Introduction to OpenCV

In [8]:
```
#Reading an image
# Importing the OpenCV library
import cv2
# Reading the image using imread() function
image = cv2.imread('beautiful.png')

# Extracting the height and width of an image
h, w = image.shape[:2]
# Displaying the height and width
print("Height = {},  Width = {}".format(h, w))
```

```
Height = 2000,  Width = 2000
```

In [9]:
```
# Extracting RGB values of a pixel
(B,G,R)=image[100,100]
print("R={},G={},B={}".format(R,G,B))

B=image[100,100,0]
print("B={}".format(B))
```

```
R=255,G=255,B=255
B=255
```

In [10]:
```
# Extract the region of interest
RI=image[100:500,200:700]
```

In [11]:
```
# Resize the image
image_resized=cv2.resize(image,(500,500))
```

In [12]:
```
# Calcualte the ratio
Ratio=h/500
dim=(500,int(h*Ratio))
resize_aspect=cv2.resize(image,dim)
```

In [17]:
```
# Rotating the image

#Calculating the center of the image
center_image=(w//2,h//2)

#Generate a Rotztion Matrix
m=cv2.getRotationMatrix2D(center_image,-45,1.0)

#Performing
rotated = cv2.warpAffine(image, m, (w, h))
```

In [18]:
```
# Drawing a rectangle
copy=image.copy()
rectangle=cv2.rectangle(copy,(1500,800),(600,400),(255,0,0),2)
```

In [19]:
```
# Display a text
copy=image.copy()
text=cv2.putText(copy,'Test Text',(500,550),cv2.FONT_HERSHEY_SIMPLEX, 4, (255, 0, 0), 2)
```