**Open cv task**

Task: Implement all the topics/functions of OpenCV, in a notebook file (ipynb file)

**Key OpenCV Functions Used:**

**Image Loading & Display:**

cv2.imread (Loads an image)

cv2.imshow (Displays an image)

cv2.destroyAllWindows (Closes display windows)

cv2.waitKey (Waits for a key press)

**Image Filtering & Smoothing:**

cv2.GaussianBlur

cv2.medianBlur

cv2.blur

cv2.bilateralFilter

**Drawing Operations:**

cv2.circle

cv2.line

**Transformations & Resizing:**

cv2.resize

cv2.warpAffine

cv2.split (Splitting color channels)

**Video Processing:**

cv2.VideoCapture (Reads video frames)

cv2.createBackgroundSubtractorMOG2 (Background subtraction)

**Color Conversions:**

cv2.cvtColor

cv2.COLOR\_BGR2RGB

cv2.COLOR\_BGR2GRAY

**Hough Transform for Circle Detection:**

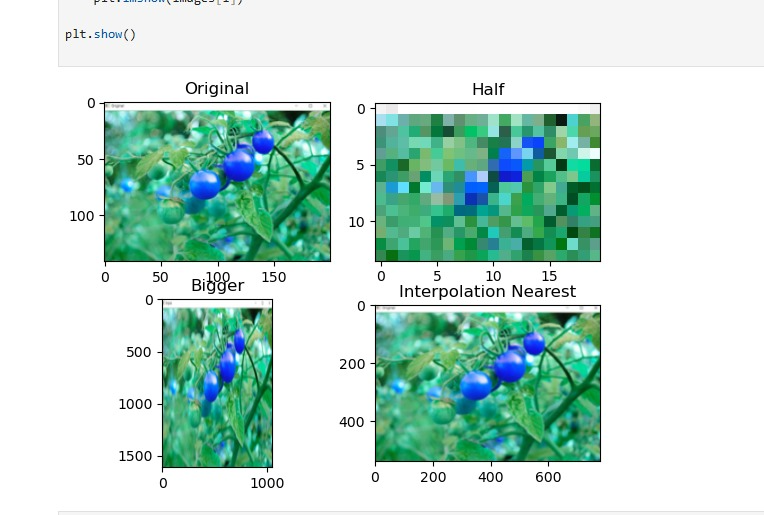
cv2.HoughCircles

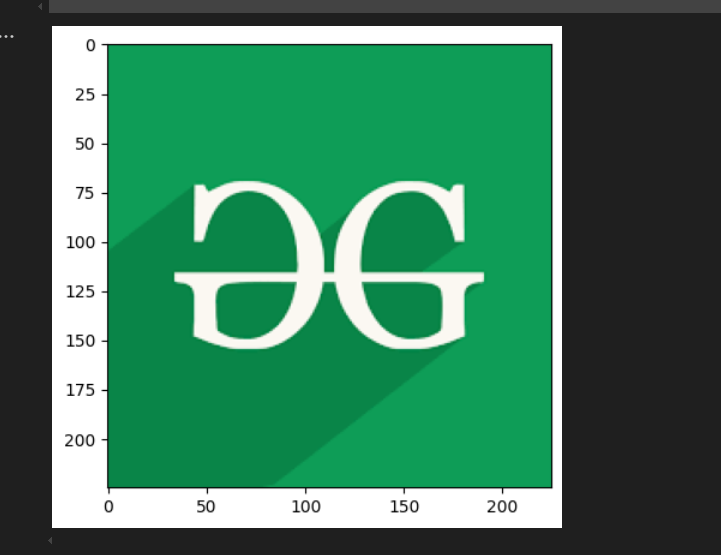
cv2.HOUGH\_GRADIENT

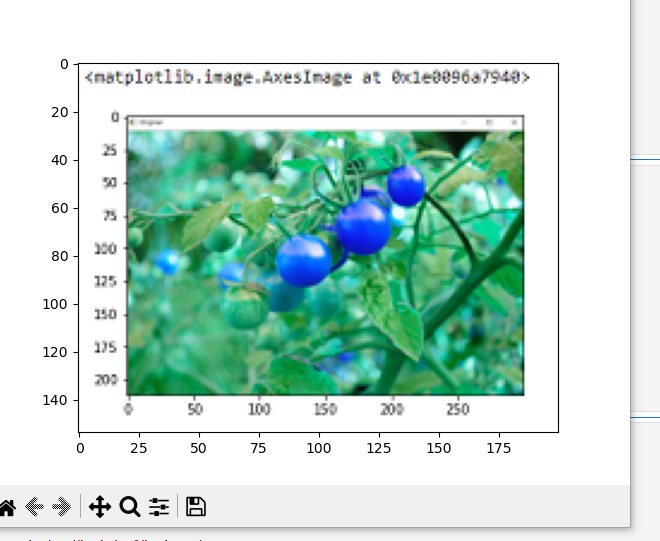
**Conclusion:**

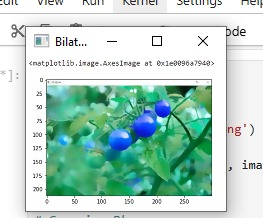
focuses on loading and displaying images, applying various filters, performing transformations, drawing basic shapes, and processing video streams. It does not seem to include edge detection, thresholding, or feature detection techniques.

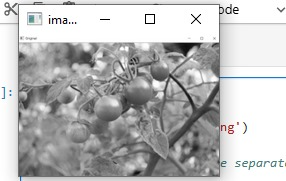
**Outputs:**

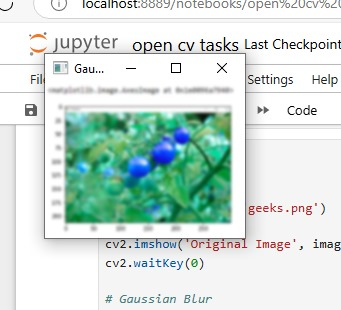
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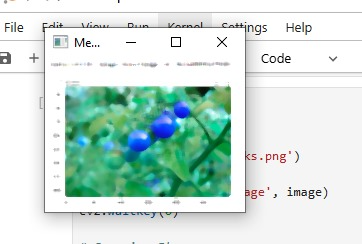
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