Detecting the colors in an image

In [2]:

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./colors.jpg', cv.IMREAD_COLOR)


# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(img)
```

Out[2]:

```
<matplotlib.image.AxesImage at 0x27b8a1d1be0>
```


In [3]:

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./colors.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)

# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(RGBimg)
```

Out[3]:

```
<matplotlib.image.AxesImage at 0x27b8ad3bb50>
```


convering from RGB to HSV

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./colors.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)

#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

# Ploting and Displaying the image
plt.figure(figsize=(10,10))
plt.imshow(HSVimg)
```
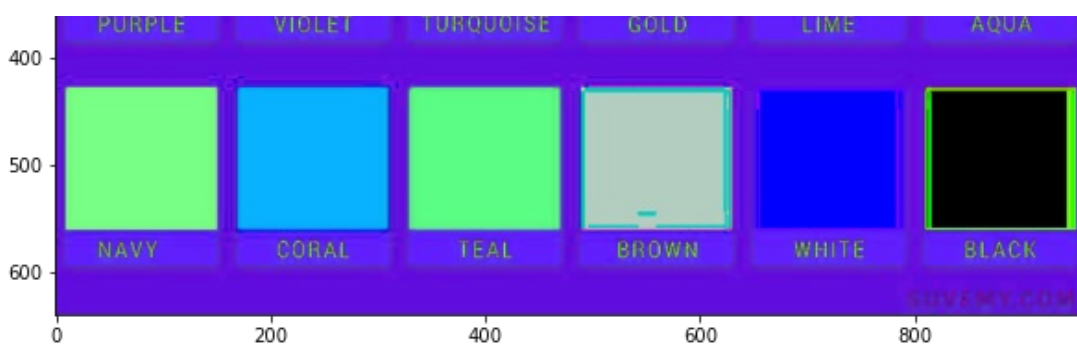
Out[21]:

```
<matplotlib.image.AxesImage at 0x27b8e01f5e0>
```

To deted the color, we need to specifiy the lower and upper color range

In [8]:

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./colors.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)

#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

lower = np.array([25,150,50])
upper = np.array([35,255,255])

# To detetic a specific color eg: yellow
mask = cv.inRange(HSVimg, lower, upper)

# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(mask)
```

Out[8]:

```
<matplotlib.image.AxesImage at 0x27b8ac5de50>
```

To show a particular color and blacken out the other colors

In [23]:

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./colors.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)

#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

lower = np.array([25,150,50])
upper = np.array([35,255,255])

