In [35]:
```
# prompt: colour detection of an image

from PIL import Image
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [36]:
```
# Load the image
image = Image.open('colorpic.jpg')
```

In [37]:
```
# Convert the image to a NumPy array
image_array = np.array(image)

# Get the RGB values of each pixel
red_channel = image_array[:, :, 0]
green_channel = image_array[:, :, 1]
blue_channel = image_array[:, :, 2]

# Calculate the average RGB values
average_red = np.mean(red_channel)
average_green = np.mean(green_channel)
average_blue = np.mean(blue_channel)

# Print the average RGB values
print('Average red:', average_red)
print('Average green:', average_green)
print('Average blue:', average_blue)

# Determine the dominant colour
if average_red > average_green and average_red > average_blue:
  print('Dominant colour: red')
elif average_green > average_red and average_green > average_blue:
  print('Dominant colour: green')
else:
  print('Dominant colour: blue')
```

```
Average red: 124.84283836858006
Average green: 120.14167824773413
Average blue: 127.25895317220544
Dominant colour: blue
```

In [38]:
```
#reading csv file
image = pd.read_csv('colors.csv')
```

In [39]:
```
image.head()
```

Out[39]:

| | air_force_blue_raf | Air Force Blue (Raf) | #5d8aa8 | 93 | 138 | 168 |
|---|---|---|---|---|---|---|
| **0** | air_force_blue_usaf | Air Force Blue (Usaf) | #00308f | 0 | 48 | 143 |
| **1** | air_superiority_blue | Air Superiority Blue | #72a0c1 | 114 | 160 | 193 |
| **2** | alabama_crimson | Alabama Crimson | #a32638 | 163 | 38 | 56 |
| **3** | alice_blue | Alice Blue | #f0f8ff | 240 | 248 | 255 |
| **4** | alizarin_crimson | Alizarin Crimson | #e32636 | 227 | 38 | 54 |

In [40]:
```
image.tail()
```

Out[40]:

| | air_force_blue_raf | Air Force Blue (Raf) | #5d8aa8 | 93 | 138 | 168 |
|---|---|---|---|---|---|---|
| **859** | yellow_orange | Yellow Orange | #ffae42 | 255 | 174 | 66 |
| **860** | yellow_process | Yellow (Process) | #ffef00 | 255 | 239 | 0 |
| **861** | yellow_ryb | Yellow (Ryb) | #fefe33 | 254 | 254 | 51 |
| **862** | zaffre | Zaffre | #0014a8 | 0 | 20 | 168 |
| **863** | zinnwaldite_brown | Zinnwaldite Brown | #2c1608 | 44 | 22 | 8 |

In [41]:
```
type(image)
```

Out[41]:
```
pandas.core.frame.DataFrame
```

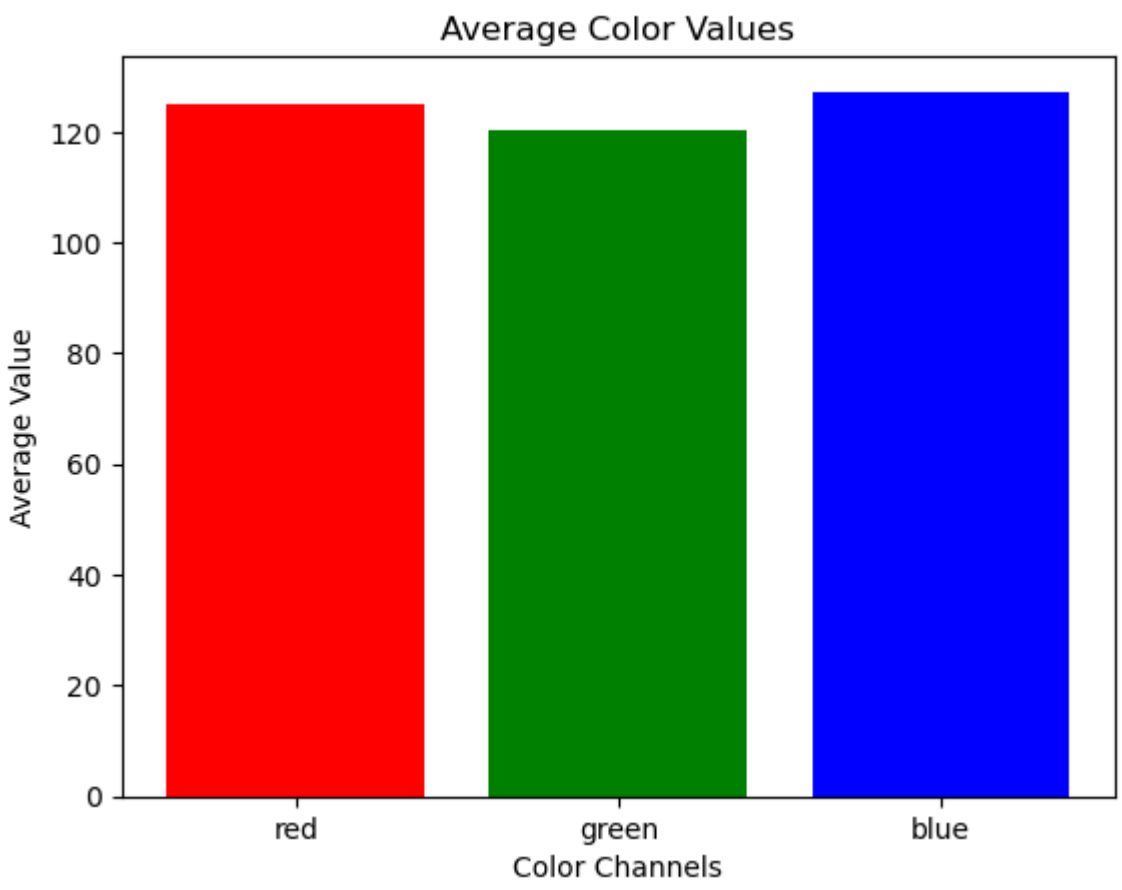
In [42]:
```
print(len(image))
```

```
864
```

In [43]:
```
# Calculate average color values for each channel
average_color = np.mean(image_array, axis=(0, 1))
```

In [44]:
```
def plot_bar_graph(average_color):
    colors = ['red', 'green', 'blue']
    plt.bar(colors, average_color, color=colors)
    plt.title('Average Color Values')
    plt.xlabel('Color Channels')
    plt.ylabel('Average Value')
    plt.show()
```

In [34]:
```
# Plot the bar graph
plot_bar_graph(average_color)
```




In [ ]: