作业3

作业：基于 RTMDet 的气球检测

背景：熟悉目标检测和 MMDetection 常用自定义流程。

任务：

1. 基于提供的 notebook，将 cat 数据集换成气球数据集
2. 按照视频中 notebook 步骤，可视化数据集和标签
3. 使用MMDetection算法库，训练 RTMDet 气球目标检测算法，可以适当调参，提交测试集评估指标
4. 用网上下载的任意包括气球的图片进行预测，将预测结果发到群里
5. 按照视频中 notebook 步骤，对 demo 图片进行特征图可视化和 Box AM 可视化，将结果发到群里
   需提交的测试集评估指标（不能低于baseline指标的50%）

- 目标检测 RTMDet-tiny 模型性能不能 65 mAP

```
coco/bbox_mAP: 0.7170  coco/bbox_mAP_50: 0.8160  coco/bbox_mAP_75: 0.7970  coco/bbox_mAP_s: 0.0000  coco/bbox_mAP_m: 0.4530
```

[5]:
```
visualizer = VISUALIZERS.build(model.cfg.visualizer)
visualizer.dataset_meta = model.dataset_meta
```

```
06/12 19:49:29 - mmengine - WARNING - `Visualizer` backend is not initialized because save_dir is None.
```

[6]:
```
img = mmcv.imread(img_path, channel_order='rgb')
output = inference_detector(model, img)

img_output = visualizer.add_datasample(
    "result",
    img,
    data_sample=output,
    draw_gt=False,
    # draw_heatmap=False,
    # draw_bbox=True,
    # show=False,
    # show_kpt_idx=True,
    # wait_time=0,
    # kpt_thr=.3,
)

visualizer.show()
```

```
/root/miniconda3/lib/python3.8/site-packages/torch/functional.py:445: UserWarning: torch.meshgrid: in an upcoming release, it will be required to pass the indexing argume
nally at  ../aten/src/ATen/native/TensorShape.cpp:2157.)
  return _VF.meshgrid(tensors, **kwargs)  # type: ignore[attr-defined]
/root/mmdetection/mmdet/visualization/palette.py:90: UserWarning: __floordiv__ is deprecated, and its behavior will change in a future version of pytorch. It currently ro
the 'trunc' function NOT 'floor'). This results in incorrect rounding for negative values. To keep the current behavior, use torch.div(a, b, rounding_mode='trunc'), or fo
ion, use torch.div(a, b, rounding_mode='floor').
  scales = 0.5 + (areas - min_area) // (max_area - min_area)
```

[6]: