## Homework 1 (issued March 13th, due on April 1ˢᵗ, 2025, 11 p.m)

# Topic: Object recognition in images
# Objective: Reconstruction of fish trajectory in fish tank, in response to light stimulation

Given is a sequence of 304 frames from a movie, and a python script (`imageanalysis_part2.py`) in folder Homework1: TaskDescription.

SCRIPTING TASK
**Complete** the script so that you loop over all frame of the image sequence and each time extract the region_properties of the labeled object (i.e., ideally of the fish). Make sure that you apply sensible selection criteria ("mask") to identify the putative fish.

Before plotting the trajectory ( vertical position of fish in tank vs. frame # ) make sure you **verify** the trajectory, in particular, remove "false discoveries" (object matching the selection criteria, but which is not the fish).

**Plot trajectory** ideally highlight the light-on phases.
Save plot as PNG and upload as Surname_ID_plot.png

hint: in case more labelled objects meet your criteria, then typically none of them is the fish.

Please upload your python file and the plot output file into the Homework2:UploadFolder.
Please stick to the following naming  convention

Surname_nn_task.py ( or .ipynb)          or: Team_Surname1_Surname2_task.py ( or .ipynb)
Surname_ID_plot.png                            or: Team_Surname1_Surname2_plot.png

Do not upload the mnist files.