CONVERTING DATASETS INTO YOLOv4 FORMAT

MODULE 4 – CUSTOM DATASETS

Download Python Files

Converting in YOLOv4 Format-1

By using already installed OIDv4 toolkit in previous lecture, download images for training with following steps.

In Command Prompt and go to the directory with OIDv4 toolkit.

```
dir
```

It will show all sub-directories you can go in, including OIDv4_ToolKit. Go inside this directory by using following command in Command Prompt

```
cd OIDv4_ToolKit
```

Pay attention, letter K in the name of directory is capital.

List possible options by following command in Terminal (or Anaconda Prompt):

```
python main.py
```

or use detailed explanation of usage by following command:

```
python main.py -h
```

Converting in YOLOv4 Format-2

Download Python files into Custom-Data

Create a folder with name Custom-Data to keep everything organized.

Download the Python files from the Downloads Section and copy them to this folder using the following structure:

Custom-Data/

- *getting-full-path.py*
- *converting-annotations.py*

Converting in YOLOv4 Format-2

Getting full paths – Part 1

Before converting the annotations into YOLOv4 format, we need to find the absolute or full path to the .csv files with annotations and full path to the downloaded images.

Before finding full path to the downloaded images we need to change the name of the folder, replacing gap between words Tennis and ball with underscore. In this way we eliminate future possible mistakes.

Open explorer, find and rename folder

`Coin_Tennis ball_Dice` to `Coin_Tennis_ball_Dice` replacing the gap with _ .

Copy and paste python file getting-full-path.py to the folder with csv files and inside the folder with downloaded images:

- *OIDv4_Toolkit/OID/csv_folder*
- *OIDv4_Toolkit/OID/Dataset/train/Coin_Tennis_ball_Dice*

(yours may be different if you downloaded other classes)

Converting in YOLOv4 Format-2

Getting full paths – Part 2

• Open Command prompt and Go to the directory *OIDv4_Toolkit/OID/csv_folder* and run following command:

```
python getting-full-path.py
```

• Go to the directory OIDv4_Toolkit/OID/Dataset/train/Coin_Tennis_ball_Dice and run the following command:

```
python getting-full-path.py
```

• You should get two full paths like following (yours should be different):

- *C://OIDv4_Toolkit/OID/csv_folder*
- *C://OIDv4_Toolkit/OID/Dataset/train/Car_Bicycle_wheel_Bus*

• Open the Python file converting-annotations.py in your Programming Environment

(Sublime text or other) and assign to the following variables found full paths:

- `full_path_to_csv = ''`
- `full_path_to_images = ''`

Converting in YOLOv4 Format-3

Converting the Annotations

When you have the full paths, it is time for converting:

• Open the Python file **converting-annotations.py** in your Programming Environment

• In the list classes' write the names you downloaded images for (yours maybe different).

Pay attention to the spelling and case. Names have to be the same as in csv file:

labels = ['Coin', 'Tennis ball', 'Coin']

• Run the code

• Open folder with the images and check if *txt annotation* files were created.

