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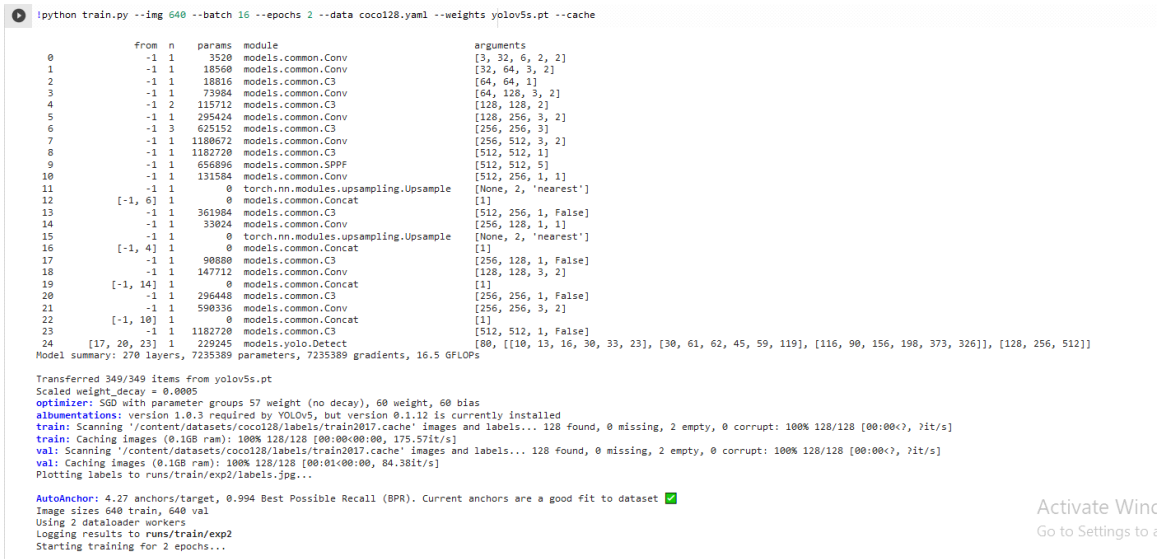
the output of training in screenshoots:



```
!python train.py --img 640 --batch 16 --epochs 2 --data coco128.yaml --weights yolov5s.pt --cache

                from  n    params  module                                  arguments
  0                -1  1      3520  models.common.Conv                      [3, 32, 6, 2, 2]
  1                -1  1     18560  models.common.Conv                      [32, 64, 3, 2]
  2                -1  1     18816  models.common.C3                        [64, 64, 1]
  3                -1  1     73984  models.common.Conv                      [64, 128, 3, 2]
  4                -1  2    115712  models.common.C3                        [128, 128, 2]
  5                -1  1    295424  models.common.Conv                      [128, 256, 3, 2]
  6                -1  3    625152  models.common.C3                        [256, 256, 3]
  7                -1  1   1180672  models.common.Conv                      [256, 512, 3, 2]
  8                -1  1   1182720  models.common.C3                        [512, 512, 1]
  9                -1  1    656896  models.common.SPPF                      [512, 512, 5]
 10                -1  1    131584  models.common.Conv                      [512, 256, 1, 1]
 11                -1  1         0  torch.nn.modules.upsampling.Upsample    [None, 2, 'nearest']
 12          [-1, 6]  1         0  models.common.Concat                    [1]
 13                -1  1    361984  models.common.C3                        [512, 256, 1, False]
 14                -1  1     33024  models.common.Conv                      [256, 128, 1, 1]
 15                -1  1         0  torch.nn.modules.upsampling.Upsample    [None, 2, 'nearest']
 16          [-1, 4]  1         0  models.common.Concat                    [1]
 17                -1  1     90880  models.common.C3                        [256, 128, 1, False]
 18                -1  1    147712  models.common.Conv                      [128, 128, 3, 2]
 19          [-1, 14]  1         0  models.common.Concat                    [1]
 20                -1  1    296448  models.common.C3                        [256, 256, 1, False]
 21                -1  1    590336  models.common.Conv                      [256, 256, 3, 2]
 22          [-1, 10]  1         0  models.common.Concat                    [1]
