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# Q1: Follow the given to achieve the final result.

### Dataset Creation:

* + - Capture 5 images of your face and 5 images of your face with other objects.
    - Take 5 pictures of different objects excluding the face (e.g., hand on face, mobile with ear).
    - Store these images in the "imagesX" folder.
    - Within the "imagesX" folder, create three subfolders labeled "non-cheating," "cheating," and "differentX."

### For Yolo model and custom code implementation and annotation:

Utilize the Yolo model to detect objects in the images.

* + - If both a face and an object are detected in the same image, store it in the "cheating" folder.
    - Develop code to check if an image contains only a face, and if so, store it in the "non- cheating" folder.
    - Apply the Yolo model again to identify images with objects but no face, and save them in the "differentX" folder.

### To provide annotation verification:

* + - Include markdown in jupyter to indicate the correctness of the annotations.
    - Keep track of the number of correct and incorrect labels resulting from the Yolo model's previous steps.
    - If Yolo made any mistakes, specify the correct label and mention that it was misplaced.
    - Make bar chart for this.

### Data Augmentation:

In order to expand the sample size, we need more sample photos, but we only have less. Therefore, data augmentation methods must be used to produce new variants of already existing photos.

* + - You have to apply 5 methods to increase sample size.
    - For each method, write code and apply them to images:
    - Create a new folder named "AugImagesX."
    - Add three subdirectories within the "AugImagesX" folder as mentioned above ("non- cheating," "cheating," and "different”) and include the original images.

### Model Building:

* + - Using VIT (Vision Transformer) for image classification:
    - Utilize the VIT model for classifying images to determine if cheating is present or not and differentX.