```
!kaggle datasets download -d trainingdatapro/fish-tracking-dataset
```

```
    Traceback (most recent call last):
      File "/usr/local/bin/kaggle", line 5, in <module>
        from kaggle.cli import main
      File "/usr/local/lib/python3.10/dist-packages/kaggle/__init__.py", line 23, in <module>
        api.authenticate()
      File "/usr/local/lib/python3.10/dist-packages/kaggle/api/kaggle_api_extended.py", line 403, in authenticate
        raise IOError('Could not find {}. Make sure it\'s located in'
    OSError: Could not find kaggle.json. Make sure it's located in /root/.kaggle. Or use the environment method.
```

```
!pip install kaggle -q
```

```
from google.colab import files

files.upload()
```

> Choose Files kaggle.json
> • **kaggle.json**(application/json) - 63 bytes, last modified: 9/21/2023 - 100% done
> Saving kaggle.json to kaggle.json
> {'kaggle.json': b'{"username":"itheaks","key":"52bb506555ef2435e23eca2f16a46d7f"}'}

```
! cp kaggle.json ~/.kaggle/
```

```
! chmod 600 ~/.kaggle/kaggle.json
```

```
!kaggle datasets download -d trainingdatapro/fish-tracking-dataset
```

```
    Downloading fish-tracking-dataset.zip to /content
     99% 248M/251M [00:02<00:00, 94.9MB/s]
    100% 251M/251M [00:02<00:00, 104MB/s]
```

```
!unzip /content/fish-tracking-dataset.zip -d /content/
```

```
inflating: /content/images/88.jpg
inflating: /content/images/89.jpg
inflating: /content/images/90.jpg
inflating: /content/images/91.jpg
inflating: /content/images/92.jpg
inflating: /content/images/93.jpg
inflating: /content/images/94.jpg
inflating: /content/images/95.jpg
inflating: /content/images/96.jpg
inflating: /content/images/97.jpg
inflating: /content/images/98.jpg
inflating: /content/images/99.jpg
```

```
!pip install ultralytics -q
```

──────────────────────────────── 618.0/618.0 kB 6.7 MB/s eta 0:00:00

```
!yolo detect predict model=yolov8m.pt source="/content/images"
```

```
Downloading https://github.com/ultralytics/assets/releases/download/v0.0.0/yolov8m.pt to 'yolov8m.pt'...
100% 49.7M/49.7M [00:00<00:00, 272MB/s]
Ultralytics YOLOv8.0.184 🚀 Python-3.10.12 torch-2.0.1+cu118 CPU (Intel Xeon 2.20GHz)
YOLOv8m summary (fused): 218 layers, 25886080 parameters, 0 gradients

image 1/99 /content/images/01.jpg: 384x640 1 bird, 1 kite, 1540.4ms
image 2/99 /content/images/02.jpg: 384x640 2 birds, 835.2ms
image 3/99 /content/images/03.jpg: 384x640 4 birds, 2 kites, 762.1ms
image 4/99 /content/images/04.jpg: 384x640 2 birds, 1 kite, 744.1ms
image 5/99 /content/images/05.jpg: 384x640 1 bird, 1 kite, 768.3ms
image 6/99 /content/images/06.jpg: 384x640 1 bird, 779.3ms
image 7/99 /content/images/07.jpg: 384x640 3 birds, 1 teddy bear, 795.1ms
image 8/99 /content/images/08.jpg: 384x640 6 birds, 776.2ms
image 9/99 /content/images/09.jpg: 384x640 3 birds, 1 teddy bear, 796.5ms
image 10/99 /content/images/10.jpg: 384x640 1 bird, 1 kite, 1 apple, 1 teddy bear, 917.2ms
image 11/99 /content/images/11.jpg: 384x640 2 birds, 786.0ms
image 12/99 /content/images/12.jpg: 384x640 4 birds, 1 kite, 1 apple, 763.7ms
image 13/99 /content/images/13.jpg: 384x640 4 birds, 1 kite, 1 bottle, 917.7ms
image 14/99 /content/images/14.jpg: 384x640 2 birds, 1 apple, 3 teddy bears, 1322.6ms
image 15/99 /content/images/15.jpg: 384x640 3 birds, 1 teddy bear, 1115.8ms
image 16/99 /content/images/16.jpg: 384x640 2 birds, 1 teddy bear, 774.5ms
