Task Document (Detailed Instructions)

Title: *Trout Egg Counting Challenge*

Overview:
You are provided with a single image: a set of trout eggs placed on a white tray, alongside a coin and a ruler for reference. Your goal is to detect and count all the eggs in the image.

Objectives:

1. **Accurate Detection & Counting:**

   ○ Identify each egg clearly, accounting for partial overlaps or shadows if any.
   ○ Provide the total count of detected eggs.

2. **Method Explanation:**

   ○ Write a brief (1–2 paragraphs) explanation of your chosen technique.
   ○ Mention the tools/libraries used (e.g., OpenCV for thresholding, YOLO for object detection, or any other approach).

3. **Deliverables:**

   ○ A **short README** describing your approach (how it works, any assumptions, any edge cases).
   ○ Your **source code** (scripts, notebooks, etc.) so we can review or run it.
   ○ The **final numeric count** of how many eggs you detected.

Suggested Approaches (Pick Any):

- **Classical Image Processing** (e.g., thresholding, contour detection, morphological operations).
- **Deep Learning / Object Detection** (e.g., YOLO, Faster R-CNN) if you have an existing setup.
- **Hybrid** (e.g., background subtraction + shape analysis).

Timeframe:
We expect this task to be completed within three days. Please focus on a straightforward prototype rather than a fully productionized system.

Tips:

- Pay attention to the uniform background and lighting.
- Consider simple image preprocessing to enhance contrast.
- The coin and ruler are there to help with scale, but using them is optional unless you want to do size-based validation.

Submission Format:

- **README / short PDF** summarising your approach.
- **Source code** in a zip file or shared repository link.
- **Output**: the final egg count.