 23                -1  1   1182720  models.common.C3                        [512, 512, 1, False]
 24      [17, 20, 23]  1    229245  models.yolo.Detect                      [80, [[10, 13, 16, 30, 33, 23], [30, 61, 62, 45, 59, 119], [116, 90, 156, 198, 373, 326]], [128, 256, 512]]
Model summary: 270 layers, 7235389 parameters, 7235389 gradients, 16.5 GFLOPs

Transferred 349/349 items from yolov5s.pt
Scaled weight_decay = 0.0005
optimizer: SGD with parameter groups 57 weight (no decay), 60 weight, 60 bias
albumentations: version 1.0.3 required by YOLOv5, but version 0.1.12 is currently installed
train: Scanning '/content/datasets/coco128/labels/train2017.cache' images and labels... 128 found, 0 missing, 2 empty, 0 corrupt: 100% 128/128 [00:00<?, ?it/s]
train: Caching images (0.1GB ram): 100% 128/128 [00:00<00:00, 175.57it/s]
val: Scanning '/content/datasets/coco128/labels/train2017.cache' images and labels... 128 found, 0 missing, 2 empty, 0 corrupt: 100% 128/128 [00:00<?, ?it/s]
val: Caching images (0.1GB ram): 100% 128/128 [00:01<00:00, 84.38it/s]
Plotting labels to runs/train/exp2/labels.jpg...

AutoAnchor: 4.27 anchors/target, 0.994 Best Possible Recall (BPR). Current anchors are a good fit to dataset ✅
Image sizes 640 train, 640 val
Using 2 dataloader workers
Logging results to runs/train/exp2
Starting training for 2 epochs...
```



```
!python train.py --img 640 --batch 16 --epochs 2 --data coco128.yaml --weights yolov5s.pt --cache
Logging results to runs/train/exp2
Starting training for 2 epochs...

      Epoch   gpu_mem       box       obj       cls    labels  img_size
        0/1        0G   0.04575   0.06644   0.01817       237       640: 100% 8/8 [03:19<00:00, 24.99s/it]
                 Class     Images     Labels          P          R     mAP@.5 mAP@.5:.95: 100% 4/4 [00:52<00:00, 13.04s/it]
                   all        128        929      0.718      0.648      0.716      0.477

      Epoch   gpu_mem       box       obj       cls    labels  img_size
        1/1        0G   0.04513    0.0625   0.01663       168       640: 100% 8/8 [03:09<00:00, 23.70s/it]
                 Class     Images     Labels          P          R     mAP@.5 mAP@.5:.95: 100% 4/4 [00:52<00:00, 13.04s/it]
                   all        128        929      0.771      0.631      0.738      0.495

2 epochs completed in 0.138 hours.
Optimizer stripped from runs/train/exp2/weights/last.pt, 14.9MB
Optimizer stripped from runs/train/exp2/weights/best.pt, 14.9MB
```

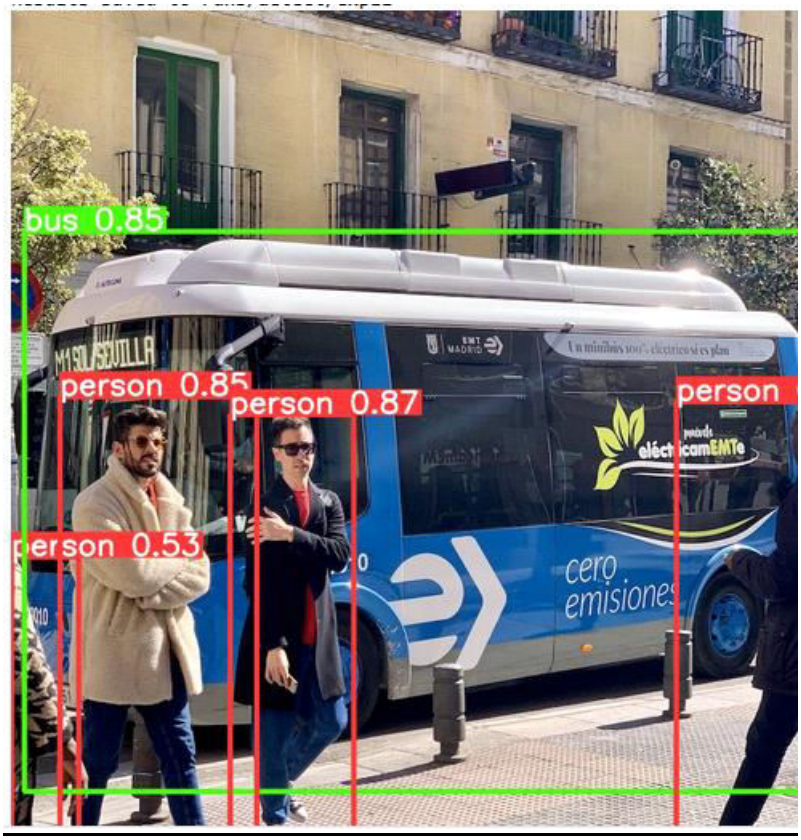
```
!python train.py --img 640 --batch 16 --epochs 2 --data coco128.yaml --weights yolov5s.pt --cache
Fusing layers...
Model summary: 213 layers, 7225885 parameters, 0 gradients, 16.5 GFLOPs
               Class     Images     Labels          P          R     mAP@.5 mAP@.5:.95: 100% 4/4 [00:51<00:00, 12.89s/it]
                 all        128        929      0.773      0.631      0.738      0.496
              person        128        254      0.846      0.669      0.799      0.521
             bicycle        128          6          1      0.567      0.711      0.467
                 car        128         46      0.773      0.435      0.565      0.241
          motorcycle        128          5      0.868        0.8      0.886      0.698
            airplane        128          6      0.957          1      0.995      0.751
                 bus        128          7      0.667      0.714      0.748      0.642
               train        128          3      0.658      0.667      0.863      0.633
               truck        128         12      0.488      0.417      0.476      0.241
                boat        128          6      0.989      0.333      0.418      0.211
       traffic light        128         14      0.612      0.227      0.377      0.225
           stop sign        128          2      0.851          1      0.995      0.796
               bench        128          9      0.604      0.333      0.538      0.226
                bird        128         16      0.972          1      0.995      0.654
                 cat        128          4      0.884          1      0.995      0.797
                 dog        128          9          1      0.664      0.911      0.637
               horse        128          2      0.801          1      0.995      0.672
            elephant        128         17      0.954      0.882      0.932      0.704
                bear        128          1      0.674          1      0.995      0.895
               zebra        128          4      0.873          1      0.995      0.965
             giraffe        128          9      0.782      0.889      0.912      0.738
            backpack        128          6          1      0.654      0.808      0.336
            umbrella        128         18       0.87      0.611      0.879       0.51
             handbag        128         19      0.733      0.158      0.338      0.157
                 tie        128          7      0.866      0.571      0.761      0.428
            suitcase        128          4      0.823          1      0.995      0.569
             frisbee        128          5      0.707        0.8      0.801      0.674
                skis        128          1      0.786          1      0.995      0.304
           snowboard        128          7      0.821      0.857      0.893      0.561
         sports ball        128          6      0.622      0.667      0.602      0.317
                kite        128         10      0.853      0.581      0.655      0.262
        baseball bat        128          4      0.335      0.252      0.406      0.168
      baseball glove        128          7      0.572      0.429      0.471      0.313
          skateboard        128          5          1      0.563      0.781      0.537
       tennis racket        128          7      0.753      0.429      0.509      0.278
              bottle        128         18      0.566      0.333      0.549      0.273
          wine glass        128         16      0.712      0.927      0.888      0.502
                 cup        128         36      0.718      0.722      0.818      0.519
                fork        128          6          1      0.307      0.394      0.276
               knife        128         16      0.816      0.555      0.691      0.436
               spoon        128         22      0.816      0.403      0.565      0.353
                bowl        128         28      0.746      0.631      0.696      0.499
              banana        128          1      0.844          1      0.995      0.302
            sandwich        128          2          1          0       0.62      0.534
              orange        128          4      0.849          1      0.995      0.687
            broccoli        128         11      0.292      0.455      0.426      0.325
              carrot        128         24      0.707        0.5      0.711      0.484
             hot dog        128          2      0.591          1      0.828      0.795
               pizza        128          5      0.819      0.913      0.928      0.668
               donut        128         14      0.709          1      0.967      0.842
                cake        128          4      0.869          1      0.995      0.846
               chair        128         35       0.55      0.595      0.595       0.29
               couch        128          6          1      0.637      0.822      0.526
        potted plant        128         14      0.722      0.786      0.845      0.492
                 bed        128          3          1          0      0.665      0.442
        dining table        128         13      0.604      0.308      0.458      0.366
              toilet        128          2      0.786          1      0.995      0.846
                  tv        128          2      0.696          1      0.995      0.796
              laptop        128          3          1          0      0.806      0.356
               mouse        128          2          1          0      0.112     0.0559
              remote        128          8          1      0.594       0.63      0.514
          cell phone        128          8      0.843      0.375      0.489      0.292
           microwave        128          3      0.791          1      0.995      0.767
                oven        128          5      0.456        0.4      0.425       0.28
                sink        128          6      0.345      0.178       0.33      0.223
        refrigerator        128          5      0.564        0.8      0.759      0.557
                book        128         29      0.697      0.238      0.327      0.162
               clock        128          9      0.622      0.778      0.872      0.731
                vase        128          2      0.521          1      0.995      0.821
           scissors        128          1          1          0      0.497     0.0995
          teddy bear        128         21      0.843      0.511      0.807       0.51
          toothbrush        128          5      0.773      0.693      0.928       0.59
Results saved to runs/train/exp2
```

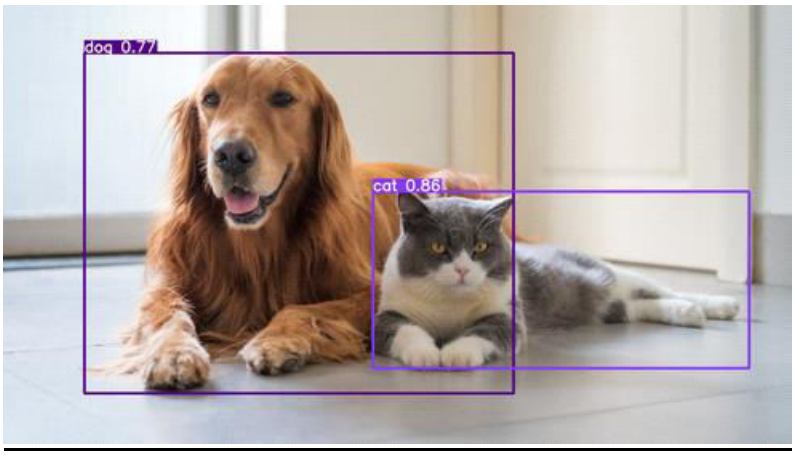
Number of anchors as shown in the first figure:-

- [10,13, 16,30, 33,23]
- [30,61, 62,45, 59,119]

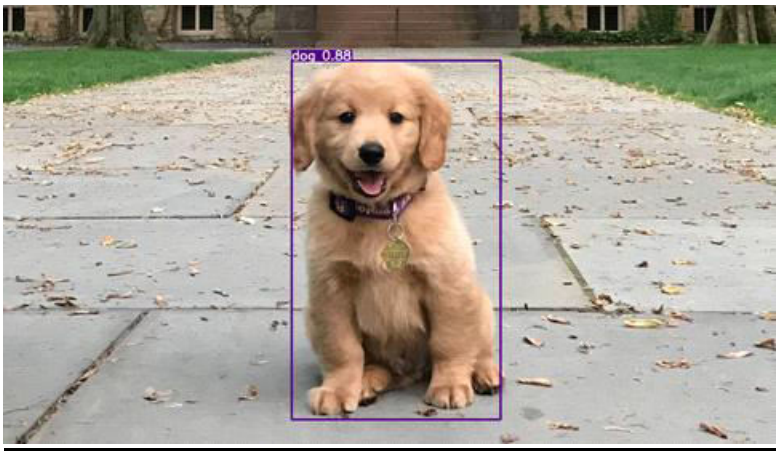
- [116,90, 156,198, 373,326]

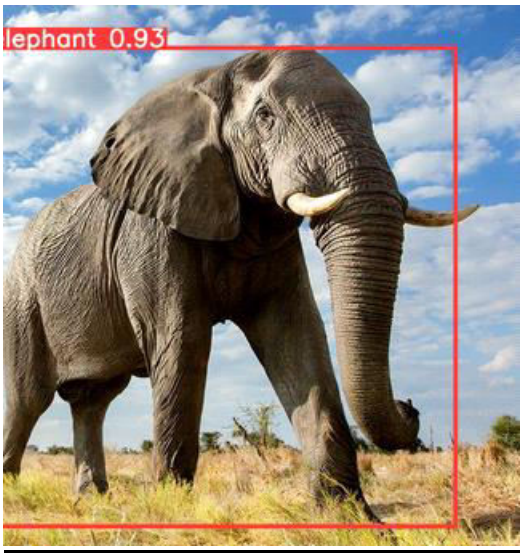
Some Screenshoots the show the output of detection:

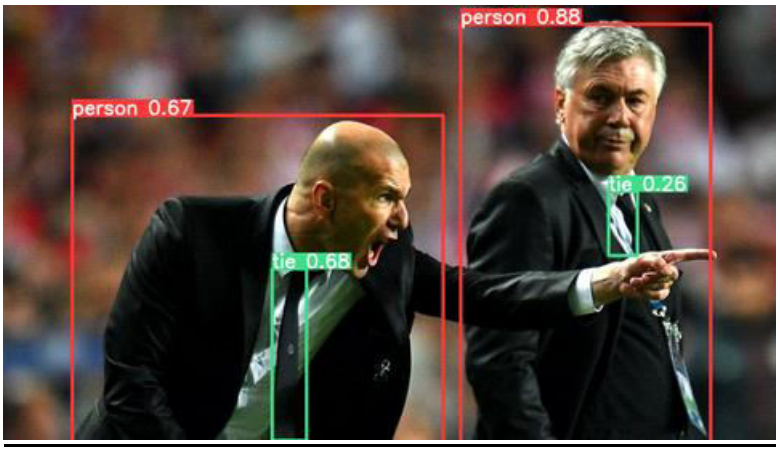



dog 0.77
cat 0.86


cat 0.72


dog 0.88





the code:

```
!git clone https://github.com/ultralytics/yolov5  # clone
%cd yolov5
%pip install -qr requirements.txt  # install

import torch
import utils
display = utils.notebook_init()


!python train.py --img 640 --batch 16 --epochs 1 --data coco128.yaml --weights yolov5s.pt --cache

!python detect.py --weights yolov5s.pt --img 640 --conf 0.25 --source data/images
display.Image(filename='runs/detect/exp14/zidane.jpg', width=600)
```