image 17/99 /content/images/17.jpg: 384x640 2 teddy bears, 787.1ms
image 18/99 /content/images/18.jpg: 384x640 1 bird, 1 apple, 1 teddy bear, 787.5ms
image 19/99 /content/images/19.jpg: 384x640 1 bird, 1 teddy bear, 784.8ms
image 20/99 /content/images/20.jpg: 384x640 1 bird, 1 teddy bear, 762.4ms
image 21/99 /content/images/21.jpg: 384x640 1 apple, 3 teddy bears, 773.1ms
image 22/99 /content/images/22.jpg: 384x640 2 birds, 777.0ms
image 23/99 /content/images/23.jpg: 384x640 2 birds, 758.1ms
image 24/99 /content/images/24.jpg: 384x640 1 teddy bear, 796.8ms
image 25/99 /content/images/25.jpg: 384x640 2 teddy bears, 789.9ms
image 26/99 /content/images/26.jpg: 384x640 1 sports ball, 1 teddy bear, 769.0ms
image 27/99 /content/images/27.jpg: 384x640 (no detections), 1110.0ms
image 28/99 /content/images/28.jpg: 384x640 (no detections), 1308.5ms
image 29/99 /content/images/29.jpg: 384x640 3 birds, 2 kites, 1 teddy bear, 965.8ms
image 30/99 /content/images/30.jpg: 384x640 1 fire hydrant, 788.9ms
image 31/99 /content/images/31.jpg: 384x640 2 birds, 1 kite, 845.8ms
image 32/99 /content/images/32.jpg: 384x640 1 bird, 1 kite, 866.3ms
image 33/99 /content/images/33.jpg: 384x640 1 bird, 1 kite, 2 teddy bears, 842.4ms
image 34/99 /content/images/34.jpg: 384x640 4 birds, 1 sports ball, 1 teddy bear, 774.0ms
image 35/99 /content/images/35.jpg: 384x640 1 teddy bear, 785.4ms
image 36/99 /content/images/36.jpg: 384x640 4 birds, 1 teddy bear, 756.8ms
image 37/99 /content/images/37.jpg: 384x640 1 bird, 1 kite, 2 teddy bears, 780.7ms
image 38/99 /content/images/38.jpg: 384x640 6 birds, 1 kite, 785.5ms
image 39/99 /content/images/39.jpg: 384x640 1 bird, 2 kites, 1 teddy bear, 755.4ms
image 40/99 /content/images/40.jpg: 384x640 3 birds, 1 teddy bear, 792.1ms
image 41/99 /content/images/41.jpg: 384x640 4 birds, 1285.6ms
image 42/99 /content/images/42.jpg: 384x640 2 birds, 2 kites, 1307.8ms
image 43/99 /content/images/43.jpg: 384x640 1 fire hydrant, 5 birds, 2 kites, 783.6ms
image 44/99 /content/images/44.jpg: 384x640 1 bird, 2 kites, 764.0ms
image 45/99 /content/images/45.jpg: 384x640 2 birds, 786.7ms
image 46/99 /content/images/46.jpg: 384x640 2 birds, 2 kites, 2 teddy bears, 789.8ms
image 47/99 /content/images/47.jpg: 384x640 2 birds, 1 teddy bear, 783.2ms
image 48/99 /content/images/48.jpg: 384x640 2 birds, 1 teddy bear, 780.5ms
image 49/99 /content/images/49.jpg: 384x640 5 birds, 781.1ms
image 50/99 /content/images/50.jpg: 384x640 2 birds, 792.7ms
image 51/99 /content/images/51.jpg: 384x640 3 teddy bears, 779.5ms
image 52/99 /content/images/52.jpg: 384x640 3 teddy bears, 799.6ms
image 53/99 /content/images/53.jpg: 384x640 4 birds, 2 teddy bears, 789.4ms
```

```
!pip install ultralytics==8.0.20
```

```
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests>=2.23.0->ultralytics
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests>=2.23.0->ultralytics
Requirement already satisfied: absl-py>=0.4 in /usr/local/lib/python3.10/dist-packages (from tensorboard>=2.4.1->ultralytics==8.
Requirement already satisfied: grpcio>=1.48.2 in /usr/local/lib/python3.10/dist-packages (from tensorboard>=2.4.1->ultralytics==
Requirement already satisfied: google-auth<3,>=1.6.3 in /usr/local/lib/python3.10/dist-packages (from tensorboard>=2.4.1->ultral
Requirement already satisfied: google-auth-oauthlib<1.1,>=0.5 in /usr/local/lib/python3.10/dist-packages (from tensorboard>=2.4.