Converting in YOLOv4 Format-4

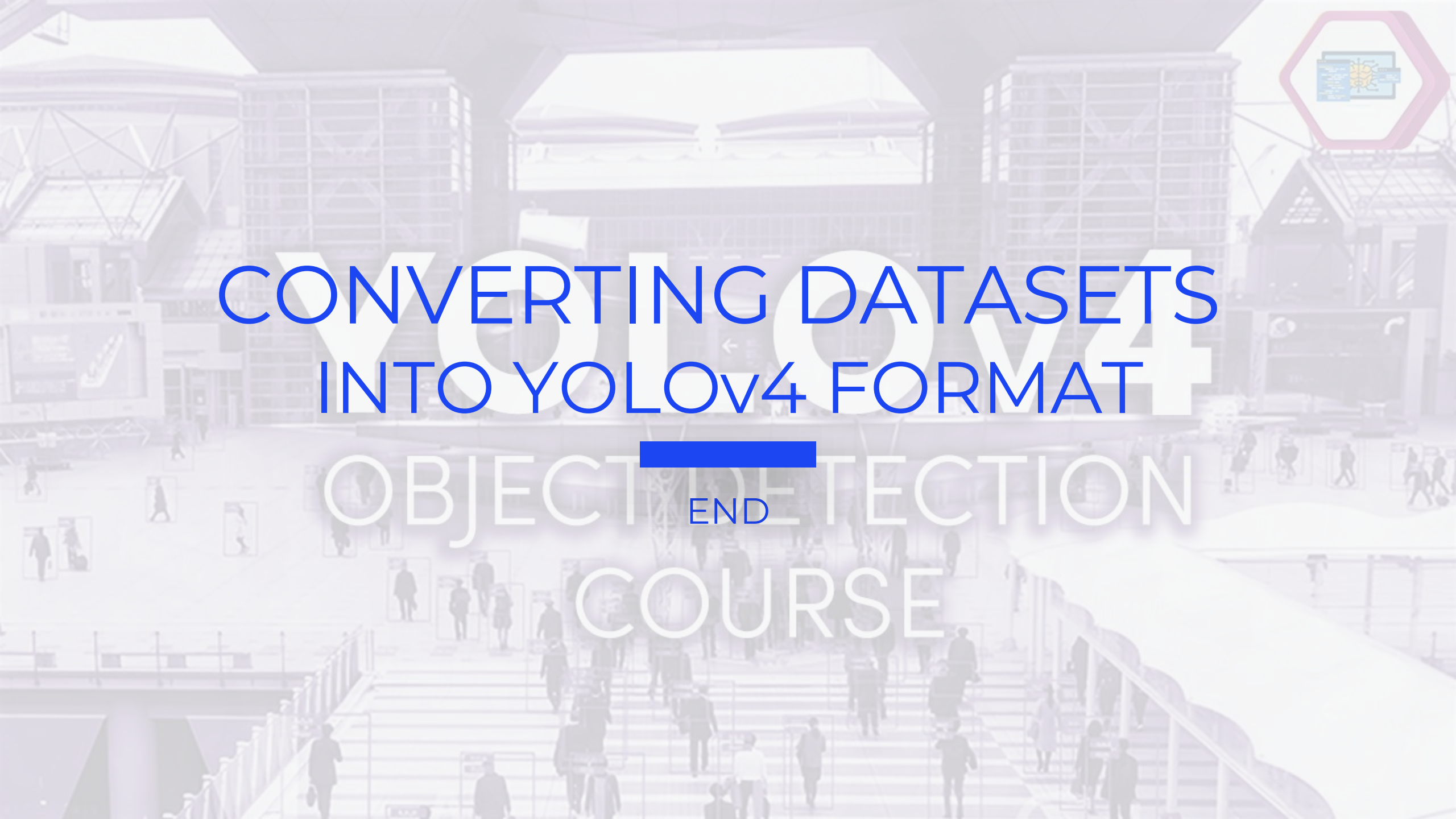
Verify annotations by LabelIMG

After converting annotations into YOLO format, it is possible to check that calculations for bounding boxes were made correctly.

- Open folder with images and the just created txt files with annotations
- Create one more txt file with name classes.txt (use any text editor like notepad++) and in every separate line write classes' names that you downloaded images for (yours can be different): Coin, Tennis Ball, Dice
- Save changes and close the classes.txt file
- Open Command Prompt and Launch LabelIMG

```
python labelImg.py
```

- Go to File --> Reset all (it should close LabelIMG)
- Launch LabelIMG again
- Click on button Open Dir and navigate to the folder with images, annotations in txt files and just created file classes.txt
- By using Next and Previous, check if bounding boxes cover regions with needed objects



CONVERTING DATASETS INTO YOLOv4 FORMAT

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