# To detetic a specific color eg: yellow
mask = cv.inRange(HSVimg, lower, upper)

# To blacken out the other colors
res=cv.bitwise_and(RGBimg, RGBimg, mask=mask)

# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(res)
```
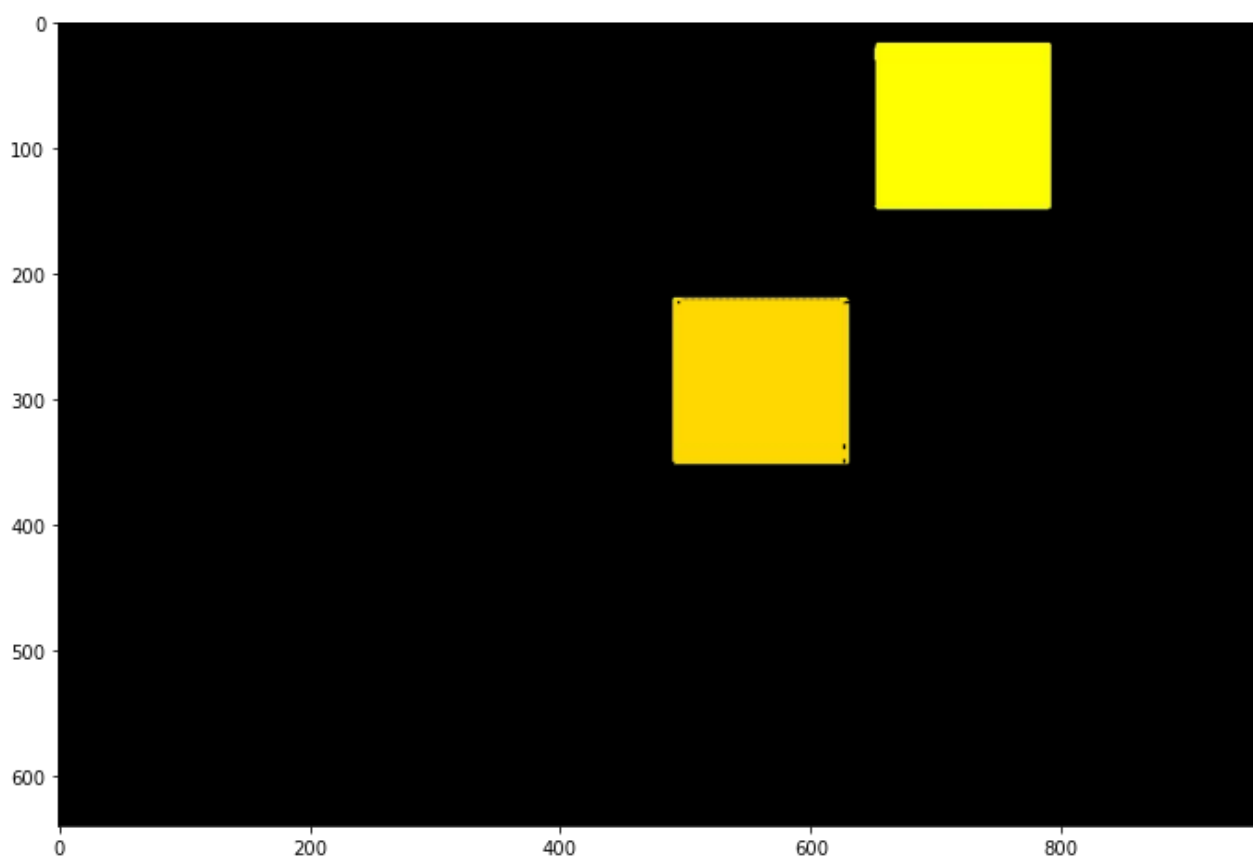
Out[23]:

<matplotlib.image.AxesImage at 0x27b8e3e6730>

To detect the red color

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./colors.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)

#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

lower = np.array([0,150,50])
upper = np.array([10,255,255])

# To detetic a specific color eg: yellow
mask = cv.inRange(HSVimg, lower, upper)

# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(mask)
```
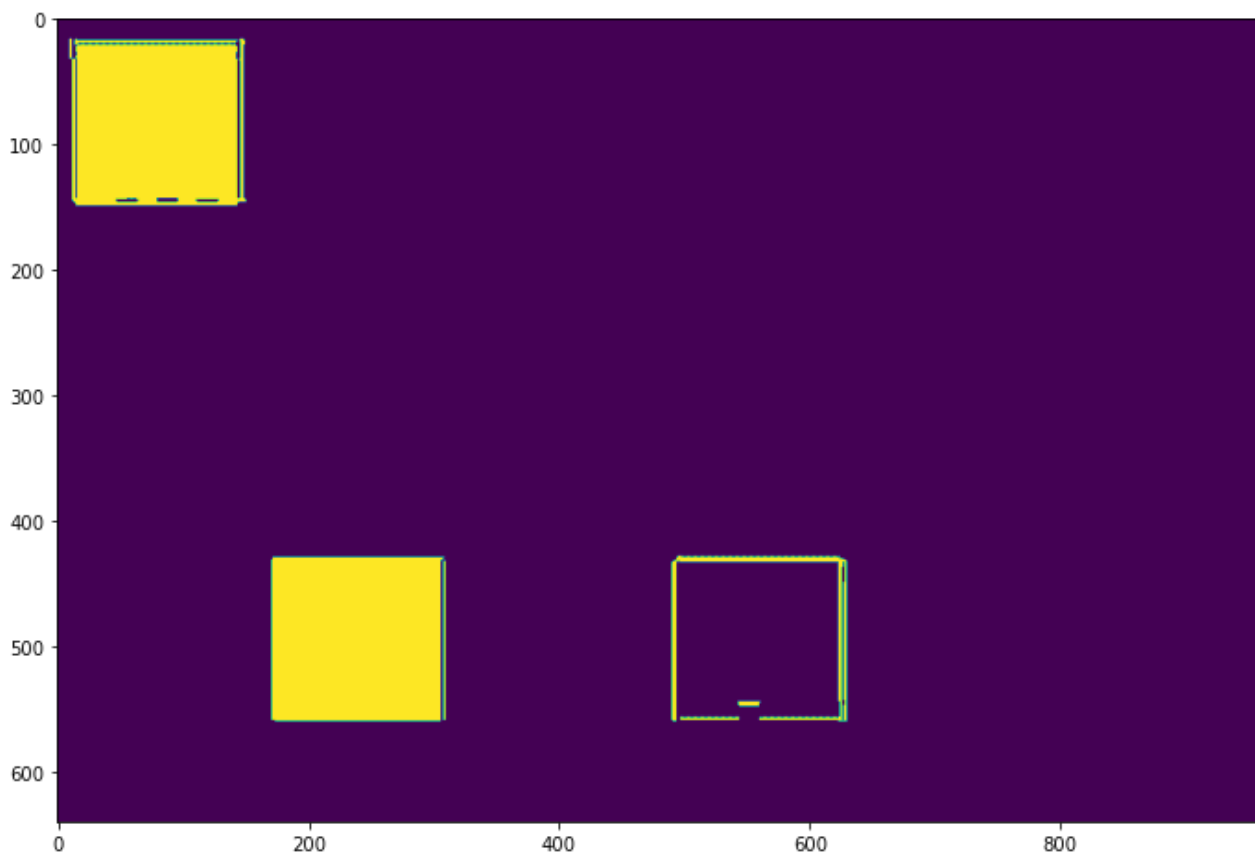
Out[10]:

```
<matplotlib.image.AxesImage at 0x27b8b4af970>
```


