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Sat Apr 8 19:46:23 2023
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GPU Name Persistence-M Bus-Id Disp.A | Volatile Uncorr. ECC |
Fan Temp Perf Pwr:Usage/Cap| Memory-Usage | GPU-Util Compute M. |
                                  MIG M.
           Off | 00000000:00:04.0 Off |
 0 Tesla T4
        11W / 70W | 0MiB / 15360MiB |
N/A 61C P8
                                  Default |
                                   N/A I
Processes:
 GPU GI CI
                                GPU Memory
           PID Type Process name
   ID ID
No running processes found
```

!pip install ultralytics

```
from ultralytics import YOLO
    Looking in indexes: https://pvpi.org/simple. https://us-pvthon.pkg.dev/colab-wheels/public/simple/
    Collecting ultralytics
      Downloading ultralytics-8.0.71-py3-none-any.whl (510 kB)
                                               - 510.7/510.7 KB 34.4 MB/s eta 0:00:00
    Requirement already satisfied: PyYAML>=5.3.1 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (6.0)
    Requirement already satisfied: seaborn>=0.11.0 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (0.12.2)
    Requirement already satisfied: numpy>=1.21.6 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (1.22.4)
    Requirement already satisfied: matplotlib>=3.2.2 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (3.7.1)
    Requirement already satisfied: pandas>=1.1.4 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (1.4.4)
    Requirement already satisfied: scipy>=1.4.1 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (1.10.1)
    Requirement already satisfied: psutil in /usr/local/lib/python3.9/dist-packages (from ultralytics) (5.9.4)
    Requirement already satisfied: opencv-python>=4.6.0 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (4.7.0.72)
    Requirement already satisfied: torch>=1.7.0 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (2.0.0+cu118)
    Requirement already satisfied: torchvision>=0.8.1 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (0.15.1+cu118)
    Requirement already satisfied: tqdm>=4.64.0 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (4.65.0)
    Requirement already satisfied: requests>=2.23.0 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (2.27.1)
    Requirement already satisfied: Pillow>=7.1.2 in /usr/local/lib/python3.9/dist-packages (from ultralytics) (8.4.0)
    Collecting thop>=0.1.1
      Downloading thop-0.1.1.post2209072238-py3-none-any.whl (15 kB)
     Collecting sentry-sdk
      Downloading sentry_sdk-1.19.1-py2.py3-none-any.whl (199 kB)
                                             --- 199.2/199.2 KB 18.1 MB/s eta 0:00:00
```

Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.9/dist-packages (from matplotlib>=3.2.2->ultralytics) (0.11.0 Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.9/dist-packages (from matplotlib>=3.2.2->ultralytics) (1. Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.9/dist-packages (from matplotlib>=3.2.2->ultralytics) Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.9/dist-packages (from matplotlib>=3.2.2->ultralytics) (4 Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.9/dist-packages (from matplotlib>=3.2.2->ultralytics) (3. Requirement already satisfied: importlib-resources>=3.2.0 in /usr/local/lib/python3.9/dist-packages (from matplotlib>=3.2.2->ultral Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.9/dist-packages (from matplotlib>=3.2.2->ultralytics) (23. Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.9/dist-packages (from matplotlib>=3.2.2->ultralytics) (1 Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.9/dist-packages (from pandas>=1.1.4->ultralytics) (2022.7.1) Requirement already satisfied: charset-normalizer~=2.0.0 in /usr/local/lib/python3.9/dist-packages (from requests>=2.23.0->ultralyt Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.9/dist-packages (from requests>=2.23.0->ultralytics) (2 Requirement already satisfied: urllib3<1.27,>=1.21.1 in /usr/local/lib/python3.9/dist-packages (from requests>=2.23.0->ultralytics) Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.9/dist-packages (from requests>=2.23.0->ultralytics) (3.4) Requirement already satisfied: typing-extensions in /usr/local/lib/python3.9/dist-packages (from torch>=1.7.0->ultralytics) (4.5.0) Requirement already satisfied: jinja2 in /usr/local/lib/python3.9/dist-packages (from torch>=1.7.0->ultralytics) (3.1.2) Requirement already satisfied: networkx in /usr/local/lib/python3.9/dist-packages (from torch>=1.7.0->ultralytics) (3.0) Requirement already satisfied: sympy in /usr/local/lib/python3.9/dist-packages (from torch>=1.7.0->ultralytics) (1.11.1) Requirement already satisfied: filelock in /usr/local/lib/python3.9/dist-packages (from torch>=1.7.0->ultralytics) (3.10.7) Requirement already satisfied: triton==2.0.0 in /usr/local/lib/python3.9/dist-packages (from torch>=1.7.0->ultralytics) (2.0.0) Requirement already satisfied: cmake in /usr/local/lib/python3.9/dist-packages (from triton==2.0.0->torch>=1.7.0->ultralytics) (3.2 Requirement already satisfied: lit in /usr/local/lib/python3.9/dist-packages (from triton==2.0.0->torch>=1.7.0->ultralytics) (16.0. Requirement already satisfied: zipp>=3.1.0 in /usr/local/lib/python3.9/dist-packages (from importlib-resources>=3.2.0->matplotlib>= Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.9/dist-packages (from python-dateutil>=2.7->matplotlib>=3.2.2->ul  $Requirement already \ satisfied: \ MarkupSafe>= 2.0 \ in \ /usr/local/lib/python 3.9/dist-packages \ (from jinja 2-> torch>= 1.7.0-> ultralytics) \ (from jinja 2->$ Requirement already satisfied: mpmath>=0.19 in /usr/local/lib/python3.9/dist-packages (from sympy->torch>=1.7.0->ultralytics) (1.3. Installing collected packages: sentry-sdk, thop, ultralytics Successfully installed sentry-sdk-1.19.1 thop-0.1.1.post2209072238 ultralytics-8.0.71

```
libpng warning: iCCP: known incorrect sRGB profile
libpng warning: iCCP: known incorrect sRGB profile
libpng warning: iCCP: known incorrect sRGB profile
                                                                       mAP50 mAP50-95): 54% 7/13 [00:08<00:06, 1.07s/it]libp
                Class
                         Images Instances
libpng warning: iCCP: known incorrect sRGB profile
libpng warning: iCCP: known incorrect sRGB profile
                         Images Instances
                                                 Box(P
                                                                       mAP50 mAP50-95): 100% 13/13 [00:11<00:00, 1.14it/s]
                                                                R
                Class
                  a11
                            408
                                       459
                                                  0.83
                                                            0.822
                                                                       0.863
                                                                                  0.566
Stopping training early as no improvement observed in last 50 epochs. Best results observed at epoch 188, best model saved as be
To update EarlyStopping(patience=50) pass a new patience value, i.e. `patience=300` or use `patience=0` to disable EarlyStopping
238 epochs completed in 3.921 hours.
Optimizer stripped from runs/detect/train3/weights/last.pt, 6.3MB
Optimizer stripped from runs/detect/train3/weights/best.pt, 6.3MB
Validating runs/detect/train3/weights/best.pt...
Ultralytics YOLOv8.0.71 

✓ Python-3.9.16 torch-2.0.0+cu118 CUDA:0 (Tesla T4, 15102MiB)
Model summary (fused): 168 layers, 3007988 parameters, 0 gradients, 8.1 GFLOPs
                                             Box(P
                                                                      mAP50 mAP50-95): 23% 3/13 [00:04<00:14, 1.42s/it]libp
                Class Images Instances
                                                                R
libpng warning: iCCP: known incorrect sRGB profile
                Class
                         Images Instances
                                                                R
                                                                       mAP50 mAP50-95): 31% 4/13 [00:05<00:13, 1.46s/it]libp
libpng warning: iCCP: known incorrect sRGB profile
libpng warning: iCCP: known incorrect sRGB profile
libpng warning: iCCP: known incorrect sRGB profile
                Class
                                                                       mAP50 mAP50-95): 38% 5/13 [00:06<00:10, 1.32s/it]libp
                        Images Instances
                                                                R
                                                 Box(P
libpng warning: iCCP: known incorrect sRGB profile
libpng warning: iCCP: known incorrect sRGB profile
libpng warning: iCCP: known incorrect sRGB profile
                Class
                          Images Instances
                                                 Box(P
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                                                                       mAP50 mAP50-95): 54% 7/13 [00:08<00:05, 1.01it/s]libp
libpng warning: iCCP: known incorrect sRGB profile
libpng warning: iCCP: known incorrect sRGB profile
                                                                       mAP50 mAP50-95): 100% 13/13 [00:10<00:00, 1.20it/s]
                 Class
                          Images Instances
                                                 Box(P
                                                                R
                  all
                                        459
                                                 0.856
                                                            0.833
                                                                       0.873
                                                                                  0.574
                 Boar
                             408
                                         26
                                                 0.955
                                                            0.822
                                                                       0.904
                                                                                   0.62
               Cheetah
                             408
                                                            0.876
                                                                       0.97
                                                                                  0.601
                                         41
                                                    1
                                                            0.726
                                                                                  0.396
                 Deer
                             408
                                         51
                                                 0.841
                                                                       0.765
              Elephant
                             408
                                         56
                                                 0.825
                                                            0.768
                                                                       0.751
                                                                                  0.271
                             408
                                                            0.897
                                                                       0.944
                Hvena
                                         39
                                                 0.921
                                                                                  0.676
                Jaguar
                             408
                                         30
                                                 0.749
                                                              0.9
                                                                       0.897
                                                                                  0.756
               Leopard
                             408
                                         40
                                                  0.82
                                                              0.8
                                                                       0.838
                                                                                  0.596
                             408
                                         43
                                                 0.831
                                                             0.93
                                                                        0.94
                                                                                  0.642
                 Lion
                             408
                                         27
                                                 0.754
                                                            0.889
                                                                        0.93
                 Panda
                                                                                  0.564
                 Snake
                             408
                                         30
                                                 0.709
                                                            0.568
                                                                       0.616
                                                                                  0.307
                             408
                                                 0.967
                                                            0.888
                                                                       0.961
                                                                                   0.74
                 Tiger
                                         33
                             408
                                                 0.899
                                                             0.93
                 Wolf
                                         43
                                                                        0.96
                                                                                  0.724
Speed: 1.1ms preprocess, 3.2ms inference, 0.0ms loss, 4.1ms postprocess per image
Results saved to runs/detect/train3
```