Code for YOLOV11 Model Development And Evaluation
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Mounting Drive with Google Colab

```
from google.colab import drive
drive.mount('/content/drive')
```

#Unzipping the folder in Google Colab

```
from google.colab import drive
drive.mount('/content/drive')  # Mount Google Drive

# Define paths
zip_file_path_in_drive = "/content/drive/My
Drive/Colab_Datasets/archive (3).zip"
destination_path_in_colab = "/content/archive.zip"  # Rename for
simplicity

# Copy zip file to Colab working directory with a safe name
!cp "{zip_file_path_in_drive}" "{destination_path_in_colab}"

# Optional: Remove old extracted folder if it exists
!rm -rf /content/BrainTumor

# Now unzip it
!unzip -o -q "{destination_path_in_colab}" -d "/content/"

# List content to verify
!ls /content
```

Mode Training

```
from ultralytics import YOLO
import os

# Corrected absolute path to data.yaml in Colab
data_yaml_path =
"/content/BrainTumor/BrainTumorYolov11/data.yaml"

# Optional: Confirm the file exists in Colab
```

```
if os.path.exists(data_yaml_path):
    print(f"The file '{data_yaml_path}' exists in Colab.")
else:
    raise FileNotFoundError(f"Error: The file '{data_yaml_path}' does not
exist in Colab.")

# Load a pre-trained YOLOv11 model (make sure you have this model in
Colab)
model = YOLO("yolo11n.pt")  # Use the correct filename (download if
needed)

# Start training
print("Starting training...")
trained_model = model.train(
    data=data_yaml_path,
    epochs=18,
    imgsz=640,
    batch=16,
    device=0
)

print("Training finished.")
```

Output :

```
Validating runs/detect/train/weights/best.pt...
Ultralytics 8.3.113 🚀 Python-3.11.12 torch-2.6.0+cu124 CUDA:0 (Tesla T4, 15095MiB)
YOLO11n summary (fused): 100 layers, 2,582,737 parameters, 0 gradients, 6.3 GFLOPs
                 Class     Images  Instances      Box(P          R      mAP50  mAP50-95): 100%|██████████| 20/20 [00:
                   all        612        612      0.884      0.868      0.917      0.695
                glioma        285        285      0.824      0.722      0.823      0.548
            meningioma        142        142      0.926      0.963       0.97        0.8
             pituitary        185        185      0.903      0.919      0.957      0.736
Speed: 0.3ms preprocess, 2.4ms inference, 0.0ms loss, 2.8ms postprocess per image
Results saved to runs/detect/train
Training finished.
```

```
18 epochs completed in 0.212 hours.
Optimizer stripped from runs/detect/train/weights/last.pt, 5.
Optimizer stripped from runs/detect/train/weights/best.pt, 5.
```