It created a mask right on the top of red shades

In [12]:

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt
```

```
# Defining and reading an Image usinig opencv module
img = cv.imread('./colors.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)

#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

lower = np.array([0,150,50])
upper = np.array([10,255,255])

# To detetic a specific color eg: yellow
mask = cv.inRange(HSVimg, lower, upper)

# To blacken out the other colors
res=cv.bitwise_and(RGBimg, RGBimg, mask=mask)

# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(res)
```
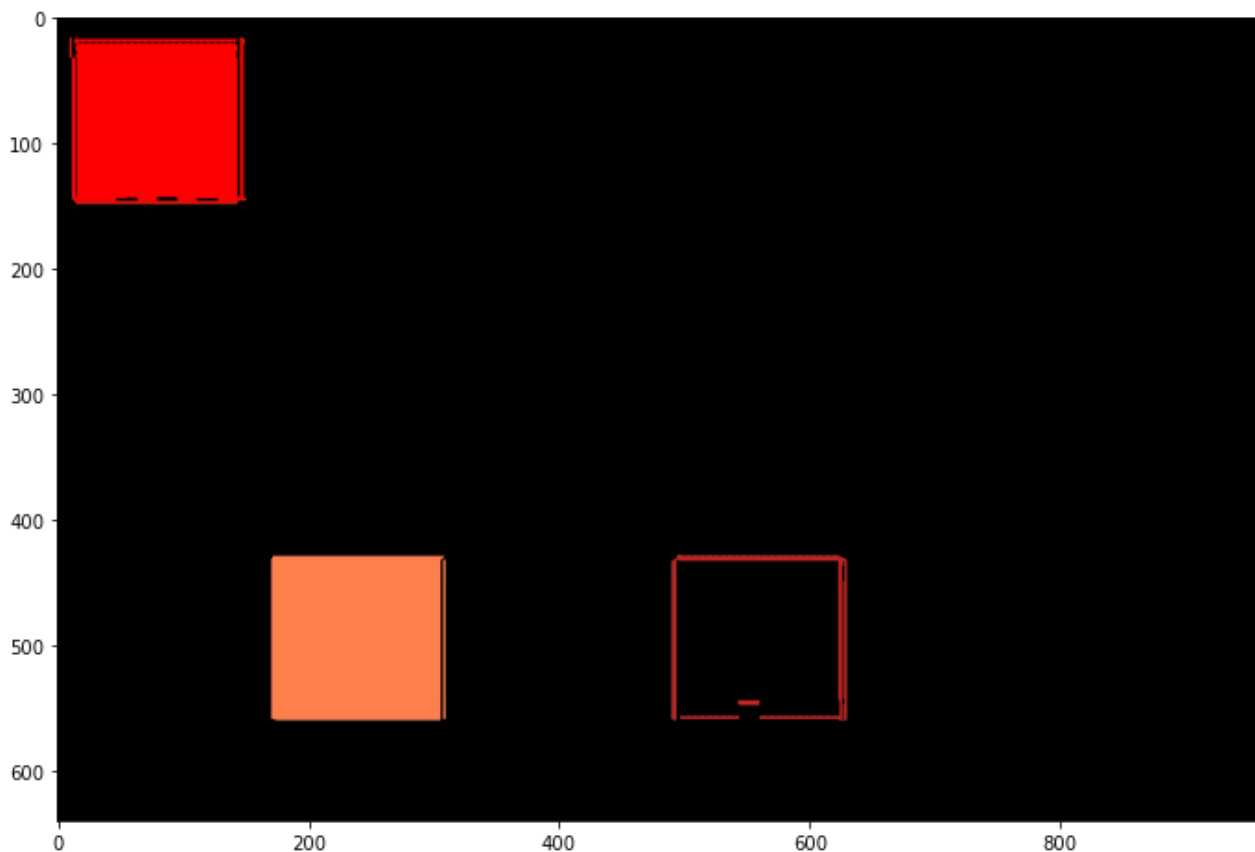
Out[12]:

