



Baku Higher Oil School

Image Processing

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Lab work 1. Working with Images

In this project, eight different operations were performed on a single image using the Python Pillow library. Pillow can be installed from the command line by using the command `pip install pillow`. After installation, the library can be imported in Python to work with images.

In this lab the photo of the tree was used.

1. First, the image was opened from a file and displayed.



2. Its format, mode, and size were printed for detailed information.

```
IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Python 3.11.5 (tags/v3.11.5:cce6ba9, Aug 24 2023, 14:38:34) [MSC v.1936 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\User\Desktop\Lab1.py =====
Format: JPEG
Mode: RGB
Size: (640, 359)
>>>
```

3. The image was then saved again in its original format.

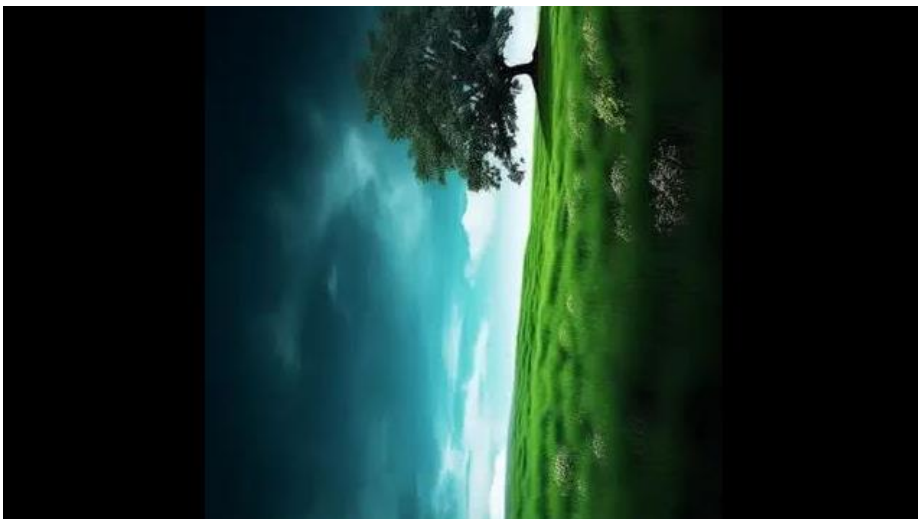
4. Afterwards, the image was resized to 300×200 pixels and stored as a new file.



5. A cropped rectangular region was created from the image and saved separately.



6. The image was rotated by 90 degrees to change its orientation.



7. A mirror version of the image was produced by flipping it from left to right.



8. Finally, the image was flipped upside down to generate a top-to-bottom version.