Requirement already satisfied: markdown>=2.6.8 in /usr/local/lib/python3.10/dist-packages (from tensorboard>=2.4.1->ultralytics=
Requirement already satisfied: protobuf>=3.19.6 in /usr/local/lib/python3.10/dist-packages (from tensorboard>=2.4.1->ultralytics
Requirement already satisfied: setuptools>=41.0.0 in /usr/local/lib/python3.10/dist-packages (from tensorboard>=2.4.1->ultralyti
Requirement already satisfied: tensorboard-data-server<0.8.0,>=0.7.0 in /usr/local/lib/python3.10/dist-packages (from tensorboar
Requirement already satisfied: werkzeug>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from tensorboard>=2.4.1->ultralytics=
Requirement already satisfied: wheel>=0.26 in /usr/local/lib/python3.10/dist-packages (from tensorboard>=2.4.1->ultralytics==8.0
Requirement already satisfied: filelock in /usr/local/lib/python3.10/dist-packages (from torch>=1.7.0->ultralytics==8.0.20) (3.1
Requirement already satisfied: typing-extensions in /usr/local/lib/python3.10/dist-packages (from torch>=1.7.0->ultralytics==8.0
Requirement already satisfied: sympy in /usr/local/lib/python3.10/dist-packages (from torch>=1.7.0->ultralytics==8.0.20) (1.12)
Requirement already satisfied: networkx in /usr/local/lib/python3.10/dist-packages (from torch>=1.7.0->ultralytics==8.0.20) (3.1
Requirement already satisfied: jinja2 in /usr/local/lib/python3.10/dist-packages (from torch>=1.7.0->ultralytics==8.0.20) (3.1.2
Requirement already satisfied: triton==2.0.0 in /usr/local/lib/python3.10/dist-packages (from torch>=1.7.0->ultralytics==8.0.20)
Requirement already satisfied: cmake in /usr/local/lib/python3.10/dist-packages (from triton==2.0.0->torch>=1.7.0->ultralytics==
Requirement already satisfied: lit in /usr/local/lib/python3.10/dist-packages (from triton==2.0.0->torch>=1.7.0->ultralytics==8.
Collecting jedi>=0.16 (from ipython->ultralytics==8.0.20)
  Downloading jedi-0.19.0-py2.py3-none-any.whl (1.6 MB)
  ──────────────────────────────────────── 1.6/1.6 MB 13.9 MB/s eta 0:00:00
Requirement already satisfied: decorator in /usr/local/lib/python3.10/dist-packages (from ipython->ultralytics==8.0.20) (4.4.2)
Requirement already satisfied: pickleshare in /usr/local/lib/python3.10/dist-packages (from ipython->ultralytics==8.0.20) (0.7.5
Requirement already satisfied: traitlets>=4.2 in /usr/local/lib/python3.10/dist-packages (from ipython->ultralytics==8.0.20) (5.
Requirement already satisfied: prompt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0 in /usr/local/lib/python3.10/dist-packages (from ipy
Requirement already satisfied: pygments in /usr/local/lib/python3.10/dist-packages (from ipython->ultralytics==8.0.20) (2.16.1)
Requirement already satisfied: backcall in /usr/local/lib/python3.10/dist-packages (from ipython->ultralytics==8.0.20) (0.2.0)
Requirement already satisfied: matplotlib-inline in /usr/local/lib/python3.10/dist-packages (from ipython->ultralytics==8.0.20)
Requirement already satisfied: pexpect>4.3 in /usr/local/lib/python3.10/dist-packages (from ipython->ultralytics==8.0.20) (4.8.0
Requirement already satisfied: cachetools<6.0,>=2.0.0 in /usr/local/lib/python3.10/dist-packages (from google-auth<3,>=1.6.3->te
Requirement already satisfied: pyasn1-modules>=0.2.1 in /usr/local/lib/python3.10/dist-packages (from google-auth<3,>=1.6.3->ten
Requirement already satisfied: six>=1.9.0 in /usr/local/lib/python3.10/dist-packages (from google-auth<3,>=1.6.3->tensorboard>=2
Requirement already satisfied: rsa<5,>=3.1.4 in /usr/local/lib/python3.10/dist-packages (from google-auth<3,>=1.6.3->tensorboard
Requirement already satisfied: requests-oauthlib>=0.7.0 in /usr/local/lib/python3.10/dist-packages (from google-auth-oauthlib<1.
