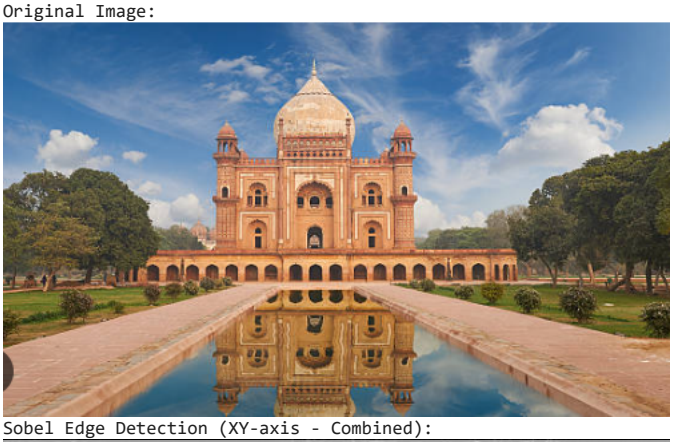
```
import cv2
import numpy as np
from google.colab import files
from google.colab.patches import cv2_imshow

uploaded = files.upload()
image_path = next(iter(uploaded))
image = cv2.imdecode(np.frombuffer(uploaded[image_path], np.uint8), cv2.IMREAD_COLOR)

gray = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)

sobel_x = cv2.Sobel(gray, cv2.CV_64F, dx=1, dy=0, ksize=3)
sobel_y = cv2.Sobel(gray, cv2.CV_64F, dx=0, dy=1, ksize=3)

sobel_xy = cv2.magnitude(sobel_x, sobel_y)
sobel_xy = cv2.convertScaleAbs(sobel_xy)

print("Original Image:")
cv2_imshow(image)

print("Sobel Edge Detection (XY-axis - Combined):")
cv2_imshow(sobel_xy)
```

Choose Files i19.PNG

- **i19.PNG**(image/png) - 396981 bytes, last modified: 5/7/2025 - 100% done

```
Saving i19.PNG to i19.PNG
Original Image:
```



```
Sobel Edge Detection (XY-axis - Combined):
```