```
<matplotlib.image.AxesImage at 0x27b8b50b0d0>
```


To detect the dark blue color

In [13]:

```
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./colors.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)
```

```python
#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

lower = np.array([111,150,50])
upper = np.array([125,255,255])

# To detetic a specific color eg: yellow
mask = cv.inRange(HSVimg, lower, upper)

# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(mask)
```
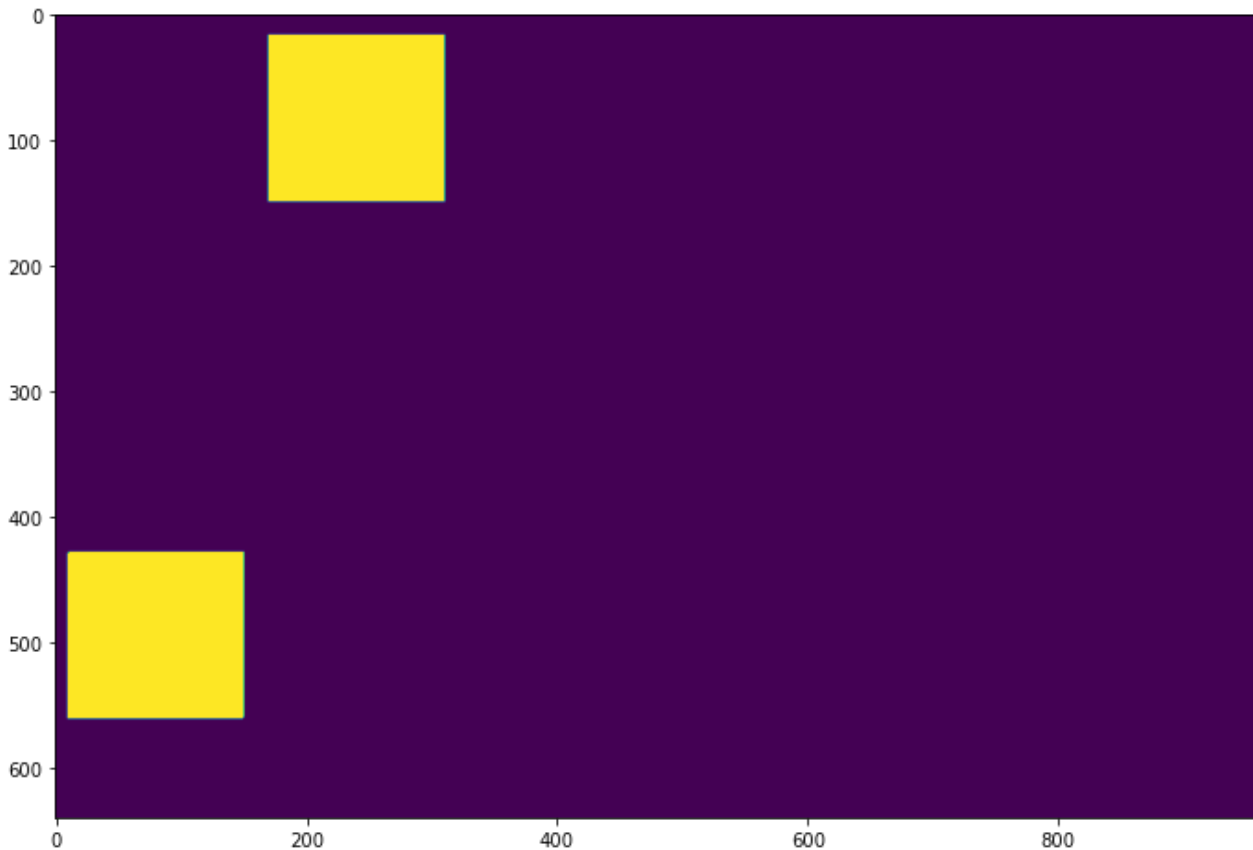
Out[13]:

