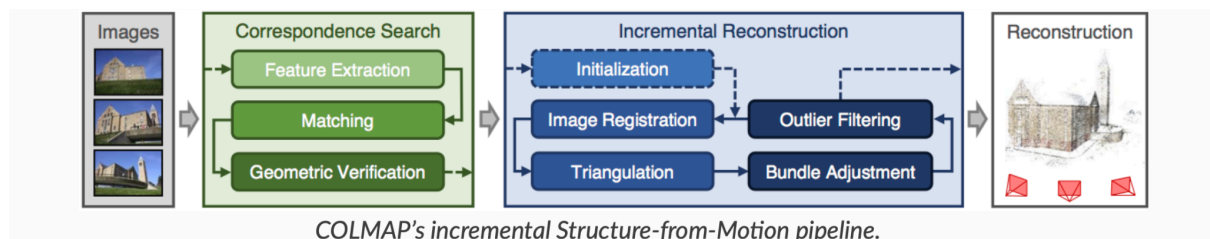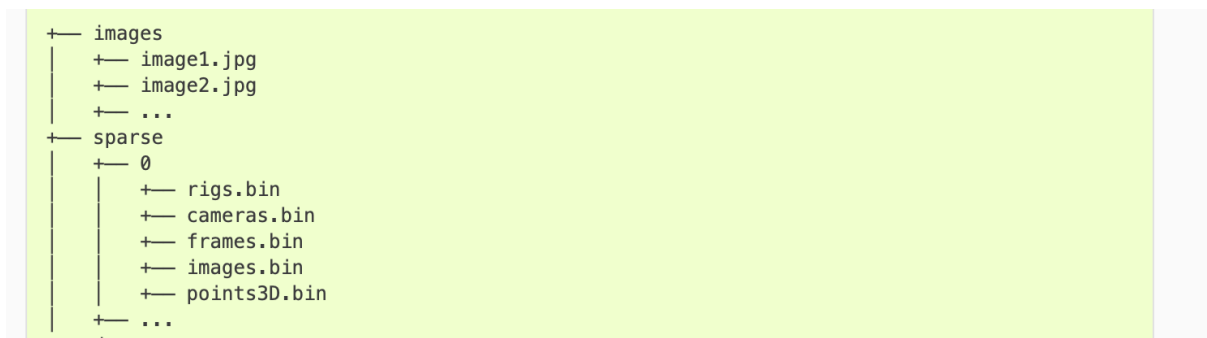# COLMAP

NEED - I need colmap to convert my images to the required inputs for the nerf model

What is colmap? COLMAP is a general-purpose Structure-from-Motion (SfM) and Multi-View Stereo (MVS) pipeline

What i am interested is - SPARSE RECONSTRUCTION

```
+── images
│   +── image1.jpg
│   +── image2.jpg
│   +── ...
+── sparse
│   +── 0
│   │   +── rigs.bin
│   │   +── cameras.bin
│   │   +── frames.bin
│   │   +── images.bin
│   │   +── points3D.bin
│   +── ...
```


COLMAP's incremental Structure-from-Motion pipeline.

SfM -
input: set of overlapping images of the same object, taken from different viewpoints
SfM has 3 steps

Feature Extraction -
feature detection/extraction finds sparse feature points in the image

Feature Matching -
feature matching and geometric verification finds correspondences between the feature points in different images.

Different matching modes
Exhaustive Matching - good for less than 100 images **(I will use this one)**
Sequential Matching - images are taken in a sequential manner eg by a video camera.

Vocabulary Tree Matching - more than 1000 images
Spatial Matching , Transitive Matching , Custom Matching

Step 3 is Sparse reconstruction