Title - Face Mask Detection

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TOPIC

Progress Report -II

PROJECT PROGRESS

In [1]:
```
import cv2
```

In [2]:
```
img = cv2.imread('E:\img_1.png')
```

In [3]:
```
img.shape
```

Out[3]:
```
(675, 1200, 3)
```

In [4]:
```
img[0]
```

Out[4]:
```
array([[157, 141, 129],
       [157, 141, 129],
       [158, 142, 130],
       ...,
       [125, 132, 129],
       [125, 132, 129],
       [124, 131, 128]], dtype=uint8)
```

In [5]:
```
import matplotlib.pyplot as plt
```

In [6]:
```
plt.imshow(img)
```

Out[6]:
```
<matplotlib.image.AxesImage at 0x2c03b1514c0>
```

In [7]:
```
while True:
    cv2.imshow('result' ,img)
    if cv2.waitKey(2) == 27:
    #27 is the ASCII of Escape
        break
cv2.destroyAllWindows()
```

In [8]:
```
haar_data = cv2.CascadeClassifier('C:\Anaconda\Lib\site-packages\cv2\data\haarcascade_frontalface_default.xml')
```

In [9]:
```
haar_data.detectMultiScale(img)
```

Out[9]:
```
array([[ 198,   89,  264,  264],
       [ 714,   26,  463,  463],
       [ 768,  115,  250,  250],
       [1071,  584,   56,   56]])
```

In [10]:
```
# cv2.rectangle(img, (x,y), (w, h), (b,g,r), border_thickness)
```

In [11]:
```
while True:
    faces = haar_data.detectMultiScale(img)
    for x,y,w,h in faces:
        cv2.rectangle(img, (x,y),(x+w, y+h), (255,0,255), 4)
    cv2.imshow('result' ,img)
    if cv2.waitKey(2) == 27:
    #27 is the ASCII of Escape
        break
cv2.destroyAllWindows()
```

In [23]:
```
capture = cv2.VideoCapture(0)
data = []
while True:
    flag, img = capture.read()
    if flag:
        faces = haar_data.detectMultiScale(img)
        for x,y,w,h in faces:
            cv2.rectangle(img, (x,y), (x+w, y+h), (255,0,255), 4)
            face=img[y:y+h,x:x+w,:]
            face=cv2.resize(face,((50,50)))
            print(len(data))
            if len(data)<400:
                data.append(face)
        cv2.imshow('result', img)
        #27 - ASCII of Escape
        if cv2.waitKey(2) == 27 or len(data)>=200:
            break
capture.release()
cv2.destroyAllWindows ()
```

```
0
1
2
3
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```

```
173
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```

In [13]:
```
import numpy as np
```

In [14]:
```
x = np.array([3,2,54,6])
```

In [15]:
```
x
```

Out[15]:
```
array([ 3,  2, 54,  6])
```

In [16]:
```
x[0:2]
```

Out[16]:
```
array([3, 2])
```

In [17]:
```
x = np.array([[3,4,54,67,8,8],[1,2,2,4,5,7],[4,5,3,5,6,7],[1,2,3,34,6,8]])
```

In [18]:
```
x
```

Out[18]:
```
array([[ 3,  4, 54, 67,  8,  8],
       [ 1,  2,  2,  4,  5,  7],
       [ 4,  5,  3,  5,  6,  7],
       [ 1,  2,  3, 34,  6,  8]])
```

In [19]:
```
x[0][1:4]
```

Out[19]:
```
array([ 4, 54, 67])
```

In [20]:
```
x[0:3,0:3]
```

Out[20]:
```
array([[ 3,  4, 54],
       [ 1,  2,  2],
       [ 4,  5,  3]])
```

In [21]:
```
x[:,1:4]
```

Out[21]:
```
array([[ 4, 54, 67],
       [ 2,  2,  4],
       [ 5,  3,  5],
       [ 2,  3, 34]])
```

