

In [1]:

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

In [2]:

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

In [4]:

```
csv.head()
```

Out[4]:

|   | color                | color_name            | value   | 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 |

In [5]:

```
csv.describe()
```

Out[5]:

|       | R          | G          | B          |
|-------|------------|------------|------------|
| count | 865.000000 | 865.000000 | 865.000000 |
| mean  | 158.598844 | 124.683237 | 119.087861 |
| std   | 85.338432  | 76.270225  | 78.343862  |
| min   | 0.000000   | 0.000000   | 0.000000   |
| 25%   | 101.000000 | 64.000000  | 53.000000  |
| 50%   | 178.000000 | 123.000000 | 119.000000 |
| 75%   | 236.000000 | 190.000000 | 186.000000 |
| max   | 255.000000 | 255.000000 | 255.000000 |

In [6]:

```
print(csv.shape)
```

(865, 6)

In [7]:

```
csv.isnull().values.any()
```

Out[7]:

False

In [8]:

```
csv.isnull().sum()
```

Out[8]:

```
color      0
color_name  0
value      0
R          0
G          0
B          0
dtype: int64
```

In [9]:

```
csv.nunique()
```

Out[9]:

```
color      865
color_name  865
value      765
R          221
G          234
B          230
dtype: int64
```

In [10]:

```
csv.corr()
```

Out[10]:

|          | <b>R</b> | <b>G</b> | <b>B</b> |
|----------|----------|----------|----------|
| <b>R</b> | 1.000000 | 0.226170 | 0.012736 |
| <b>G</b> | 0.226170 | 1.000000 | 0.292491 |
| <b>B</b> | 0.012736 | 0.292491 | 1.000000 |

In [11]:

```
img=cv2.imread("dora.jpg",1)
```

In [12]:

```
print(img)
```

```
[[[235 224 244]
   [234 223 243]
   [234 223 243]
   ...
   [230 214 238]
   [230 214 238]
   [230 214 238]]

 [[235 224 244]
   [234 223 243]
   [234 223 243]
   ...
   [230 214 238]
   [230 214 238]
   [230 214 238]]

 [[235 224 244]
   [234 223 243]
   [234 223 243]
   ...
   [230 214 238]
   [230 214 238]
   [230 214 238]]

 ...

 [[230 214 237]
   [230 214 237]
   [230 214 237]
   ...
   [235 225 242]
   [235 225 242]
   [235 225 242]]

 [[230 214 237]
   [230 214 237]
   [230 214 237]
   ...
   [235 225 242]
   [235 225 242]
   [235 225 242]]

 [[230 214 237]
   [230 214 237]
   [230 214 237]
   ...
   [235 225 242]
   [235 225 242]
   [235 225 242]]]
```

In [13]:

```
img=cv2.imread("dora.jpg",0)
```

In [14]:

```
print(img)
```

```
[[231 230 230 ... 223 223 223]
 [231 230 230 ... 223 223 223]
 [231 230 230 ... 223 223 223]
 ...
 [223 223 223 ... 231 231 231]
 [223 223 223 ... 231 231 231]
 [223 223 223 ... 231 231 231]]
```

In [15]:

```
print(type(img))
```

```
<class 'numpy.ndarray'>
```

In [16]:

```
print(img.shape)
```

```
(518, 920)
```

In [17]:

```
img=cv2.imread("dora.jpg",1)
```

In [18]:

```
print(img.shape)
```

```
(518, 920, 3)
```

In [19]:

```
img_path =(r'C:\Users\Ilakiya\Desktop\dora.jpg')
```

In [20]:

```
image = cv2.imread(img_path)
```

In [21]:

```
image = cv2.imread("C:\\Users\\Ilakiya\\Desktop\\dora.jpg")
```

In [22]:

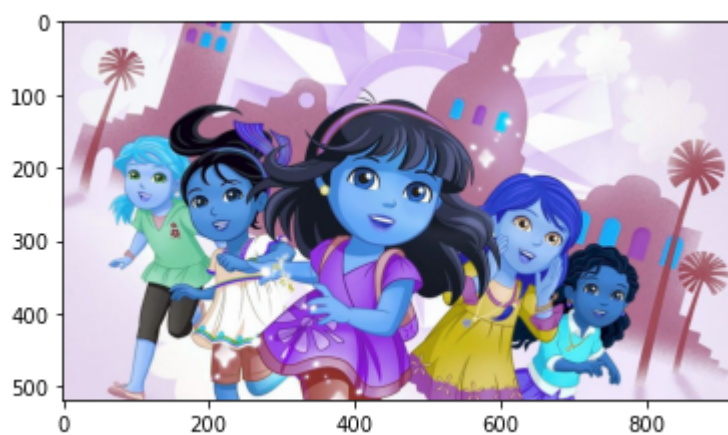
```
import matplotlib.pyplot as plt
```

In [27]:

```
plt.imshow(image)
```

Out[27]:

