Task

**Objective:**

 Given a CCTV camera video, detect persons and capture their images if they fall in ROI.

**Given Input:**

* You’re given the following ([here](https://drive.google.com/drive/u/1/folders/1MuDvvDqpoEZAbk_CF5l8gMDwwc5Vi0-h)):

1. A JSON file containing normalized coordinates for two regions of interest(ROI).
2. A video file of pedestrians moving about in an area.

**Solution's Expected Results:**

* It should take a test video and a bounding box in a Json file(top left, top right, bottom left, bottom right) as input.
* It should perform detection of pedestrians and capture their images if they fall in the region of interest(bounding box mentioned above).
* Redact the faces of people that are not in the ROI.
* The solution should save an output video to a file with ROI and redaction.

**Bonus Task:**

* Track pedestrians and determine where they left from the region of interest(ROI).

**Evaluation Criteria:**

* Approach to solving the solution and evaluation on our test video.
* FPS at which a video is processed by the solution.
* Documentation.

**APPROACH**

There are several steps that can be taken to detect persons in a CCTV camera video and capture their images if they fall within a designated region of interest (ROI):

* Use computer vision techniques such as background subtraction or object detection algorithms to identify and locate persons in the video.
* Define the ROI by specifying the coordinates of the region on the video frame.
* For each person identified in the video, check if their bounding box (the rectangular area around the person in the video) intersects with the ROI.
* If the bounding box intersects with the ROI, capture an image of the person and store it for later use.
* Repeat the process for each frame of the video.

There are multiple libraries and packages available for computer vision like OpenCV, Tensorflow, etc. that can be used to implement these steps.