```python
# Name : Abishek PV
# Reg No : 212222230003
# Experiment-6 : Edge Detection – Sobel, Laplacian, Canny

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

# ----------------- Upload Image in Google Colab -----------------
uploaded = files.upload()

# Get the uploaded image filename
filename = next(iter(uploaded))

# Read the image
image = cv2.imread(filename)

if image is None:
    raise ValueError("Image not found. Upload a valid file.")

# ----------------- Convert to grayscale -----------------
gray = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)

# ----------------- Sobel Edge Detection -----------------
sobelx = cv2.Sobel(gray, cv2.CV_64F, 1, 0, ksize=3)
sobely = cv2.Sobel(gray, cv2.CV_64F, 0, 1, ksize=3)
sobel_combined = cv2.magnitude(sobelx, sobely)
sobel_combined = cv2.convertScaleAbs(sobel_combined)

# ----------------- Laplacian Edge Detection -----------------
laplacian = cv2.Laplacian(gray, cv2.CV_64F)
laplacian = cv2.convertScaleAbs(laplacian)

# ----------------- Canny Edge Detection -----------------
canny = cv2.Canny(gray, 100, 200)

# ----------------- Print Details -----------------
print("Name : Abishek PV")
print("Reg No : 212222230003")

# ----------------- Display Output -----------------
print("Original Image")
cv2_imshow(image)

print("Sobel X")
cv2_imshow(cv2.convertScaleAbs(sobelx))

print("Sobel Y")
cv2_imshow(cv2.convertScaleAbs(sobely))

print("Sobel Combined")
cv2_imshow(sobel_combined)

print("Laplacian")
cv2_imshow(laplacian)

print("Canny")
cv2_imshow(canny)
```
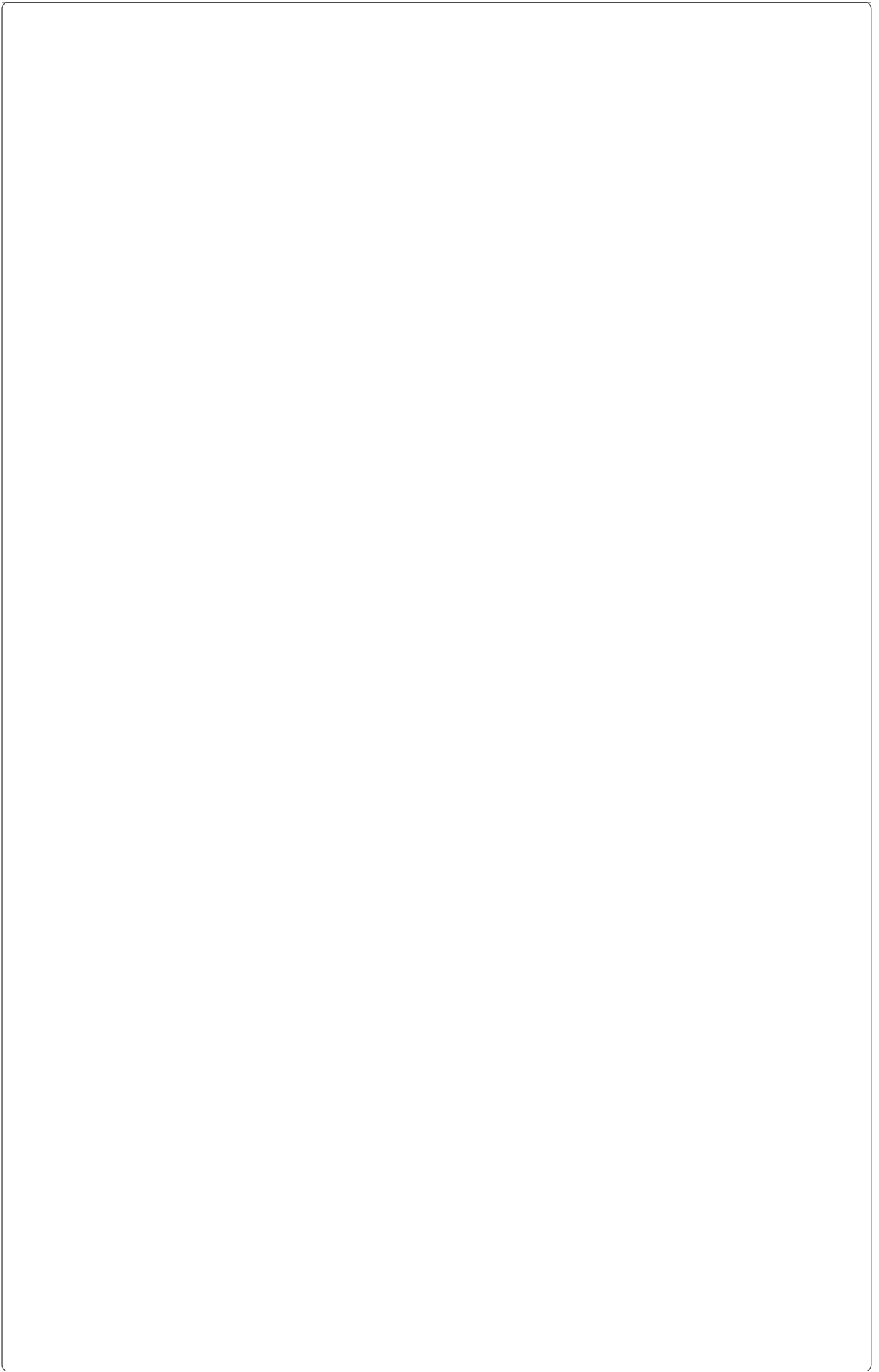
Name : Abishek PV

Reg No : 212222230003

Original Image

Sobel X

Sobel Y