To do a basic run of MeshRCNN based 3D vision project to incorporate new dataset categories we have to do the following -

This code will only run when the CUDA version in the system and the Pytorch3D CUDA built from the source are compatible

1) Read and understand Pixel2Mesh and MeshRCNN thoroughly
2) Complete a basic detectron2 tutorial which I have provided as detectron_tutorial.ipynb
3) Clone the git repository of Co3D in the main folder of this project
4) Download Co3D dataset of a certain category using the command - `python ./co3d/download_dataset.py --download_folder DOWNLOAD_FOLDER --single_sequence_subset --download_categories 'bottle'`
5) This will download a subset of the bottle dataset. To download multiple categories we can just specify the categories separated by a comma - ‘bottle,cup’
6) Download the Pix3D dataset (given in MeshRCNN Inference.ipynb)
7) Run and experiment with the MeshRCNN Inference.ipynb file

All of these steps would require 4-5 hours to run as the code builts pytorch3d and detectron2 from source as there is no pip package available for both. It is advisable to run these on colab as if we want to run them on AWS, it will take even more time for the instance to get spawned.