```
<matplotlib.image.AxesImage at 0x27b8b55a460>
```


In [14]:

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./colors.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)

#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

lower = np.array([111,150,50])
upper = np.array([125,255,255])

# To detetic a specific color eg: yellow
mask = cv.inRange(HSVimg, lower, upper)

# To blacken out the other colors
res=cv.bitwise_and(RGBimg, RGBimg, mask=mask)

# Ploting and Displaying the image
```
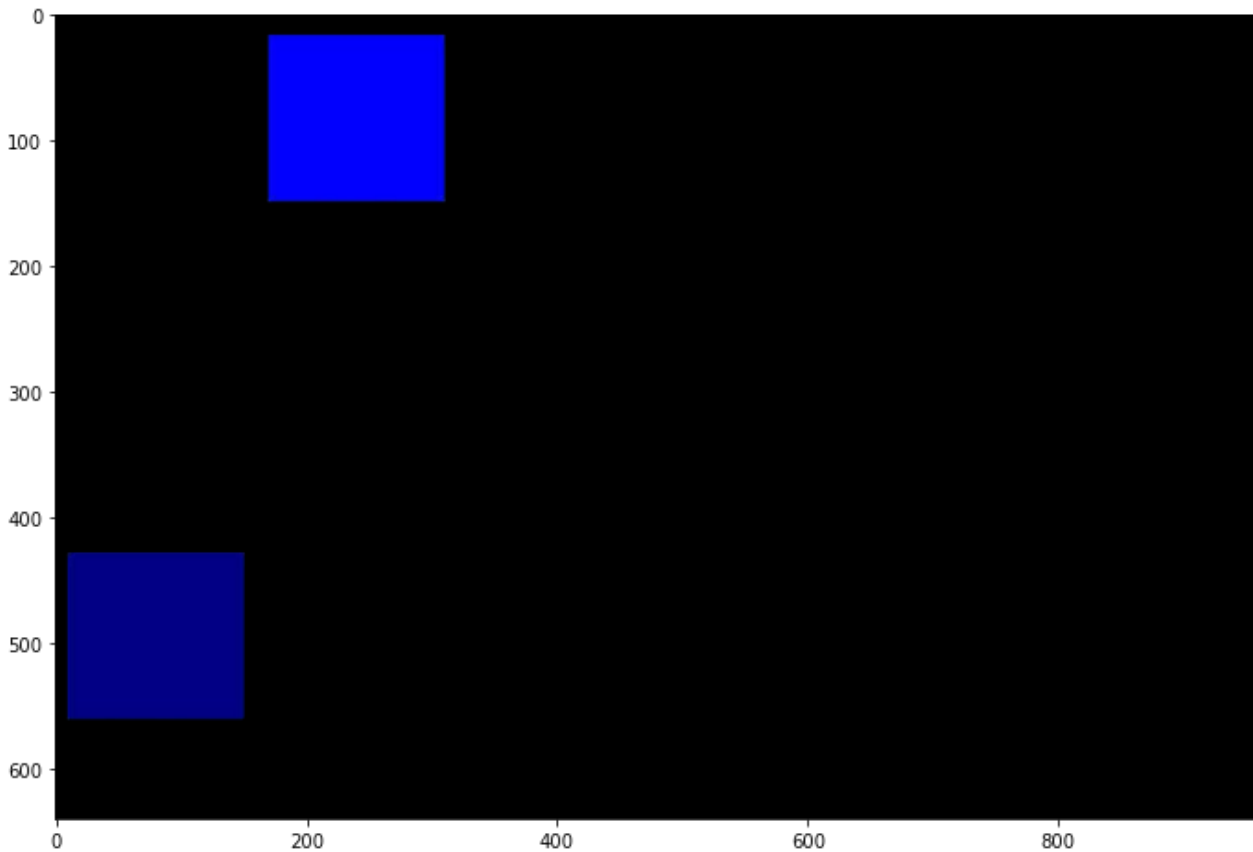
```
plt.figure(figsize=(20,8))
plt.imshow(res)
```

