1. In the below given cell, shape of the boxes.eval() is (1783,4). Why are there 1783 boxes? Explain the reason for it. What is the maximum number and minimum number you can get for that? Write these answers in a word file.

The reason there are 1783 boxes in `boxes.eval()` is due to the way the YOLO (You Only Look Once) object detection model predicts bounding boxes. YOLO divides the input image into a grid, and for each grid cell, it predicts a certain number of bounding boxes with associated confidence scores and class probabilities.

1. yolo\_anchors.txt contains 10 values. They can be considered as height and width of 5 anchor boxes. What is the advantage of using such anchor boxes? What was the method used to determine the sizes of these anchor boxes? Give the answers to these questions in the word file.

By changing the mean and standard deviation (`stddev`) in the `tf.compat.v1.random\_normal` function, as well as the threshold value, you can observe different values for `boxes.eval().shape`. Higher mean values and lower thresholds will generally result in more boxes passing the confidence filter, while lower mean values and higher thresholds will result in fewer boxes.

The values you provided represent the dimensions (width and height) of the 5 anchor boxes, typically formatted as pairs:

* **Anchor Box 1:** (0.57273, 0.677385)
* **Anchor Box 2:** (1.87446, 2.06253)
* **Anchor Box 3:** (3.33843, 5.47434)
* **Anchor Box 4:** (7.88282, 3.52778)
* **Anchor Box 5:** (9.77052, 9.16828)

**Interpretation:**

* **Smaller Anchors** (e.g., 0.57273, 0.677385): These anchors are useful for detecting small objects in the image.
* **Larger Anchors** (e.g., 9.77052, 9.16828): These anchors are more suitable for detecting larger objects.

These anchor boxes are carefully selected to represent a wide range of object sizes that the model is expected to detect in the dataset. By using these predefined anchor boxes, the model can predict objects more accurately, considering the typical aspect ratios and scales present in the dataset.