Tutorial 1 - How to read and display image in Python

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1 Reading Image Using OS, OpenCV, and Matplotlib

1.1 Importing Required Libraries

[1]:
```
import os
import cv2
import matplotlib.pyplot as plt
```

1.2 Setting the Path of the Image

You can use the `os.path.join()` method to join the current working directory with the path of the image.

`os_path.join(first_path, second_path)`

This method can be used to join the current working directory with the path of the image. - `first_path` is the current working directory. - `second_path` is the path of the image.

[2]:
```
path = os.path.join(os.getcwd(), '../assets/images/parrot.jpg')
```

1.3 Reading the Image from the Path

You can use the `cv2.imread()` method to read the image from the path.

`cv2.imread(path)`

This method takes one argument: - `path` is the path of the image.

[3]:
```
image = cv2.imread(path)
```

1.4 Converting the Image to RGB

By default, OpenCV reads the image in the BGR format. You can convert the image to the RGB format using the `cv2.cvtColor()` method.

`image = cv2.cvtColor(image, conversion_code)`

The `cv2.cvtColor()` method takes two arguments: - `image` is the image that you want to convert. - `conversion_code` is the code that you want to convert the image to.

In this case, you can convert the image to the RGB format using the `cv2.COLOR_BGR2RGB` code.

[4]:
```
image = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)
```

1.5 Displaying the Image using Matplotlib

You can use the `plt.imshow()` method to add the image to the plot.

`plt.imshow(image)`

This method takes one argument: - `image` is the image that you want to display.

You can use the `plt.axis('off')` method to remove the axis from the plot.

`plt.axis('off')`

This method takes one argument: - `'off'` is the value that you want to set the axis to.

Finally, you can use the `plt.show()` method to display the plot.

`plt.show()`

[5]:
```
plt.imshow(image)
plt.axis('off')
plt.show()
```

1.6 Full Code

[6]:
```
import os
import cv2
import matplotlib.pyplot as plt

path = os.path.join(os.getcwd(), '../assets/images/parrot.jpg')

image = cv2.imread(path)

image = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)

plt.imshow(image)
plt.axis('off')

plt.show()
```