

Step 1: Install YOLOv5 and dependencies

```
!git clone https://github.com/ultralytics/yolov5.git
```

```
%cd yolov5
```

```
!pip install -r requirements.txt
```

```
Requirement already satisfied: gitpython>=3.1.30 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 5)) (3.1.30)
Requirement already satisfied: matplotlib>=3.3 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 6)) (3.10.0)
Requirement already satisfied: numpy>=1.23.5 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 7)) (1.26.4)
Requirement already satisfied: opencv-python>=4.1.1 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 8)) (4.11.0)
Requirement already satisfied: pillow>=10.3.0 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 9)) (11.1.0)
Requirement already satisfied: psutil in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 10)) (5.9.5)
Requirement already satisfied: PyYAML>=5.3.1 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 11)) (6.0.2)
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Requirement already satisfied: scipy>=1.4.1 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 13)) (1.13.1)
Requirement already satisfied: thop>=0.1.1 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 14)) (0.1.1)
Requirement already satisfied: torch>=1.8.0 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 15)) (2.5.1)
Requirement already satisfied: torchvision>=0.9.0 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 16)) (0.16.0)
Requirement already satisfied: tqdm>=4.66.3 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 17)) (4.67.1)
Requirement already satisfied: ultralytics>=8.2.34 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 18)) (8.2.34)
Requirement already satisfied: pandas>=1.1.4 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 27)) (2.2.2)
Requirement already satisfied: seaborn>=0.11.0 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 28)) (0.13.2)
Requirement already satisfied: setuptools>=70.0.0 in /usr/local/lib/python3.11/dist-packages (from -r requirements.txt (line 42)) (70.0.0)
Requirement already satisfied: gitdb<5,>=4.0.1 in /usr/local/lib/python3.11/dist-packages (from gitpython>=3.1.30->-r requirements.txt (line 5)) (4.0.11)
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Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.11/dist-packages (from matplotlib>=3.3->-r requirements.txt (line 6)) (2.9.0)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from requests>=2.32.2->-r requirements.txt (line 12)) (3.3.2)
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Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11/dist-packages (from requests>=2.32.2->-r requirements.txt (line 12)) (2025.1.31)
Requirement already satisfied: filelock in /usr/local/lib/python3.11/dist-packages (from torch>=1.8.0->-r requirements.txt (line 15)) (3.16.1)
Requirement already satisfied: typing-extensions>=4.8.0 in /usr/local/lib/python3.11/dist-packages (from torch>=1.8.0->-r requirements.txt (line 15)) (4.12.2)
Requirement already satisfied: networkx in /usr/local/lib/python3.11/dist-packages (from torch>=1.8.0->-r requirements.txt (line 15)) (3.4.2)
Requirement already satisfied: Jinja2 in /usr/local/lib/python3.11/dist-packages (from torch>=1.8.0->-r requirements.txt (line 15)) (3.1.4)
Requirement already satisfied: fsspec in /usr/local/lib/python3.11/dist-packages (from torch>=1.8.0->-r requirements.txt (line 15)) (2025.1.1)
Requirement already satisfied: nvidia-cuda-nvrtc-cu12==12.4.127 in /usr/local/lib/python3.11/dist-packages (from torch>=1.8.0->-r requirements.txt (line 15)) (12.4.127)
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Requirement already satisfied: nvidia-cublas-cu12==12.4.5.8 in /usr/local/lib/python3.11/dist-packages (from torch>=1.8.0->-r requirements.txt (line 15)) (12.4.5.8)
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Requirement already satisfied: nvidia-cuspars-cu12==12.3.1.170 in /usr/local/lib/python3.11/dist-packages (from torch>=1.8.0->-r requirements.txt (line 15)) (12.3.1.170)
Requirement already satisfied: nvidia-nccl-cu12==2.21.5 in /usr/local/lib/python3.11/dist-packages (from torch>=1.8.0->-r requirements.txt (line 15)) (2.21.5)
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Requirement already satisfied: mpmath<1.4,>=1.1.0 in /usr/local/lib/python3.11/dist-packages (from sympy==1.13.1->-r requirements.txt (line 15)) (1.3.0)
Requirement already satisfied: py-cpuinfo in /usr/local/lib/python3.11/dist-packages (from ultralytics>=8.2.34->-r requirements.txt (line 18)) (9.0.0)
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Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.11/dist-packages (from pandas>=1.1.4->-r requirements.txt (line 27)) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.11/dist-packages (from pandas>=1.1.4->-r requirements.txt (line 27)) (2025.1)
Requirement already satisfied: smmap<6,>=3.0.1 in /usr/local/lib/python3.11/dist-packages (from gitdb<5,>=4.0.1->-r requirements.txt (line 5)) (3.0.1)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-packages (from python-dateutil>=2.7->-r requirements.txt (line 6)) (1.17.0)
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.11/dist-packages (from Jinja2->-r requirements.txt (line 15)) (2.1.5)
```

Step 2: Import dependencies

```
import torch
```

```
from PIL import Image
```

```
from IPython.display import display
```

```
from google.colab import files
```

Step 3: Upload an image manually

```
print("Please upload an image for object detection:")
```

```
uploaded = files.upload()
```

Get the uploaded image file name

```
image_path = list(uploaded.keys())[0]
```

Step 4: Load the pre-trained YOLOv5 model (trained on COCO dataset)


```
model = torch.hub.load("ultralytics/yolov5", "yolov5s", pretrained=True)
```

```
# Step 5: Run inference on the uploaded image
results = model(image_path)

# Step 6: Display the original image
print("Original Image:")
display(Image.open(image_path))

# Step 7: Show results (detected objects)
results.show()

# Step 8: Save and display the results image
results.save()
output_image_path = "runs/detect/exp/" + image_path # YOLO saves output here
print("\nDetected Objects:")
display(Image.open(output_image_path))
```

 Please upload an image for object detection:
 No file chosen Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.

Saving dog.jpg to dog.jpg

Using cache found in /root/.cache/torch/hub/ultralytics_yolov5_master

YOLOv5 🚀 2025-3-4 Python-3.11.11 torch-2.5.1+cu124 CUDA:0 (Tesla T4, 15095MiB)

Downloading <https://github.com/ultralytics/yolov5/releases/download/v7.0/yolov5s.pt> to yolov5s.pt...

100%|██████████| 14.1M/14.1M [00:00<00:00, 191MB/s]

Fusing layers...

YOLOv5s summary: 213 layers, 7225885 parameters, 0 gradients, 16.4 GFLOPs

Adding AutoShape...

/root/.cache/torch/hub/ultralytics_yolov5_master/models/common.py:894: FutureWarning: `torch.cuda.amp.autocast(args...)` is deprecated.
with amp.autocast(True):

Original Image:



