

Task 1 : Utilize the below satellite image link to perform the following tasks :

<https://www.kaggle.com/datasets/amerii/spacenet-7-multitemporal-urban-development>

Note : (you can get more information about image size, shape , labels etc by visiting the link and you can use single image from the link based on task requirement)

- a. convert the image to grayscale and apply noise reduction techniques for preprocessing
- b. Utilize edge detection algorithms to identify boundaries between buildings and background.
- c. Implement algorithms like K-Means clustering to group pixels with similar characteristics
- d. Refine the segmentation mask based on the evaluation. This could involve morphological operations
- e. Create a visualization that overlays the segmentation mask on the original image to highlight the segmented buildings

Task 2 : Load a pre-trained segmentation algorithm , fine-tuning it if necessary to isolate regions based on pixel intensities