Out[14]:

```
<matplotlib.image.AxesImage at 0x27b8ad0e880>
```


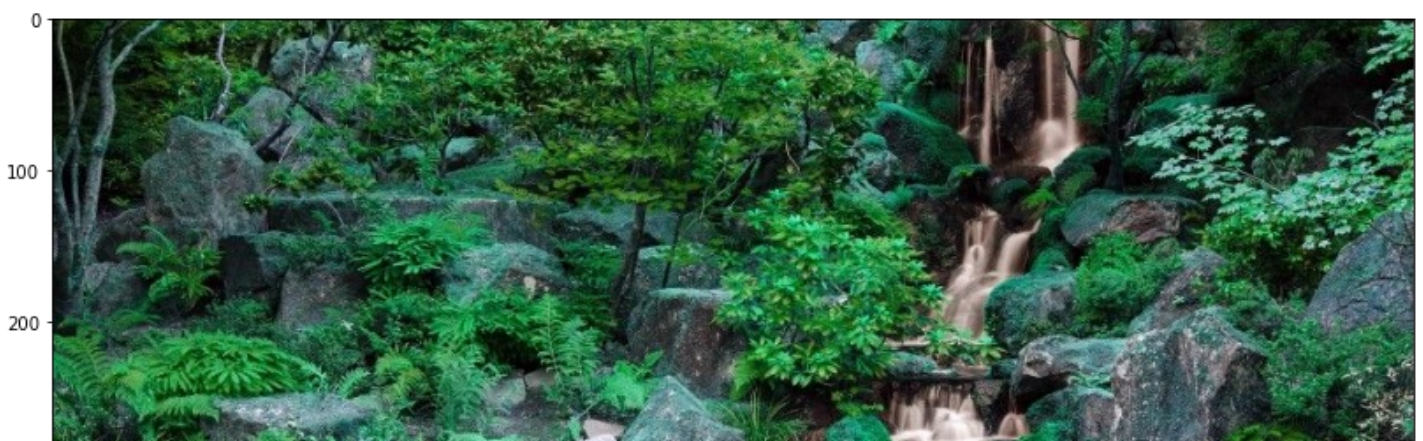# Now lets do this on an image

In [20]:

```
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./water.jpg', cv.IMREAD_COLOR)


# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(img)
```
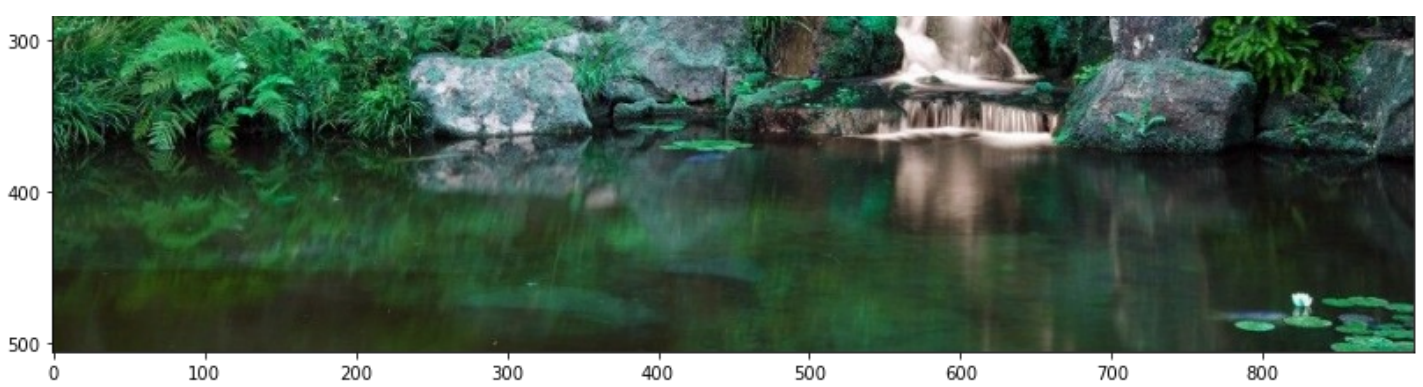
Out[20]:

```
<matplotlib.image.AxesImage at 0x27b8ccefd30>
```

```
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./water.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)

#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

lower = np.array([35,150,50])
upper = np.array([75,255,255])

# To detetic a specific color eg: yellow
mask = cv.inRange(HSVimg, lower, upper)

# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(mask)
```
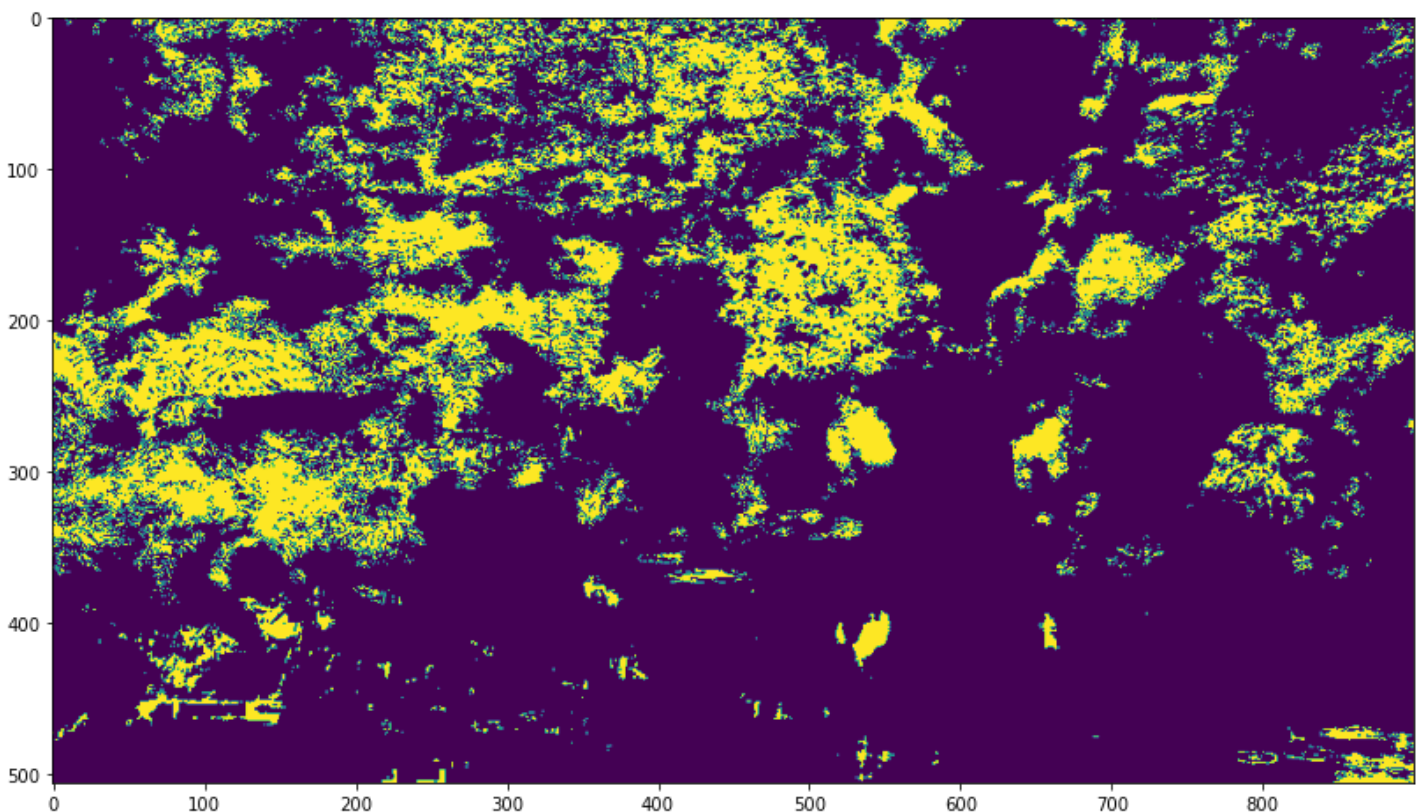
Out[17]:

