

Color_Detection_Using_Python_OpenCV

In [3]:

```
import cv2
import pandas as pd
```

In [4]:

```
img_path = r'D:\Softwares\21\Anuj\D_S\Projects\Code1 Clause\Color Detection\colorpic.jpg'
img = cv2.imread(img_path)
```

Declaring global variables (are used later on)

In [5]:

```
clicked = False
r = g = b = x_pos = y_pos = 0
```

Reading csv file with pandas and giving names to each column

In [6]:

```
index = ["color", "color_name", "hex", "R", "G", "B"]
csv = pd.read_csv('colors.csv', names=index, header=None)
```

In [7]:

```
csv.head()
```

Out[7]:

	color	color_name	hex	R	G	B
0	air_force_blue_raf	Air Force Blue (Raf)	#5d8aa8	93	138	168
1	air_force_blue_usaf	Air Force Blue (Usaf)	#00308f	0	48	143
2	air_superiority_blue	Air Superiority Blue	#72a0c1	114	160	193
3	alabama_crimson	Alabama Crimson	#a32638	163	38	56
4	alice_blue	Alice Blue	#f0f8ff	240	248	255

Function to calculate minimum distance from all colors and get the most matching color

In [7]:

```
def get_color_name(R, G, B):
    minimum = 10000
    for i in range(len(csv)):
        d = abs(R - int(csv.loc[i, "R"])) + abs(G - int(csv.loc[i, "G"])) + abs(B - int(c
        if d <= minimum:
            minimum = d
            cname = csv.loc[i, "color_name"]
    return cname
```

Function to get x,y coordinates of mouse double click

In [9]:

```
def draw_function(event, x, y, flags, param):
    global b, g, r, x_pos, y_pos, clicked
    if event == cv2.EVENT_LBUTTONDBLCLK:
        clicked = True
        x_pos = x
        y_pos = y
        b, g, r = img[y, x]
        b = int(b)
        g = int(g)
        r = int(r)
```

```
cv2.namedWindow('image')
cv2.setMouseCallback('image', draw_function)
```

In [10]:

```
while True:
    cv2.imshow("image", img)

    if clicked:
        cv2.rectangle(img, (20, 20), (750, 60), (b, g, r), -1)
        text = get_color_name(r, g, b) + ' R = ' + str(r) + ' G = ' + str(g) + ' B = ' +
        cv2.putText(img, text, (50, 50), cv2.FONT_HERSHEY_SIMPLEX, 0.8, (255, 255, 255),
        if r + g + b >= 600:
            cv2.putText(img, text, (50, 50), cv2.FONT_HERSHEY_SIMPLEX, 0.8, (0, 0, 0), 2,
            clicked = False

    key = cv2.waitKey(1)
    if key == 27: # Press 'esc' to exit
        break

cv2.destroyAllWindows()
```

In []: