WOMEN WHO CODE PYTHON

✨Python Libraries 101✨
Session 9

Hi, we are

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WOMEN WHO CODE PYTHON

Our Mission

Inspiring women to excel in technology careers.

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Our Vision

A world where diverse women are better represented as engineers and tech leaders

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Our Target

Engineers with two or more years of experience looking for support and resources to strengthen their influence and levelup in their careers.

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Code of Conduct

WWCode is an inclusive community, dedicated to providing an empowering experience for everyone who participates in or supports our community, regardless of gender, gender identity and expression, sexual orientation, ability, physical appearance, body size, race, ethnicity, age, religion, socioeconomic status, caste, creed, political affiliation, or preferred programming language(s).

Our events are intended to inspire women to excel in technology careers, and anyone who is there for this purpose is welcome. We do not tolerate harassment of members in any form. Our Code of Conduct applies to all WWCode events and online communities.

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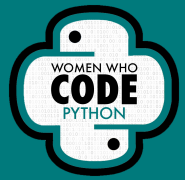
Soumya Vemuri

Computer Science and Engineering Major

Lead at Women Who Code Python

Today's Agenda

1. Image Processing and Pillow
2. Pillow
    a. About Pillow and Syntax
    b. PIL.Image functions
3. QnA
4. Let's Code!



Introduction

Image Processing

- Image processing is a method of analyzing and manipulating digital images.
- The main goal is to extracting some information that can be used somewhere else.
- Python Imaging Library (expansion of PIL) is the image processing package for Python language.

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Python Imaging Library (PIL)

- PIL incorporates lightweight image processing tools that aids in editing, creating and saving images.
- Support for Python Imaging Library was discontinued in 2011, but a project named Pillow forked the original PIL project and added Python3 support to it.
- Pillow was announced as a replacement for PIL for future usage and supports a range of image file formats including BMP, PNG, JPEG, and TIFF.

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Pillow

Pillow

- An imaging library that provide functions for manipulating various image file formats
- Provides a number of factory functions such as load images and create new image

Syntax

pip install pillow

from PIL import Image

Basic Functions

- image.open() - opens and identifies the given image file
- image.show() - displays the image
- image.save() - saves the image under a given filenames
- image.resize() - resizes the image to specified shape
- image.convert() - returns a converted copy of the image with specified mode

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Image Features

- image.format() - shows format of the image
- image.mode() - shows mode of the image (e.g. RGB, grayscale, L)
- image.size() - shows size of the image in W x H pixels
- image.getpalette() - return the image palette as a list

Manipulating Images

- image.rotate()- rotates the image by specified angle
- image.transpose()- flips the image
- image.thumbnail() - modifies the image to contain a thumbnail version of itself

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Manipulating Images

- image.filter(ImageFilter.BLUR) - blurs the image
  - ImageFilter.BoxBlur(radius)
  - ImageFilter.GaussianBlur(radius=2)
  - image.filter(CONTOUR), image.filter(DETAIL), img.filter(SMOOTH), img.filter(SHARPEN)

- ImageDraw.Draw.text() - adds text to an image
  - ImageDraw.Draw.line, ImageDraw.Draw.multiline_text

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QnA Time!

Let's Code!

References

- https://www.javatpoint.com/python-pillow
- https://www.tutorialspoint.com/python_pillow/python_pillow_quick_guide.htm
- Our Github Repo: https://github.com/WomenWhoCode/WWCodePython/tree/master/Python%20Libraries%20Series

Upcoming Events

SAT 16 OCT	Python Libraries 101 *Featured, Recurring* Online | Python | 7:30 PM - 8:30 PM IST (UTC+0530)	Register
TUE 19 OCT	Less Is More: How to Code Python in One Line *Featured* Online | Python | 9:30 AM - 11:00 AM IST (UTC+0530)	Register
FRI 22 OCT	LeetCode Series Study Group *Featured, Recurring* Online | Python | 5:30 AM - 7:00 AM IST (UTC+0530)	Register
SAT 23 OCT	Bytes n' Brew I Online | Python | 12:30 PM - 1:30 PM IST (UTC+0530)	Register

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Thank you!

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Let us know how we're doing!