<matplotlib.image.AxesImage at 0x27b8caf34f0>

In [19]:

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./water.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)

#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

lower = np.array([35,150,50])
upper = np.array([75,255,255])

# To detetic a specific color eg: yellow
mask = cv.inRange(HSVimg, lower, upper)

# To blacken out the other colors
res=cv.bitwise_and(RGBimg, RGBimg, mask=mask)

# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(res)
```
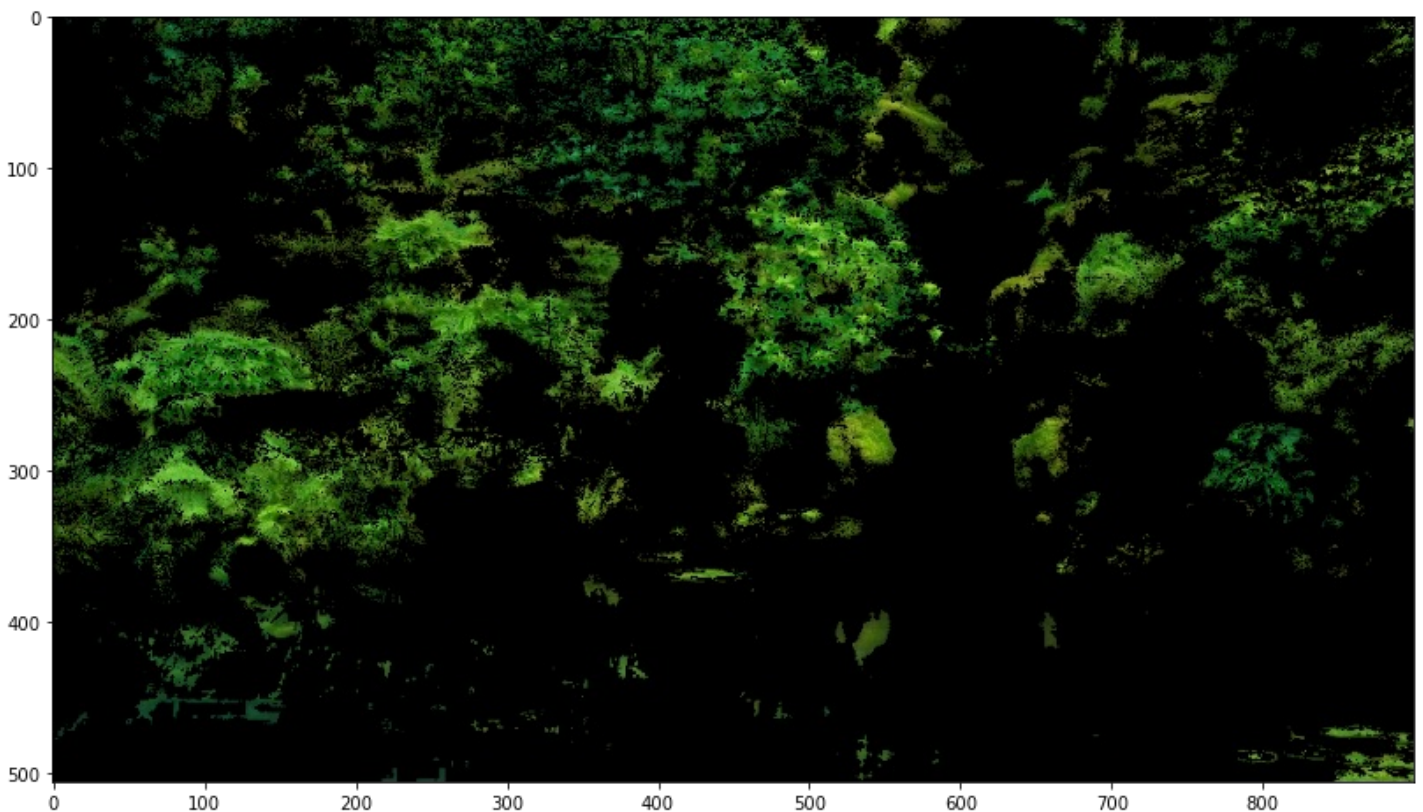
Out[19]:

