ADIPCV-2020 ASSIGNMENT-5
/* Range Image Processing */

Consider a data set containing both optical and range images of the visible surface for the same scenes (provided in the folder RGBD data). Perform the following operations with this data set:
(i) Compute principal, Gaussian and mean curvatures at each point of the range data. (ii) Characterize local topology at that point based on the signs of (a) principal curvatures as well as (b) mean and Gaussian curvatures. 30
(ii) Compute Neighbourhood Plane Set (NPS) at each pixel. 10
(iii) Perform region growing of homogeneous labels using (a) principal curvatures,(b)) Gaussian curvatures and (c) NPS, separately. 30
(iv) Summarize your observations on the quality of segmentation for each case ((a), (b) and (a,b)) for each image. Use corresponding RGB image to provide your subjective judgment on the quality. You may order their performances (using the operator '>') as per your judgment. For comparable performances, use the equality operator (=). 30

You may implement your programs in OpenCV/MATLAB language with necessary user's interfaces and visualization of your results and input.
Please provide a documentation for compiling and running the programs in a README file. The whole project should be submitted in a single tar or zip file.
Bonus marks: For well organized documentation, coding, and demonstration of results. 20