data=encoded_img.tobytes()))
        clear_output(wait=True)

except KeyboardInterrupt:
    # Gracefully exit on interrupt
    print("Interrupted by user")

# Release the webcam
cap.release()
```

...

In [ ]:

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