<matplotlib.image.AxesImage at 0x22908d32400>

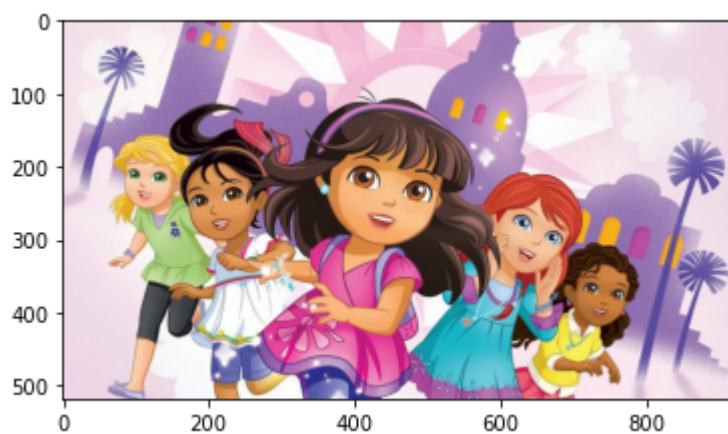


In [28]:

```
image = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)  
plt.imshow(image)
```

Out[28]:

<matplotlib.image.AxesImage at 0x22908cb7100>

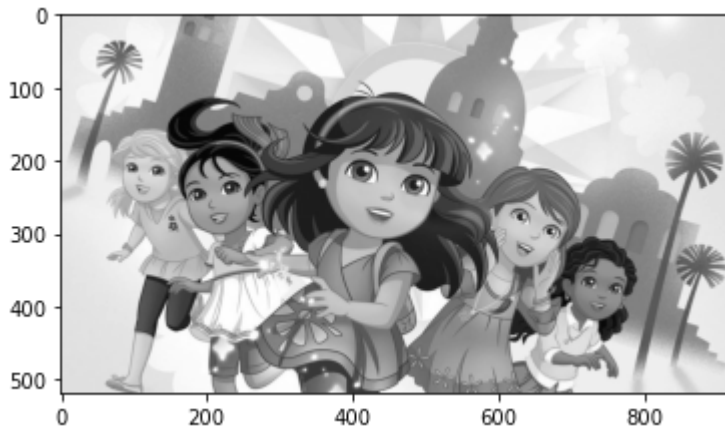


In [26]:

```
gray_image = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)
plt.imshow(gray_image, cmap='gray')
```

Out[26]:

<matplotlib.image.AxesImage at 0x22908cdd430>



In [30]:

```
resized_image = cv2.resize(image, (1200, 600))
plt.imshow(resized_image)
```

Out[30]:

<matplotlib.image.AxesImage at 0x1516b5b8490>



In [33]:

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

In [34]:

```
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(csv.loc[i, "B"]))
        if d <= minimum:
            minimum = d
            cname = csv.loc[i, "color_name"]
    return cname
```

In [35]:

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

In [36]:

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

In [37]:

```
while True:

    cv2.imshow("image", img)
    if clicked:

        # cv2.rectangle(image, start point, endpoint, color, thickness)-1 fills entire rect
        cv2.rectangle(img, (20, 20), (750, 60), (b, g, r), -1)

        # Creating text string to display( Color name and RGB values )
        text = get_color_name(r, g, b) + ' R=' + str(r) + ' G=' + str(g) + ' B=' + str(b)

        # cv2.putText(img,text,start,font(0-7),fontScale,color,thickness,lineType )
        cv2.putText(img, text, (50, 50), 2, 0.8, (255, 255, 255), 2, cv2.LINE_AA)

        # For very light colours we will display text in black colour
        if r + g + b >= 600:
            cv2.putText(img, text, (50, 50), 2, 0.8, (0, 0, 0), 2, cv2.LINE_AA)

        clicked = False

    # Break the loop when user hits 'esc' key
    if cv2.waitKey(20) & 0xFF == 27:
        break

cv2.destroyAllWindows()
```

In [ ]: