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BSCS-4A

MP2-Image Processing Techniques

Load Required Libraries and Images

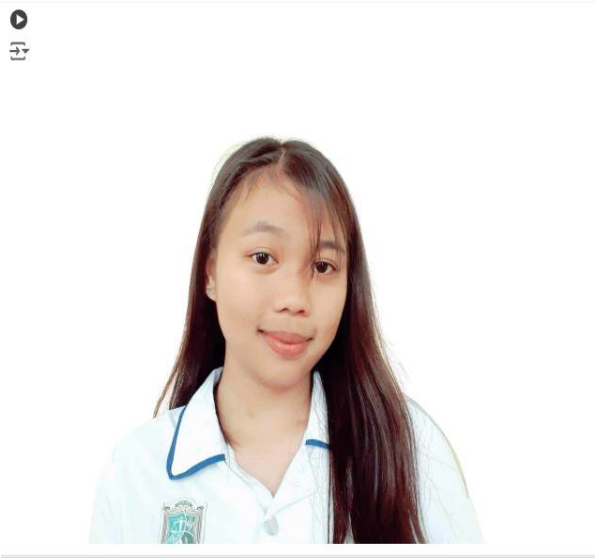
```
import cv2
from google.colab.patches import cv2_imshow

# Load an image
img = cv2.imread('/content/MENDOZA.png')
```

Apply Scaling

```
# Scaling the image by a factor of 1 (100%)
scaled_img = cv2.resize(img, None, fx=1, fy=1,
interpolation=cv2.INTER_LINEAR)

# Show the scaled image
cv2_imshow(scaled_img)
```



Apply Rotation

```
# Get the dimensions of the image
(h, w) = img.shape[:2]
```

```
# Define the center of rotation
center = (w // 2, h // 2)

# Apply rotation of 45 degrees
rotation_matrix = cv2.getRotationMatrix2D(center, 35, 1.0)
rotated_img = cv2.warpAffine(img, rotation_matrix, (w, h))

# Show the rotated image
cv2_imshow(rotated_img)
```

Apply Blurring

```
# Apply Gaussian blur
blurred_img = cv2.GaussianBlur(img, (15, 15), 0)

# Show the blurred image
cv2_imshow(blurred_img)
```

Apply Edge Detection

```
# Convert the image to grayscale
gray_img = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)

# Apply Canny edge detection
edges = cv2.Canny(gray_img, 100, 200)

# Show the edges
cv2_imshow(edges)
```