



Process Automation Engineering
Image Processing
Laboratory Work 1

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Task 1: Read and Display an Image

Code:

```
1 from PIL import Image
2 # Task 1: Read and Display an Image
3 img = Image.open('solo_turk.jpeg')
4 img.show()
```

Result:



Original Image

Task 2: Print Details about the Image

Code:

```
1 # Task 2: Print Details about the Image
2 print(f"Format of the Image: {img.format}")    # Format
3 print(f"Mode of the Image: {img.mode}")        # Mode
4 print(f"Size of the Image: {img.size}")        # Size
```

Result:

Format of the Image: JPEG
Mode of the Image: RGB
Size of the Image: (1200, 640)

Task 3: Change Image Type (JPEG to PNG)

Code:

```
1 # Task 3: Change the Image Type (JPEG -> PNG)
2 img.save("solo_turk.png")
```

Result:



Image Saved as PNG

Task 4: Resize Image

Code:

```
1 # Task 4: Resize the Image
2 resized = img.resize((200, 200))
3 resized.show()
4 resized.save("solo_turk_resized.png")
```

Result:



Resized Image (200x200)

Task 5: Crop Image

Code:

```
1 # Task 5: Crop the Image
2 cropped = img.crop((100, 200, 300, 400)) # (left, upper, right,
3     lower)
4 cropped.show()
4 cropped.save("solo_turk_cropped.png")
```

Result:



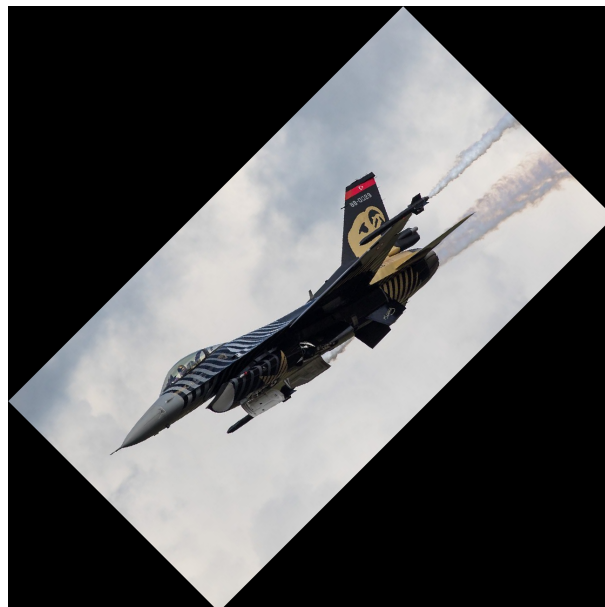
Cropped Image

Task 6: Rotate Image

Code:

```
1 # Task 6: Rotate the Image
2 rotated = img.rotate(45, expand=True)
3 rotated.show()
4 rotated.save("solo_turk_rotated.png")
```

Result:



Rotated Image (45 degrees)

Task 7: Mirror Image

Code:

```
1 # Task 7: Mirror the Image (left <-> right)
2 mirrored = img.transpose(Image.FLIP_LEFT_RIGHT)
3 mirrored.show()
4 mirrored.save("solo_turk_mirrored.png")
```

Result:



Mirrored Image (Horizontal Flip)

Task 8: Flip Image

Code:

```
1 # Task 8: Flip the Image (top <-> bottom)
2 flipped = img.transpose(Image.FLIP_TOP_BOTTOM)
3 flipped.show()
4 flipped.save("solo_turk_flipped.png")
```

Result:



Flipped Image (Vertical Flip)