Requirement already satisfied: parso<0.9.0,>=0.8.3 in /usr/local/lib/python3.10/dist-packages (from jedi>=0.16->ipython->ultraly
Requirement already satisfied: ptyprocess>=0.5 in /usr/local/lib/python3.10/dist-packages (from pexpect>4.3->ipython->ultralytic
Requirement already satisfied: wcwidth in /usr/local/lib/python3.10/dist-packages (from prompt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2
Requirement already satisfied: MarkupSafe>=2.1.1 in /usr/local/lib/python3.10/dist-packages (from werkzeug>=1.0.1->tensorboard>=
Requirement already satisfied: mpmath>=0.19 in /usr/local/lib/python3.10/dist-packages (from sympy->torch>=1.7.0->ultralytics==8
Requirement already satisfied: pyasn1<0.6.0,>=0.4.6 in /usr/local/lib/python3.10/dist-packages (from pyasn1-modules>=0.2.1->goog
Requirement already satisfied: oauthlib>=3.0.0 in /usr/local/lib/python3.10/dist-packages (from requests-oauthlib>=0.7.0->google
Installing collected packages: sentry-sdk, jedi, thop, ultralytics
  Attempting uninstall: ultralytics
    Found existing installation: ultralytics 8.0.184
    Uninstalling ultralytics-8.0.184:
      Successfully uninstalled ultralytics-8.0.184
Successfully installed jedi-0.19.0 sentry-sdk-1.31.0 thop-0.1.1.post2209072238 ultralytics-8.0.20
```

```
!yolo task=detect mode=predict model=yolov8n.pt conf=0.25 source='/content/images' save=true
```

```
image 82/99 /content/images/82.jpg: 384x640 2 birds, 1 sports ball, 1 kite, 1 teddy bear, 117.4ms
image 83/99 /content/images/83.jpg: 384x640 1 traffic light, 1 bird, 1 sports ball, 1 kite, 1 teddy bear, 118.0ms
image 84/99 /content/images/84.jpg: 384x640 1 bird, 1 sports ball, 1 kite, 1 teddy bear, 195.7ms
image 85/99 /content/images/85.jpg: 384x640 4 birds, 1 kite, 1 teddy bear, 191.5ms
image 86/99 /content/images/86.jpg: 384x640 3 birds, 2 kites, 191.7ms
image 87/99 /content/images/87.jpg: 384x640 5 birds, 185.3ms
image 88/99 /content/images/88.jpg: 384x640 3 birds, 191.2ms
image 89/99 /content/images/89.jpg: 384x640 3 birds, 188.5ms
image 90/99 /content/images/90.jpg: 384x640 4 birds, 1 sports ball, 2 teddy bears, 190.3ms
image 91/99 /content/images/91.jpg: 384x640 1 bird, 2 sports balls, 1 kite, 2 teddy bears, 187.2ms
image 92/99 /content/images/92.jpg: 384x640 3 birds, 3 sports balls, 2 kites, 1 teddy bear, 184.2ms
image 93/99 /content/images/93.jpg: 384x640 2 birds, 2 sports balls, 2 kites, 2 teddy bears, 189.2ms
image 94/99 /content/images/94.jpg: 384x640 4 birds, 2 sports balls, 2 kites, 112.7ms
image 95/99 /content/images/95.jpg: 384x640 2 birds, 1 sheep, 2 sports balls, 1 kite, 117.0ms
image 96/99 /content/images/96.jpg: 384x640 6 birds, 2 sports balls, 1 kite, 150.2ms
image 97/99 /content/images/97.jpg: 384x640 4 birds, 2 sports balls, 1 kite, 117.0ms
image 98/99 /content/images/98.jpg: 384x640 4 birds, 2 sports balls, 1 kite, 1 teddy bear, 119.5ms
image 99/99 /content/images/99.jpg: 384x640 2 birds, 2 sports balls, 3 kites, 1 teddy bear, 112.8ms
Speed: 0.7ms pre-process, 135.4ms inference, 1.1ms postprocess per image at shape (1, 3, 640, 640)
Results saved to runs/detect/predict2
```

```
from IPython import display
display.clear_output()

from ultralytics import YOLO
from IPython.display import display, Image
```

```
Image(filename='runs/detect/predict/02.jpg',height=500)
```



```
files.download("/content/runs/detect/predict2")
```

```
files.download("/content/images")
```

```
files.download("/content/runs/detect/predict2/04.jpg")
```

```
!zip -r /content/images.zip /content/images
```

```
adding: content/images/21.jpg (deflated 2%)
adding: content/images/74.jpg (deflated 2%)
adding: content/images/56.jpg (deflated 2%)
adding: content/images/90.jpg (deflated 1%)
adding: content/images/42.jpg (deflated 2%)
adding: content/images/32.jpg (deflated 2%)
adding: content/images/15.jpg (deflated 2%)
adding: content/images/40.jpg (deflated 2%)
adding: content/images/78.jpg (deflated 2%)
