Step-1: Importing Libraries

```
import cv2
import matplotlib.pyplot as plt
plt.style.use('seaborn')
```

Step-2: Loading and Plotting Original Image

```
img = cv2.imread("eiffel_tower.jpg")
img = cv2.cvtColor(img,cv2.COLOR_BGR2RGB)
plt.figure(figsize=(8,8))
plt.imshow(img)
plt.axis("off")
plt.title("Original Image")
plt.show()
```

Step-3: Converting Image to GrayScale

```
img_gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
plt.figure(figsize=(8,8))
plt.imshow(img_gray,cmap="gray")
plt.axis("off")
plt.title("GrayScale Image")
plt.show()
```

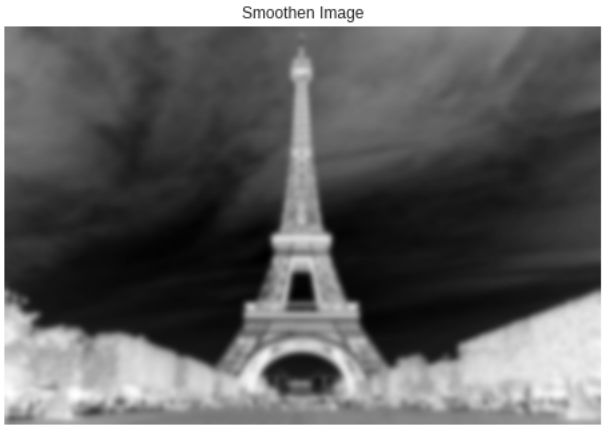
Step-4: Inverting the Image

```
# Invert Image
img_invert = cv2.bitwise_not(img_gray)
plt.figure(figsize=(8,8))
plt.imshow(img_invert,cmap="gray")
plt.axis("off")
```

```
plt.title("Inverted Image")
plt.show()
```

Step-5: Smoothing Inverted Image Pencil Sketch

```
img_smoothing = cv2.GaussianBlur(img_invert, (21, 21),sigmaX=0, sigmaY=0)
plt.figure(figsize=(8,8))
plt.imshow(img_smoothing,cmap="gray")
plt.axis("off")
plt.title("Smoothen Image")
plt.show()
```



Step-6: Converting image to pencil sketch

```
final = cv2.divide(img_gray, 255 - img_smoothing, scale=255)
plt.figure(figsize=(8,8))
plt.imshow(final,cmap="gray")
plt.axis("off")
plt.title("Final Sketch Image")
plt.show()
```

All Steps

```
plt.figure(figsize=(20,20))
plt.subplot(1,5,1)
plt.imshow(img)
plt.axis("off")
plt.title("Original Image")
plt.subplot(1,5,2)
plt.imshow(img_gray,cmap="gray")
plt.axis("off")
plt.title("GrayScale Image")
plt.subplot(1,5,3)
plt.imshow(img_invert,cmap="gray")
plt.axis("off")
plt.title("Inverted Image")
plt.subplot(1,5,4)
plt.imshow(img_smoothing,cmap="gray")
plt.axis("off")
plt.title("Smoothen Image")
plt.subplot(1,5,5)
plt.imshow(final,cmap="gray")
plt.axis("off")
plt.title("Final Sketch Image")
plt.show()
```