Lab 04

7)

The shape (1783, 4) of the boxes.eval() array means that 1,783 bounding boxes passed the confidence threshold after the yolo\_filter boxes function was applied in the YOLO object detection model. Initially, the model predicted 1,805 bounding boxes (from a 19x19 grid with 5 boxes per cell), but only 1,783 had confidence scores above the threshold, so these boxes remained. The maximum possible number of boxes would be 1,805 if all predictions met the threshold, and the minimum could be 0 if none did.

8)

The yolo\_anchors.txt file has 10 values, which represent the height and width of 5 anchor boxes. Using anchor boxes in object detection helps detect objects of different sizes and shapes, speeds up training, and improves the model’s ability to detect small or long objects. These predefined boxes make calculations simpler and improve recall. They also help in scenarios with many objects close together and give better starting points for finding objects, making object detection more efficient and accurate.