

Color Detection from Images

```
# Color Detection from Image - Google Colab Version
```

```
# Install required libraries  
!pip install opencv-python pandas
```

```
# Import libraries  
import cv2
```

```
import pandas as pd  
import numpy as np  
from google.colab.patches import cv2_imshow  
from google.colab import files
```

```
# Upload an image  
uploaded = files.upload()  
image_path = list(uploaded.keys())[0]
```

```
# Read image using OpenCV  
img = cv2.imread(image_path)  
img = cv2.resize(img, (800, 600)) # Resize for display  
cv2_imshow(img)
```

```
# Load color dataset  
url = 'https://raw.githubusercontent.com/codebrainz/color-names/master/output/colors.csv'  
colors = pd.read_csv(url)
```

```
# Function to calculate closest color name  
def get_color_name(R, G, B):  
    minimum = float('inf')  
    cname = "Unknown"  
    for i in range(len(colors)):  
        d = abs(R - int(colors.loc[i, "R"])) + abs(G - int(colors.loc[i, "G"])) + abs(B -  
int(colors.loc[i, "B"]))  
        if d < minimum:  
            minimum = d  
            cname = colors.loc[i, "Name"]  
    return cname
```

```
# Define mouse click event  
clicked = False  
r = g = b = xpos = ypos = 0
```

```

def draw_function(event, x, y, flags, param):
    global b, g, r, xpos, ypos, clicked

    if event == cv2.EVENT_LBUTTONDOWN:
        clicked = True
        xpos = x
        ypos = y
        b, g, r = img[y, x]
        b = int(b)
        g = int(g)

        r = int(r)

cv2.namedWindow('Image')
cv2.setMouseCallback('Image', draw_function)

while True:
    cv2.imshow("Image", img)
    if clicked:
        # Display color info
        color_name = get_color_name(r, g, b)
        cv2.rectangle(img, (20, 20), (750, 60), (b, g, r), -1)
        text = f'{color_name} R={r} G={g} B={b}'
        cv2.putText(img, text, (50, 50), 2, 0.8, (255 - b, 255 - g, 255 - r), 2,
cv2.LINE_AA)
        clicked = False
    if cv2.waitKey(20) & 0xFF == 27: # ESC key to exit
        break

cv2.destroyAllWindows()

```