READ AND WRITE AN IMAGE

AIM

To write a python program using OpenCV to do the following image manipulations. i) Read, display, and write an image. ii) Access the rows and columns in an image. iii) Cut and paste a small portion of the image.

Software Required:

Anaconda - Python 3.7

Algorithm:

Step1:

Choose an image and save it as a filename.jpg

Step2:

Use imread(filename, flags) to read the file.

Step3:

Use imshow(window_name, image) to display the image.

Step4:

Use imwrite(filename, image) to write the image.

Step5:

End the program and close the output image windows.

Program:

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i) #To Read,display the image

```
# displaying image in color
img=cv2.imread("megumi.jpg",1)
cv2.imshow("image",img)
cv2.waitKey(0)
cv2.destroyAllWindows()



# displaying image in grayscale
img2=cv2.imread("megumi.jpg",0)
cv2.imshow("image",img2)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

ii) #To write the image

```
cv2.imwrite('saved_original.jpg',img)
cv2.imwrite('saved_grayscale.jpg',img2)
```

iii) #Find the shape of the Image

```
print(img.shape)
print(img2.shape)
```

iv) #To access rows and columns

```
import random
for i in range(172,373):
    for j in range(172,373):
        img[i][j]=[random.randint(0,255),random.randint(0,255),random.randint(0,255)]
cv2.imshow('part image',img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

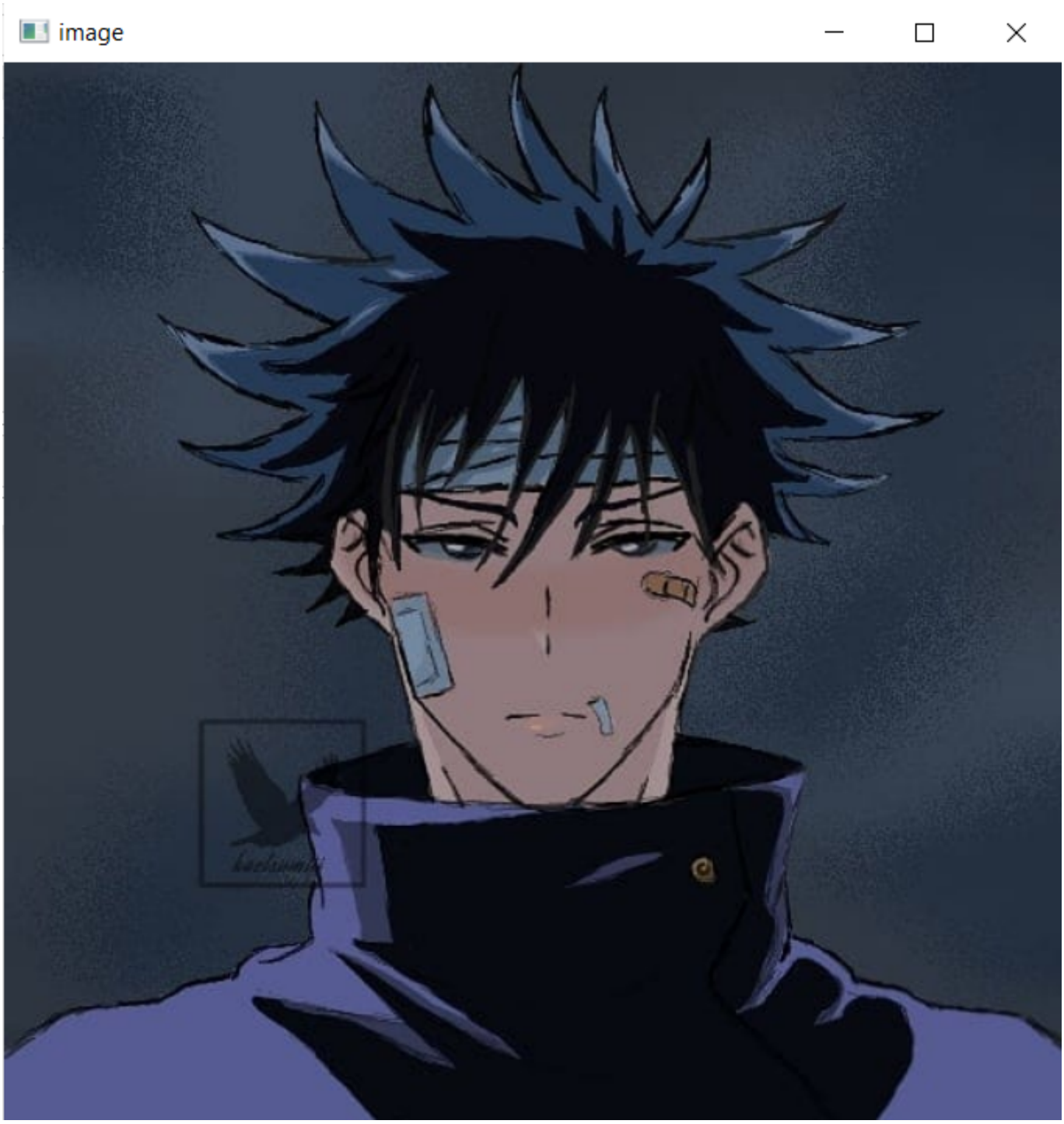
v) #To cut and paste portion of image

```
img3=cv2.imread("megumi.jpg",1)
cut=img3[172:221,172:373]
img3[221:270,172:373]=cut
cv2.imshow('212221230048',img3)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Output:

i) Read and display the image

original image



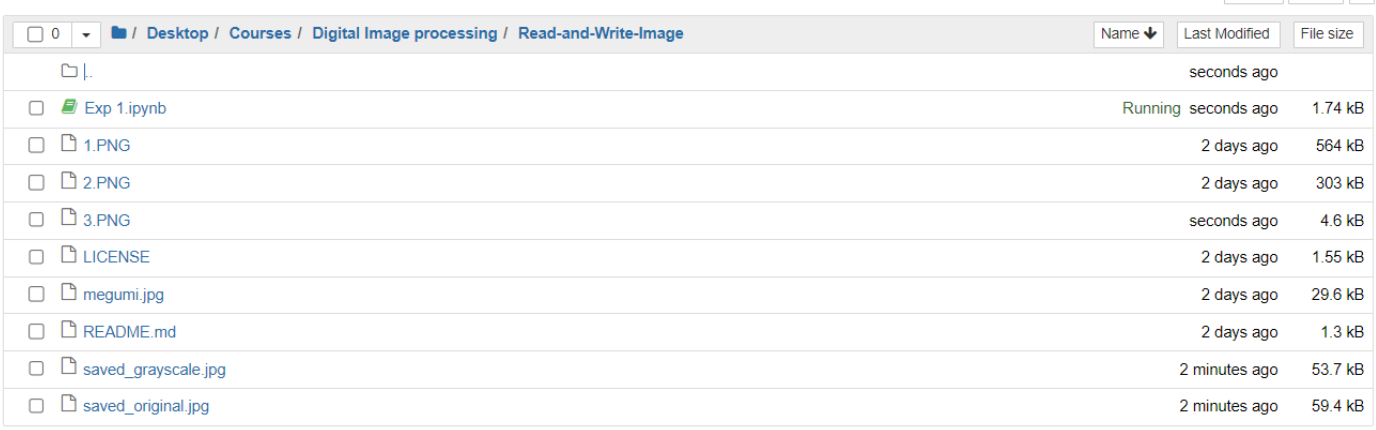
grayscale image

ii)Write the image

```
In [4]: cv2.imwrite('saved_original.jpg',img)
        cv2.imwrite('saved_grayscale.jpg',img2)

Out[4]: True
```

saved image in folder

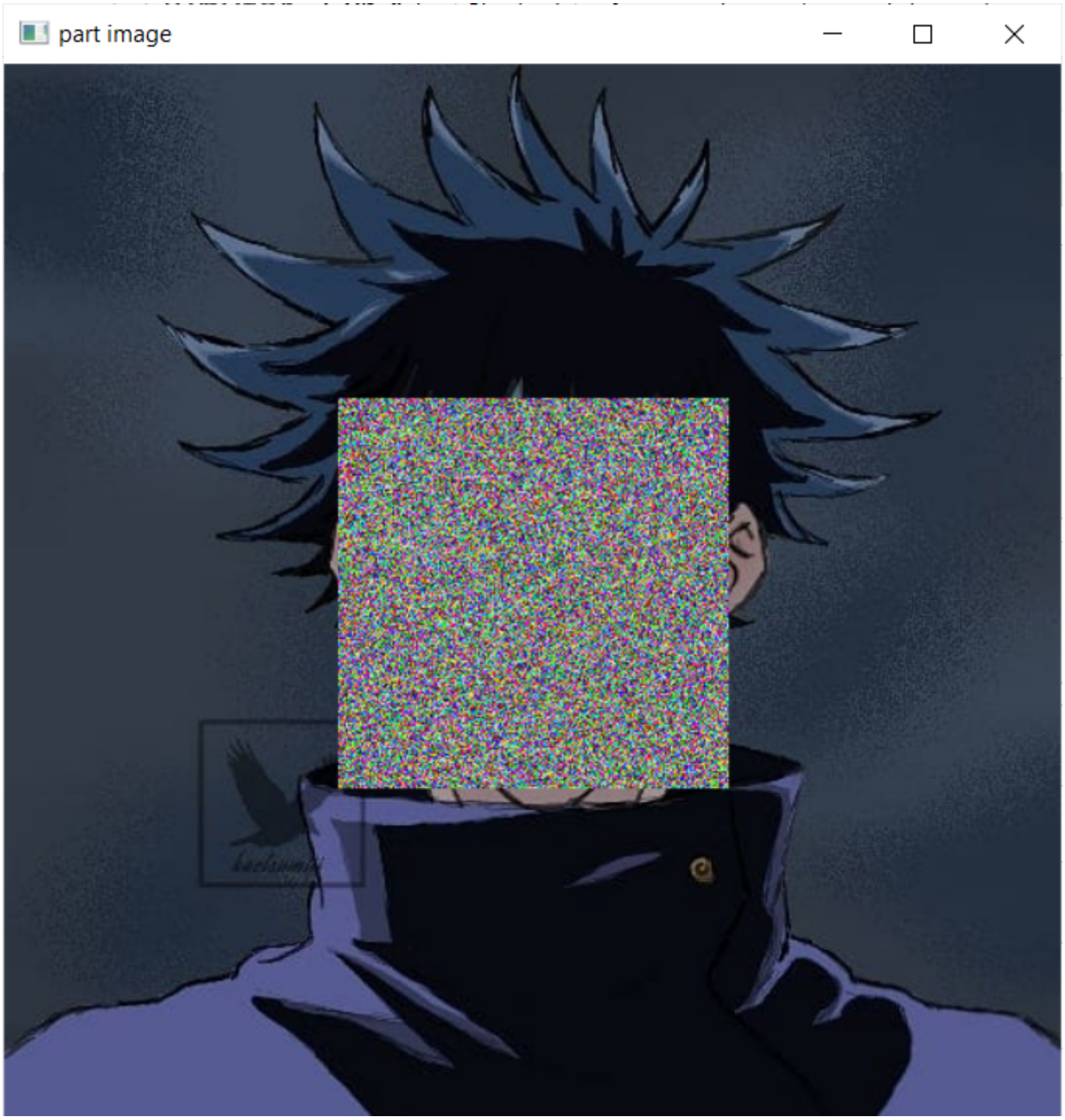


iii)Shape of the Image

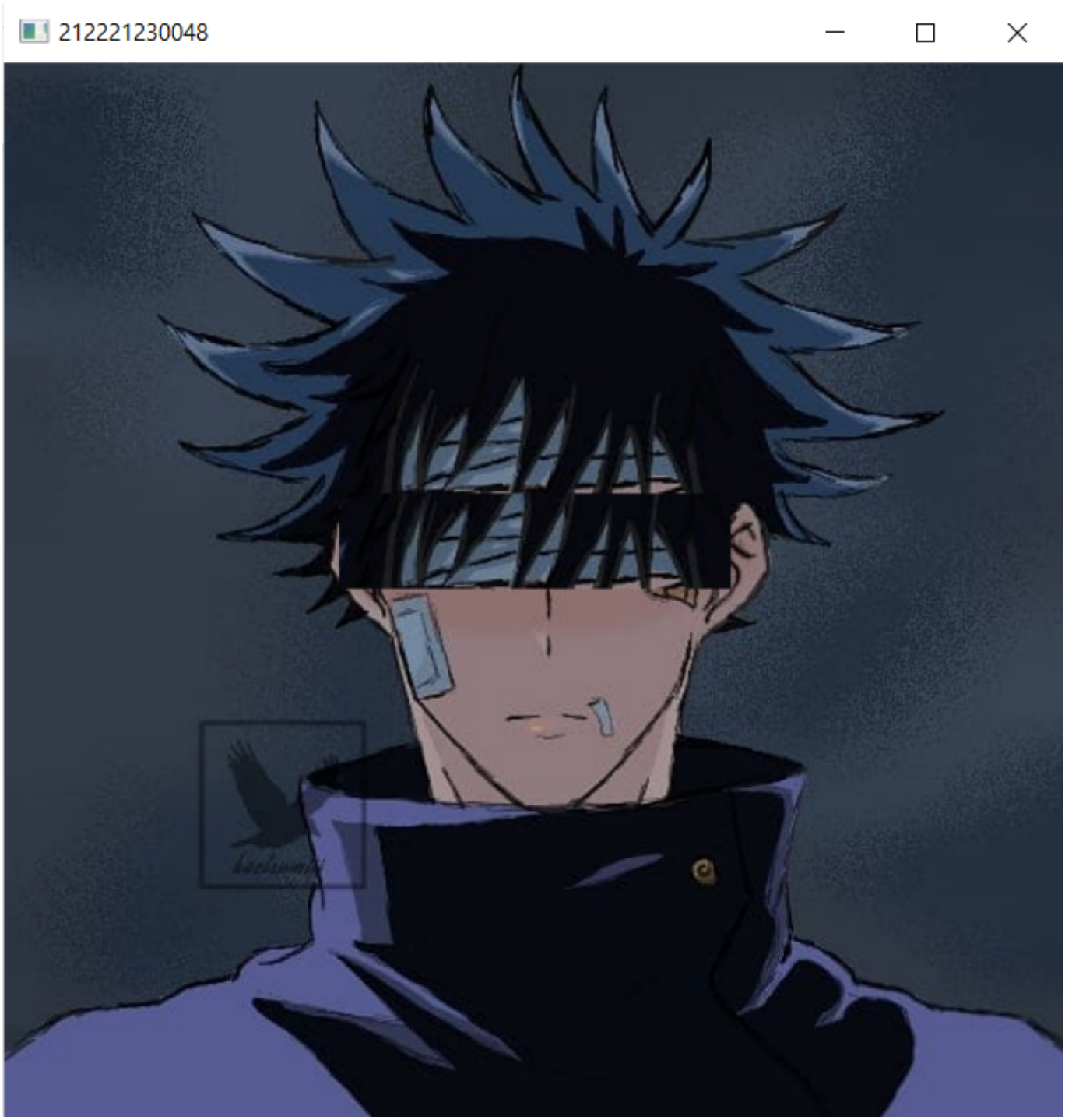
In [5]:
```
print(img.shape)
print(img2.shape)
```

```
(544, 544, 3)
(544, 544)
```

iv)Access rows and columns



v)Cut and paste portion of image



Result:

Thus the images are read, displayed, and written successfully using the python program.