Introduction.

1. Network credentials: `Laboratorium-IoT /`
2. Github repository - github.com/tocet/prog_devices
3. Py codes - `ex04_opencv.zip`

Task 1. Image scaling - `ex04_t01_images.py`.

Install OpenCV on Raspberry Pi:

randomnerdtutorials.com/install-opencv-raspberry-pi/

```
import cv2

img = cv2.imread("images/garfield.jpg")

cv2.imshow("Garfield the Cat",img)

def scale_image(img, scale = 0.5):
    h = int(img.shape[0] * scale)
    w = int(img.shape[1] * scale)
    dimensions = (w,h)
    return cv2.resize(img,dimensions,scale,interpolation =
                      cv2.INTER_AREA)

cv2.imshow("Scale Image",scale_image(img))

cv2.waitKey(0)

cv2.destroyWindow("Garfield the Cat")
cv2.destroyWindow("Scale Image")
```

Task 2. Texts and drawings - `ex04_t02_draw_and_text.py`.

Task 3. Image transformations - `ex04_t03_img_transformations.py`.

Task 4. Contours - `ex04_t04_contours.py`.

Task 5. Hello Pi camera - `ex04_t05_camera_test.py`.

Task 6. Pi camera meets Tkinter - `ex04_t06_camera_tkinter.py`.

Task 7. Create a photo booth prototype.

- (0.1 points) an image should be visible in the main window;
- (0.2 points) add 3 buttons - Take Photo, Delete Photo, Save Photo;
- (0.1 points) add a widget to place user-defined text in the picture;
- (0.1 points) add a widget for setting the photo rotation angle;
- (0.2 points) user should be able to define filename;
- (0.3 points) add an option to place humorous elements on the image, e.g. horns.

For those interested:

1. Pillow documentation:

   pillow.readthedocs.io/en/stable/

2. OpenCV webpage:

   opencv.org

3. OpenCV Tutorial in Python:

   www.geeksforgeeks.org/opencv-python-tutorial/

4. 10 GitHub Repositories to Master Computer Vision:

   www.kdnuggets.com/10-github-repositories-to-master-computer-vision