Assignment III:

In this assignment, you will be training a **YOLOv7** model on images scrapped from Bing Image Library and annotated using **LabelImg** in **YOLO** format. This task involves the following steps:

1. **Scraping Images from Bing:** First, you need to scrape a sufficient number of images from Bing Image Library to train your YOLOv7 model. To do this, you can use a web scraping tool such as bing-image-downloader. You should aim to scrape at least 100 images for training and 25 images for validation.

2. **Annotating Images Using LabelImg:** Once you have scraped the images, you need to annotate them using LabelImg. LabelImg is a popular annotation tool that supports YOLO format. To annotate images in YOLO format using LabelImg.

3. **Preparing Data for Training:** After annotating the images, you need to prepare the yaml file for your custom dataset, use coco.yaml as an example.

4. **Training the YOLOv7 Model:** Once the data is prepared, you can begin training the YOLOv7 model. You can use the train.py script provided by the YOLOv7 repository to train the model. You will need to configure the training parameters such as the number of epochs, learning rate, batch size, etc. to achieve good performance.

5. **Evaluating the Trained Model:** Once the model is trained, you need to evaluate its performance on a validation set. You can use the test.py script provided by the YOLOv7 repository to evaluate the model. The script will output the mean Average Precision (mAP) and other evaluation metrics.

HELP: These articles will help you https://machinelearningprojects.net/train-yolov7-on-the-custom-dataset/ and https://blog.paperspace.com/train-yolov7-custom-data/

Submission Guidelines:

Your submission should include the following:

1. A Python script for scraping images from Bing Image Library.
2. A report detailing the model's performance on the training and validation set.
3. The best output model ‘best.pt’.

**** Submission Notes:** Complete your code and upload the zipped folder to this drive link. The file should contain your name.