Task 1 Open Images class hierarchy

Open Images is a large-scale dataset annotated with image-level labels, object bounding boxes, object segmentation masks, visual relationships, and localized narratives.

Despite its scale, the labor-intensive nature weakens the annotation quality. Classes in Open Images form a hierarchy i.e. Mammal is a parent class of dog. That means an object instance can possibly have multiple labels. However, there are cases in which parent class annotations are missing.

Recommended reading
https://storage.googleapis.com/openimages/web/visualizer/index.html?set=train&type=segmentation&r=false&c=%2Fm%2F09k_b

Create a parser to read class hierarchy files and a data structure to efficiently perform the following operations.

- Find all siblings class of a class name
- Find the parent class of a class name
- Find all ancestor classes of a class name
- Find if both class 1 and class 2 belong to the same ancestor class(es)

Parent class: immediate superclass (up to 1 level in hierarchy)
Ancestor class: all the superclasses (including parent of the parent class)
Sibling class: classes that belong to the same parent class

You are provided with two files
Oidv6-class-descriptions.csv : each line consists of a mid and its corresponding class name
Bbox_labels_600_hierarchy: class hierarchy

You are only required to use classes included in Bbox_labels_600_hierarchy. These files may not provide complete information so you need to handle exceptions in your implementation

Task 2 PPE

In this task, you are going to create a model to identify if a person is wearing a *face mask* and a *safety helmet.*

You will be using the dataset provided by us. The dataset folder consists of an image folder and a xml annotation file. The annotations have human heads and several other objects. You only need human head objects for this task. Please refer to the meta element of the xml file for more details.
The 'id' attribute of the image element refers to the name of the image file. xtl, ytl, xbr, ybr represents the location of the bounding box of the object. x, y refers to the coordinates and tl, br are abbreviations of top left and bottom right respectively.

Propose an evaluation metric and justify your choice.

Evaluation

Your work will be graded based on code quality. You are free to code in any programming languages. Please create a repo to submit your work