Homecoming

Task 3B - Given an arena image print Animals and Habitats present in the arena

This document explains the problem to be solved in Task 3B and where to go next after you finish reading this document.

Problem Statement:
In this sub-task, you have to find Animals and Habitats from the given arena image and tag them in the image. You have to simultaneously produce an output of Animal/Habitat names and their locations on the command line.

This output will be a *dictionary* with:

1. keys being the positions/locations and
2. values being name of the Habitat or Animal.

Objective:
The main objective of this task is to integrate Task 2 and Task 3A. You have to use the previously trained models.

NOTE: You are only allowed to use libraries that we have installed and used in the previous tasks. Tensorflow or Keras should NOT be used.

Dataset: You can download the datasets for this task from following links:

1. Animals: Animals Dataset
2. Habitats: Habitat Dataset

You will only use these datasets to train your model.

TIP: You can use the ***dataset.py*** that we built in **Task 1B** for data loading.

Code Structure:
From now on, you will develop things with only little supervision and mentoring. But we still expect you to follow good programming standards and writing reusable, least redundant code wherever possible.

1. Since we are NOT giving you templates or anything it will have a great weightage from now on.
2. If you write tests now, it is even better.
3. Faster and smaller models in size will be ranked better.

Inside your project folder, you'll have a ***main.py*** which will be the single most important entry point in your program.

Your ***main.py*** should expose these **parameters**. You can use argparse.

Name and Argument	Usage	Description
Arena image path (required)	./arena_image.jpg OR ./arena_image.png	Will output animal name from the image
Save image path (-s)	-s ./processed_arena_img.png OR -s ./processed_arena_img.jp	Will output habitat name from the image
Animal model path (--amod)	--amod ./animal-model.pth	Use a particular trained animal model. This is not compulsory and can be default path to your model.
Habitat model path (--hmod)	--hmod ./habitat-model.pthh	Use a particular trained habitat model. This is not compulsory and can be default path to your model.

The model paths are necessary if we tell you to upload models on drive and provide a link to us. We will then download the models separately and use your ***main.py*** that way. So you will only be uploading your code to the portal and separately submitting the models as drive links.

NOTE: If we download and paste the models directly in your project folder (alongside *main.py*), the main.py should use those models by default.

Resources: You will be entirely using your knowledge from previous tasks to implement this task.

Best Wishes!!