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Code Explanation for Displaying an image using OpenCV

1. Import Required Libraries
import matplotlib.pyplot as plt
import cv2
2. Read Image Using OpenCV
image = cv2.imread('C:/Users/asus/Desktop/Tuwaiq Academy/Dr. Afshan/horse.jpg')
//Loads the image from the given path.
3. Error Handling for Image Load
if image is None: print("Error: Could not load image.")
//Checks if the image was loaded successfully.
4. Convert Image from BGR to RGB
image_rgb = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)
//Converts the image color format from BGR (used by OpenCV) to RGB (used by Matplotlib).
5. Display Image using Matplotlib
plt.imshow(image_rgb) plt.axis('off') # Removes axes for cleaner view
plt.show()
//Displays the image without axes.

Output

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1. **Importing Libraries:**

   matplotlib.pyplot (as plt) is used for plotting and displaying the image.

   cv2 (OpenCV) is used for reading and processing the image.

2. **Reading the Image:**

   image = cv2.imread('C:/Users/asus/Desktop/Tuwaiq Academy/Dr. Afshan/horse.jpg') loads the image from the specified path.

   If the image cannot be loaded (e.g., due to an incorrect path or missing file), an error message is printed: print("Error: Could not load image.")

3. **Converting Color Format:**

   Images loaded using OpenCV are in BGR format (Blue, Green, Red). Since **Matplotlib** expects RGB (Red, Green, Blue) format for displaying colors correctly, the code converts the image using:

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

4. **Displaying the Image:**

   plt.imshow(image_rgb) displays the image in a Matplotlib window.

   plt.axis('off') removes the axes from the image display (so only the image itself is shown).

   plt.show() displays the image.