# Spritle AI/ ML Task

## Steps to complete the problem

Step 1: Installation of libraries

Step 2: I took two tensorflow hub models that were trained on same dataset (COCO), and then the output of these models were stacked with a numpy and dictionary comprehension method. So that we have all the outputs at one dictionary.

Step 3: I took NMS code from the following link [Non Max Suppression (NMS). What is Non Max Suppression, and why is… | by Vineeth S Subramanyam | Analytics Vidhya | Medium](https://medium.com/analytics-vidhya/non-max-suppression-nms-6623e6572536)

Step 4: Then did some preprocessing to pass our model output for the NMS layer. This list will now be passed to nms layer where we are filtering out the boxes which have IOU over 0.5% and confidence\_threshold over 75%.

Step 5: Then another processing takes place to make a dictionary out of these NMS layer to give us detected\_boxes, detected\_scores, detected\_classes with it.

Step 6: Then visualizing these final combined and filtered detection on the image.

## Advantages

The code was detecting output from two models, like if one label was detected 76% from one model and from second model it was 74% and we did set the confidence\_threshold to 75% which will make not detecting one label if we use one model.

The detection was a combination of two models which makes it to detect high number of labels.

## Disadvantages

It was not taking the best among the scores, if one is 76% and second is 78% it will take either from one not the best one.