Insert code cell below (Ctrl+M B)

```
[ ] !pip install opencv-python pandas
```

```
Requirement already satisfied: opencv-python in /usr/local/lib/python3.11/dist-packages (4.11.0.86)
Requirement already satisfied: pandas in /usr/local/lib/python3.11/dist-packages (2.2.2)
Requirement already satisfied: numpy>=1.21.2 in /usr/local/lib/python3.11/dist-packages (from opencv-python) (2.0.2)
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.11/dist-packages (from pandas) (2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.11/dist-packages (from pandas) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.11/dist-packages (from pandas) (2025.2)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-packages (from python-dateutil>=2.8.2->pandas) (1.17.0)
```

```
[ ] # Import libraries
    import cv2
    import pandas as pd
    import numpy as np
    from google.colab.patches import cv2_imshow
    from google.colab import files
```

```python
# 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)
```

Browse... No files selected. Cancel upload

Browse... suzume_by_vilex45_dfh01vy.jpg

suzume_by_vilex45_dfh01vy.jpg(image/jpeg) - 6116100 bytes, last modified: n/a - 100% done

Saving suzume_by_vilex45_dfh01vy.jpg to suzume_by_vilex45_dfh01vy (2).jpg

```
# 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
```

```python
# Click event handler
def onclick(event):
    if event.xdata is not None and event.ydata is not None:
        x = int(event.xdata)
        y = int(event.ydata)
        R, G, B = img[y, x]
        cname = get_color_name(R, G, B)
        print(f"Clicked at ({x}, {y}) -> RGB: ({R}, {G}, {B}) | Closest Color Name: {cname}")

        # Show color bar
        fig, ax = plt.subplots(figsize=(10, 2))
        ax.set_facecolor((R/255, G/255, B/255))
        ax.text(10, 0.5, f"{cname}  R={R} G={G} B={B}", fontsize=14, color='white', va='center')
        ax.axis('off')
        plt.show()

print("Click on the image to detect a color...")

# Display the image and attach click event
fig, ax = plt.subplots()
cid = fig.canvas.mpl_connect('button_press_event', onclick)
plt.imshow(img)
plt.axis('off')
plt.show()
```

```
Requirement already satisfied: pandas in /usr/local/lib/python3.11/dist-packages (2.2.2)
Requirement already satisfied: opencv-python-headless in /usr/local/lib/python3.11/dist-packages (4.11.0.86)
Requirement already satisfied: numpy>=1.23.2 in /usr/local/lib/python3.11/dist-packages (from pandas) (2.0.2)
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.11/dist-packages (from pandas) (2.9.0.post0)
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Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-packages (from python-dateutil>=2.8.2->pandas) (1.17.0)
Browse... suzume_by_vilex45_dfh01vy.jpg
suzume_by_vilex45_dfh01vy.jpg(image/jpeg) - 6116100 bytes, last modified: n/a - 100% done
Saving suzume_by_vilex45_dfh01vy.jpg to suzume_by_vilex45_dfh01vy (1).jpg
Click on the image to detect a color...
```