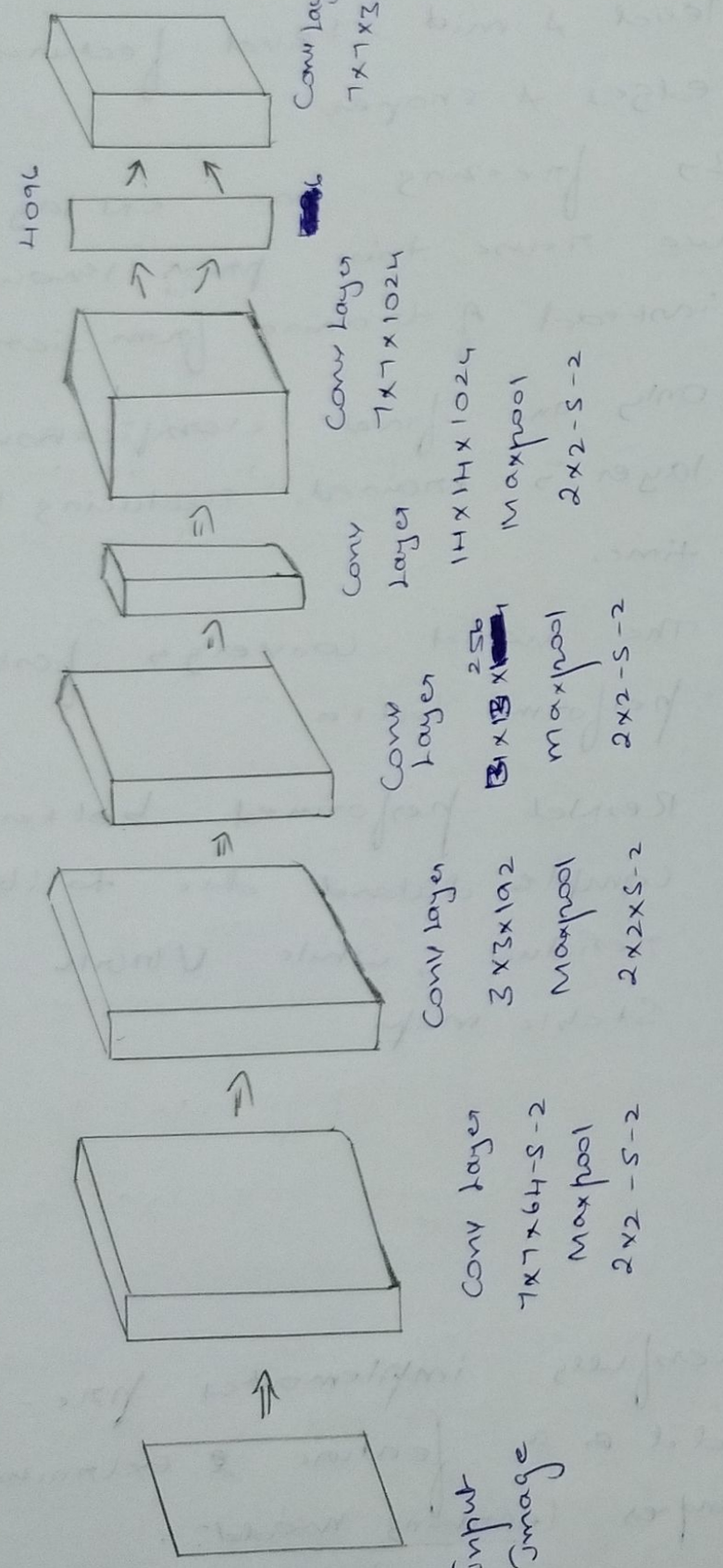
YOLO Architecture:



27/10/25 Lab 15: Implement a YOLO model to detect objects

Aim:

To implement YOLO model for realtime object detection.

Pseudocode:

* Import required libraries.
* Load a pre trained YOLO model.
* Load an input image.
* Pre process input
* Pass the preprocessed image through YOLO model. Obtain predictions.
* Apply non-maximum suppression to remove overlapping boxes.
* Draw bounding boxes and class labels on the detected objects
* Display or save the annotated image.

Observation:

* YOLO divides an image into grids and predicts bounding boxes and class probabilities:

Output :-

Detected: Dog (confidence : 0.79)

Detected: Cat (confidence : 0.72)

Detected : Cat (confidence: 0.32)

* It perform end to end detection in one pass
* YOLO is efficient for real time application such as robotics
* The accuracy depends on lighting conditions, and occlusion.
* Detection is robust on diverse dataset like COCO.

Result :-

YOLO model successfully implemented for object detection.