```
<matplotlib.image.AxesImage at 0x27b8c4b3190>
```


In [24]:

```python
# Importing required modules
import numpy as np
import cv2 as cv
import matplotlib.pyplot as plt

# Defining and reading an Image usinig opencv module
img = cv.imread('./morali.jpg', cv.IMREAD_COLOR)

# Convert GBR colour mode to RGB colour mode
RGBimg = cv.cvtColor(img, cv.COLOR_BGR2RGB)
```

```
#Convert RGB colour mode to HSV colour mode
HSVimg = cv.cvtColor(RGBimg, cv.COLOR_RGB2HSV)

lower = np.array([35,150,50])
upper = np.array([75,255,255])

# To detetic a specific color eg: yellow
mask = cv.inRange(HSVimg, lower, upper)

# To blacken out the other colors
res=cv.bitwise_and(RGBimg, RGBimg, mask=mask)

# Ploting and Displaying the image
plt.figure(figsize=(20,8))
plt.imshow(res)
```
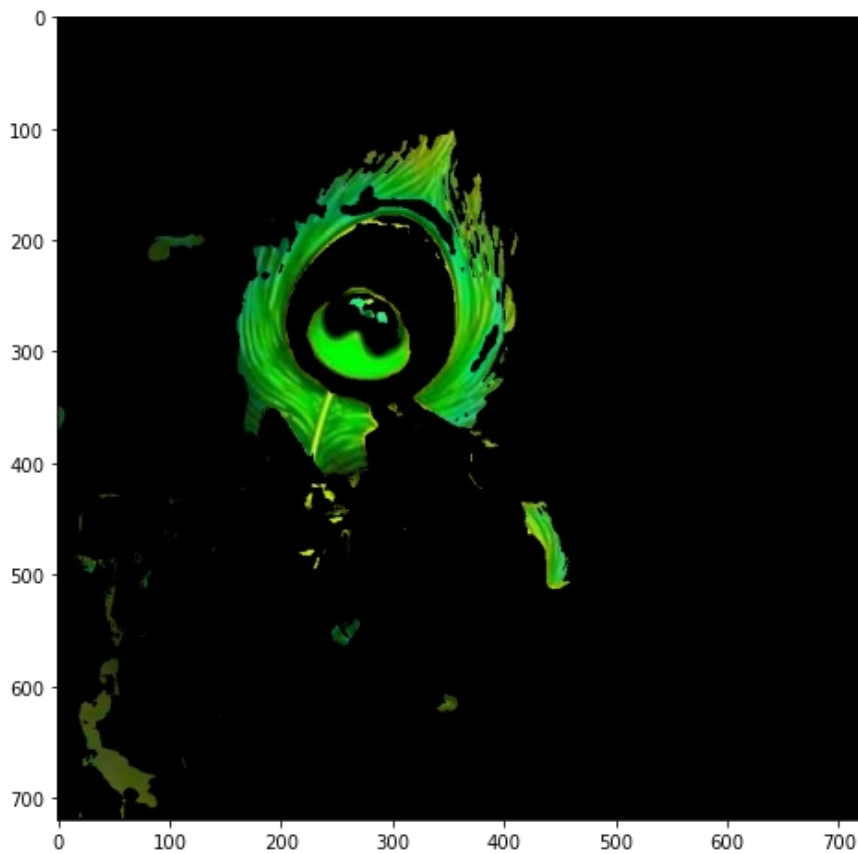
Out[24]:

<matplotlib.image.AxesImage at 0x27b8e434cd0>

In [ ]: