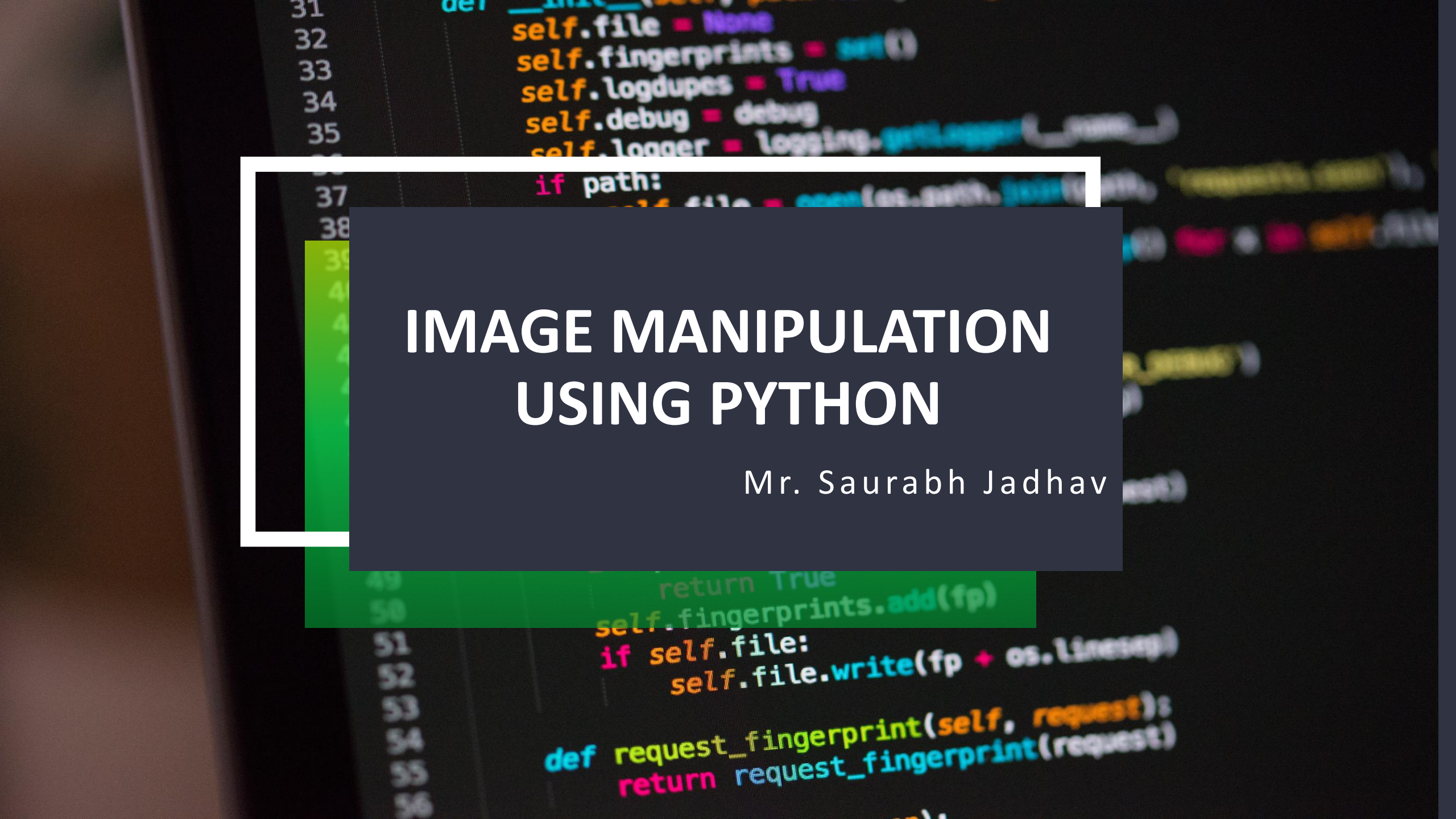
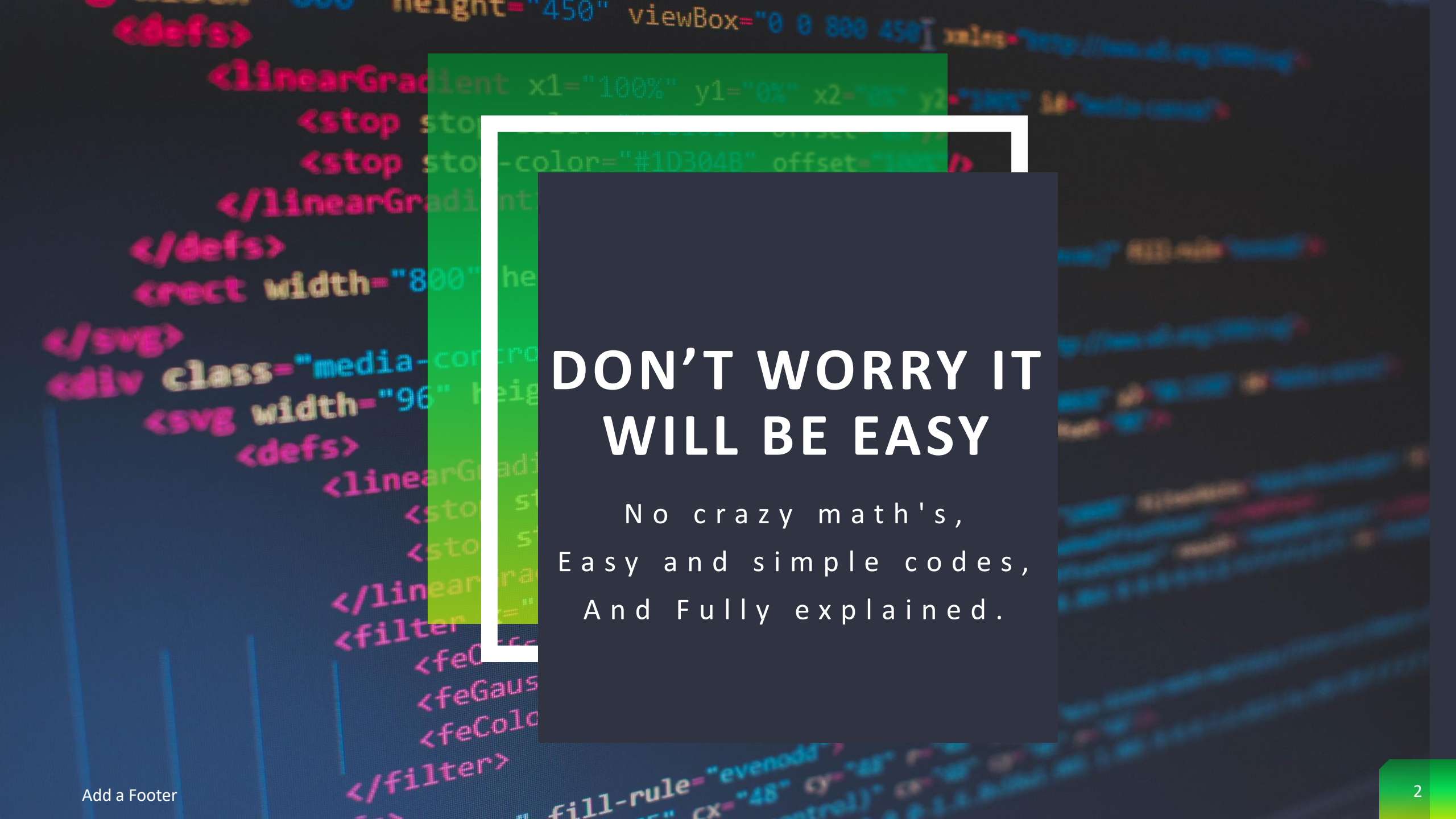


IMAGE MANIPULATION USING PYTHON

Mr. Saurabh Jadhav



DON’T WORRY IT WILL BE EASY

No crazy math's,
Easy and simple codes,
And Fully explained.

PILLOW

Pillow is a Python Imaging Library (PIL), which adds support for opening, manipulating, and saving images.

INSTALLATION OF PILLOW

```
pip install Pillow==2.2.2
```

FILE FORMATS SUPPORTED ?

Before we start using the Pillow module, let us mention some of the file types that is supported. BMP EPS GIF IM JPEG MSP PCX PNG PPM TIFF WebP ICO PSD PDF Some of the file types, you only have the possibility to read, and others you can only write.

COLORS AND RGBA FORM

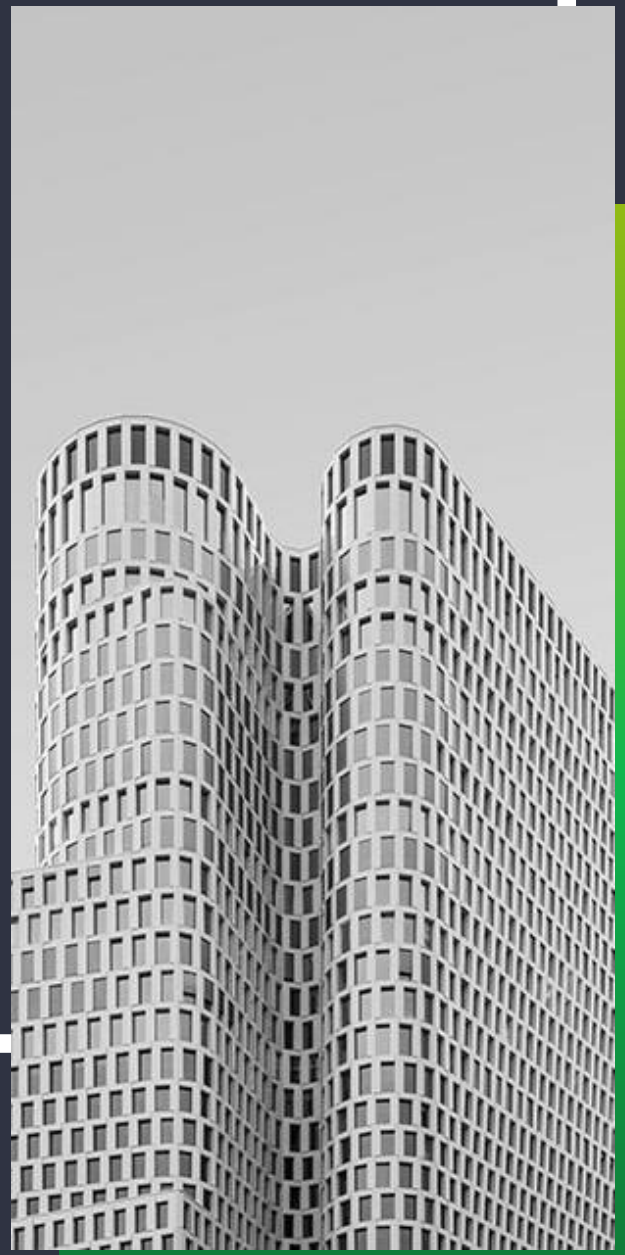
Name	RGBA Value	Name	RGBA Value
White	(255, 255, 255, 255)	Red	(255, 0, 0, 255)
Green	(0, 128, 0, 255)	Blue	(0, 0, 255, 255)
Gray	(128, 128, 128, 255)	Yellow	(255, 255, 0, 255)
Black	(0, 0, 0, 255)	Purple	(128, 0, 128, 255)

Computer programs often represent a color in an image as an *RGBA value*. An RGBA value is a group of numbers that specify the amount of red, green, blue, and *alpha* (or transparency) in a color.

Using Pillow

```
from PIL import Image

#import pillow
```



Load an Image

```
from PIL import Image, ImageFilter
try:
    original = Image.open("Lenna.png")
except:
    print "Unable to load image"
```

Show Image

```
Original.show()

#show() to show image
```

GETTING ATTRIBUTES OF IMAGE

```
print ("The size of the Image is: " )
print(

original.format,

 original.size,

 original.mode)
```

Resize Images

```
newsize = (300, 300)
im1 = im1.resize(newsize)
# Shows the image in image viewer
im1.show()
```

Change File Type

```
>>> from PIL import Image
>>> im = Image.open("test.jpg").convert("RGB")
>>> im.save("test.png", "png")
```

BLUR AN IMAGE

```
# Import the modules
from PIL import Image, ImageFilter
```

```
# Load an image from the hard drive
original = Image.open("Lenna.png")
```

```
# Blur the image
blurred=original.filter(ImageFilter.BLUR)

im1.filter(ImageFilter.GaussianBlur(radius = 2))
```

```
# save the new image
blurred.save("blurred.png")
```

Filters in Pillow

BLUR
CONTOUR
DETAIL
EDGE_ENHANCE
EDGE_ENHANCE_MORE
EMBOSS
FIND_EDGES
SMOOTH
SMOOTH_MORE
SHARPEN

ROTATE AN IMAGE

```
#tatras is image file
rotated = tatras.rotate(180)
rotated.save('tatras_rotated.jpg')
```

CROP AN IMAGE

```
cropped = tatras.crop((100, 100, 350, 350))
cropped.save('tatras_cropped.jpg')
```

GrayScale image

```
grayscale = tatras.convert('L')
grayscale.show()
```

Enhance image

```
# This will import Image and ImageEnhance modules
from PIL import Image, ImageEnhance
```

```
# Creating object of Brightness class
im3 = ImageEnhance.Brightness(im)

# showing resultant image
im3.enhance(2.0).show()
```

```
Brightness() and Sharpness() are
fun() of ImageEnhance
```

WHAT MORE WE CAN DO?

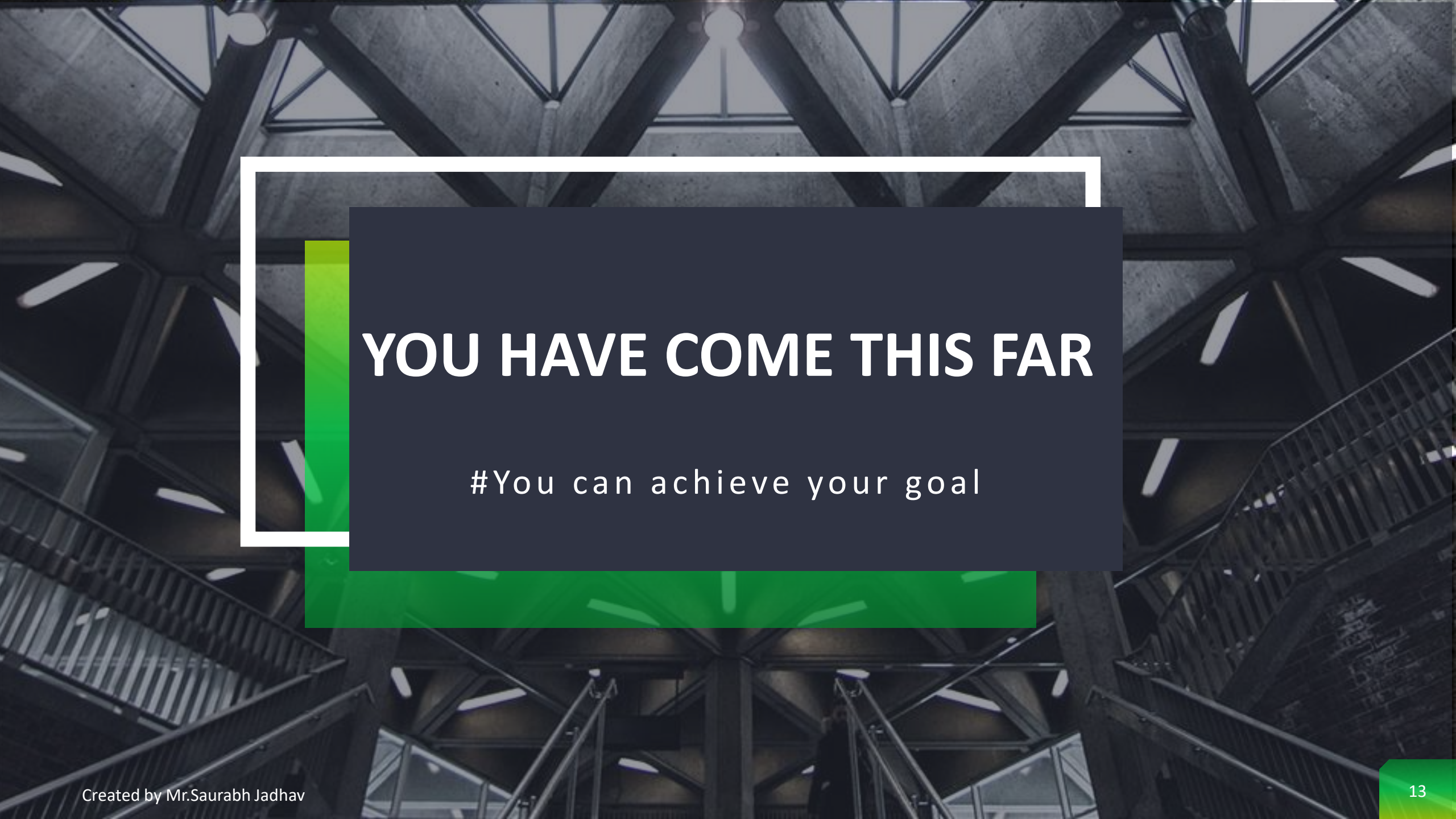
WE CAN DO THIS TO MULTIPLE IMAGES ? HOW ?

USE OS MODULE OF PYTHON!

Creating watermark

```
from PIL import Image, ImageDraw,ImageFont
import sys
try:
    tatras = Image.open("tatras.jpg")
except:
    print("Unable to load image")
sys.exit(1)
idraw = ImageDraw.Draw(tatras)
text = "High Tatras"
font = ImageFont.truetype("arial.ttf",
size=18)
idraw.text((10, 10), text, font=font)
tatras.save('tatras_watermarked.png')
```


THERE’S NO STOPPING HERE..
#This is Just a Beginning


YOU HAVE COME THIS FAR
#You can achieve your goal

THANK YOU

#From **Jashbhai Maganbhai Patel College of Commerce**

And

Mr. Saurabh Jadhav