1. What's the difference between image classification and object detection?

* Image Classification: Says what kind of object is in the whole picture but doesn’t say where it is.
* Object Detection: Finds objects in the picture and shows exactly where they are using boxes around them.
* Example in this exercise: Instead of just saying, "There’s a dog," object detection shows a box around the dog and says, "This is a dog."

1. Why use SSD MobileNet V2?

* Why it’s good:
  + It’s fast and works well on devices like phones or small computers that don’t have a lot of power.
  + It can run in real-time, meaning it detects objects quickly.
* Why it’s not perfect:
  + It’s not as accurate as bigger, more powerful models.
  + It has trouble finding small objects or objects that are hard to see.

1. What does the find\_images\_with\_classes function do?

* It looks through a big dataset (like COCO) and picks out only the pictures that have the objects you care about.
* Why it’s useful: Saves time and computer power by only working with pictures that matter for your task.

1. What does the threshold in plot detections do?

* The threshold decides how sure the model must be before it shows a box around an object.
  + Higher threshold (e.g., 0.7): Only shows boxes when the model is very sure. Fewer mistakes but might miss some objects.
  + Lower threshold (e.g., 0.3): Shows more boxes, even if the model isn’t very sure. Might find more objects but also make more mistakes.

1. How does the heatmap help?

* A heatmap shows where the model thinks an object is in the picture and how confident it is.
* Why it’s helpful: You can see which parts of the picture the model is focusing on and whether it’s sure about its detections.