adding: content/images/37.jpg (deflated 2%)
adding: content/images/03.jpg (deflated 2%)
adding: content/images/92.jpg (deflated 1%)
adding: content/images/99.jpg (deflated 1%)
adding: content/images/57.jpg (deflated 2%)
adding: content/images/71.jpg (deflated 2%)
adding: content/images/20.jpg (deflated 2%)
adding: content/images/80.jpg (deflated 2%)
adding: content/images/96.jpg (deflated 1%)
adding: content/images/82.jpg (deflated 2%)
adding: content/images/44.jpg (deflated 2%)
adding: content/images/83.jpg (deflated 2%)
adding: content/images/88.jpg (deflated 1%)
adding: content/images/02.jpg (deflated 2%)
adding: content/images/61.jpg (deflated 2%)
adding: content/images/76.jpg (deflated 2%)
adding: content/images/41.jpg (deflated 2%)
adding: content/images/47.jpg (deflated 2%)
adding: content/images/35.jpg (deflated 2%)
adding: content/images/24.jpg (deflated 2%)
adding: content/images/49.jpg (deflated 2%)
adding: content/images/65.jpg (deflated 2%)
adding: content/images/97.jpg (deflated 1%)
adding: content/images/38.jpg (deflated 2%)
adding: content/images/04.jpg (deflated 2%)
adding: content/images/86.jpg (deflated 1%)
adding: content/images/62.jpg (deflated 2%)
adding: content/images/58.jpg (deflated 2%)
adding: content/images/23.jpg (deflated 2%)
adding: content/images/67.jpg (deflated 2%)
adding: content/images/31.jpg (deflated 2%)
adding: content/images/85.jpg (deflated 2%)
adding: content/images/75.jpg (deflated 2%)
adding: content/images/59.jpg (deflated 2%)
```

```
!ls /content/
```

```
annotations.xml  fish-tracking-dataset.zip  kaggle.json   yolov8m.pt
boxes            images                     runs          yolov8n.pt
fish.csv         images.zip                 sample_data
```

```
from google.colab import files
files.download('/content/images.zip')
```

```
!zip -r /content/predict2.zip /content/runs/detect/predict2
```

```
adding: content/runs/detect/predict2/57.jpg (deflated 2%)
adding: content/runs/detect/predict2/71.jpg (deflated 2%)
adding: content/runs/detect/predict2/20.jpg (deflated 2%)
adding: content/runs/detect/predict2/80.jpg (deflated 2%)
adding: content/runs/detect/predict2/96.jpg (deflated 1%)
adding: content/runs/detect/predict2/82.jpg (deflated 2%)
adding: content/runs/detect/predict2/44.jpg (deflated 2%)
adding: content/runs/detect/predict2/83.jpg (deflated 2%)
adding: content/runs/detect/predict2/88.jpg (deflated 1%)
adding: content/runs/detect/predict2/02.jpg (deflated 2%)
adding: content/runs/detect/predict2/61.jpg (deflated 2%)
adding: content/runs/detect/predict2/76.jpg (deflated 2%)
adding: content/runs/detect/predict2/41.jpg (deflated 2%)
adding: content/runs/detect/predict2/47.jpg (deflated 2%)
adding: content/runs/detect/predict2/35.jpg (deflated 2%)
adding: content/runs/detect/predict2/24.jpg (deflated 2%)
adding: content/runs/detect/predict2/49.jpg (deflated 2%)
adding: content/runs/detect/predict2/65.jpg (deflated 2%)
adding: content/runs/detect/predict2/97.jpg (deflated 1%)
adding: content/runs/detect/predict2/38.jpg (deflated 2%)
adding: content/runs/detect/predict2/04.jpg (deflated 2%)
adding: content/runs/detect/predict2/86.jpg (deflated 1%)
adding: content/runs/detect/predict2/62.jpg (deflated 2%)
adding: content/runs/detect/predict2/58.jpg (deflated 2%)
adding: content/runs/detect/predict2/23.jpg (deflated 2%)
adding: content/runs/detect/predict2/67.jpg (deflated 2%)
adding: content/runs/detect/predict2/31.jpg (deflated 2%)
adding: content/runs/detect/predict2/85.jpg (deflated 2%)
adding: content/runs/detect/predict2/75.jpg (deflated 2%)
adding: content/runs/detect/predict2/59.jpg (deflated 2%)
```

```
!ls /content/
```

```
annotations.xml  fish-tracking-dataset.zip  kaggle.json   sample_data
boxes            images                     predict2.zip  yolov8m.pt
fish.csv         images.zip                 runs          yolov8n.pt
```

```
from google.colab import files
files.download('/content/predict2.zip')
```