Image to Pencil Sketch with Python

Importing neccesaary Libraries / Packages

```python
In [1]: import cv2
        import numpy as np
        import plotly.express as px
```

Loading Images

```python
In [2]: img = cv2.imread('Samikshaaa.jpg')
        img = cv2.cvtColor(img,cv2.COLOR_BGR2RGB)
```

```python
In [3]: imgs=px.imshow(img)
        #imgs.update_layout(width=990, height=600 ,margin=dict(l=20, r=20, b=10, t=10))
        imgs.update_xaxes(showticklabels=False).update_yaxes(showticklabels=False)
        imgs.show()
```

Resizing Image Shape

```
In [4]: scale_percent = 0.60
```

```
In [5]: width = int(img.shape[1]*scale_percent)
        height = int(img.shape[0]*scale_percent)
```

```
In [6]: dim = (width,height)
        resized = cv2.resize(img,dim,interpolation = cv2.INTER_AREA)
```

```
In [7]: res=px.imshow(resized)
        res.update_xaxes(showticklabels=False).update_yaxes(showticklabels=False)
        res.show()
```

Sharpening Image

```
In [8]: kernel_sharpening = np.array([[-1,-1,-1],
                                      [-1, 9,-1],
                                      [-1,-1,-1]])
        sharpened = cv2.filter2D(resized,-1,kernel_sharpening)
```

```
In [9]: sharp=px.imshow(sharpened)
        sharp.update_xaxes(showticklabels=False).update_yaxes(showticklabels=False)
        sharp.show()
```

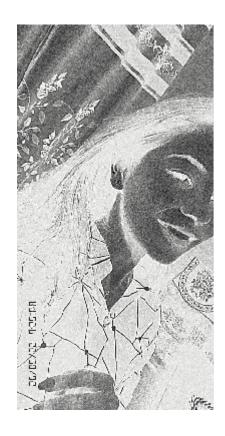# Converting an image into gray_scale image

In [10]:
```python
grayscale = cv2.cvtColor(sharpened , cv2.COLOR_BGR2GRAY)
```

In [11]:
```python
gray = px.imshow(grayscale, color_continuous_scale='gray')
gray.update_xaxes(showticklabels=False).update_yaxes(showticklabels=False)
gray.show()
```

Inverting the Image

In [12]:
```python
invs = 255-grayscale
```

In [13]:
```python
inv=px.imshow(invs,color_continuous_scale='gray')
inv.update_xaxes(showticklabels=False).update_yaxes(showticklabels=False)
inv.show()
```

Smoothing the Image

```
In [14]: gauss = cv2.GaussianBlur(invs,ksize=(15,15),sigmaX=0,sigmaY=0)
```

```
In [15]: gaus=px.imshow(gauss,color_continuous_scale='gray')
         gaus.update_xaxes(showticklabels=False).update_yaxes(showticklabels=False)
         gaus.show()
```

Obtaining the Final Sketch

```
In [16]: def dodgeV2(image,mask):
             return cv2.divide(image,255-mask,scale=256)

         pencil_img = dodgeV2(grayscale,gauss)
```

```
In [17]: sketch=px.imshow(pencil_img,color_continuous_scale='gray')
         #sketch.update_layout(width=990, height=600 ,margin=dict(l=20, r=20, b=10, t=10))
         sketch.update_layout(coloraxis_showscale=False)
         sketch.update_xaxes(showticklabels=False).update_yaxes(showticklabels=False)
         sketch.show()
```

THANK YOU !