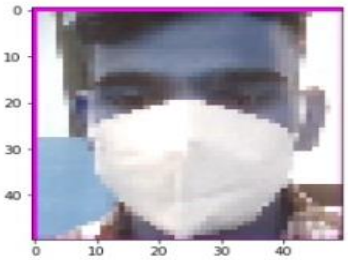
In [ ]:
```

```

In [22]:
```
np.save('without_mask.npy',data)
```

In [24]:
```
np.save('with_mask.npy',data)
```

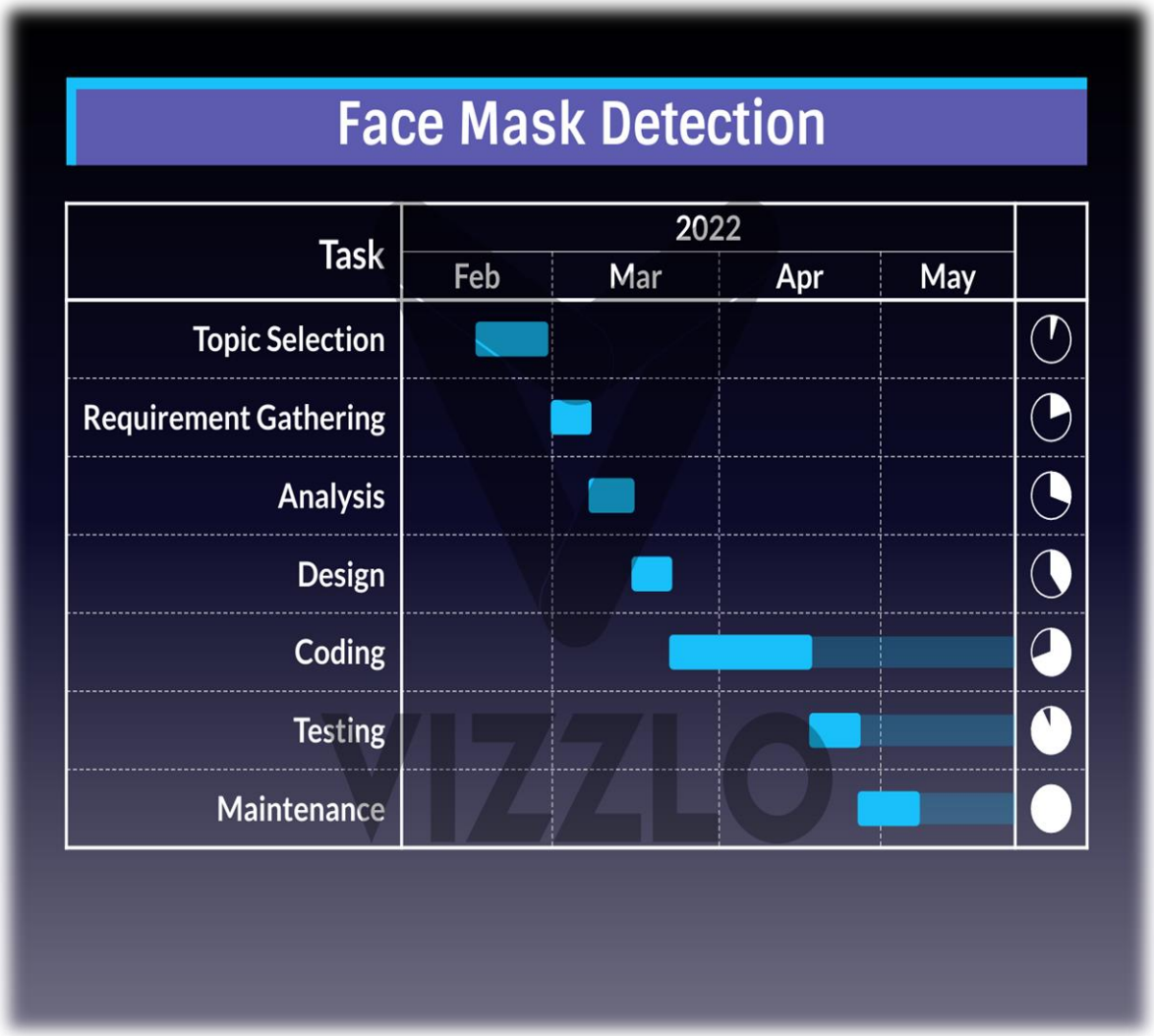
In [25]:
```
plt.imshow(data[0])
```

Out[25]:
```
<matplotlib.image.AxesImage at 0x2c04b8bb7f0>
```



In [ ]:
```

```

PROJECT PLAN


Face Mask Detection
Task
2022
Feb
Mar
Apr
May
Topic Selection
Requirement Gathering
Analysis
Design
Coding
Testing
Maintenance