CHANGE IDENTIFICATION IN IMAGES

Goal: To identify change between two images using Scale Invariant Feature Transform (SIFT)

(Example:
https://medium.com/analytics-vidhya/opencv-feature-matching-sift-algorithm-scale-invariant-feature-transform-16672eafb253)

Prerequisites:

Basics of Python, Image Processing

Procedure:

(i) Preprocess two images
(ii) Extract keypoints from images using SIFT
(iii) Perform keypoint matching
(iv) Identify unmatched keypoints
(v) Generate a bounding box using the unmatched keypoints to identify the change

Reference material:

a) Fundamentals of image processing
(https://www.v7labs.com/blog/image-processing-guide)
b) Fundamentals of keypoint detection
(https://docs.opencv.org/4.x/da/df5/tutorial_py_sift_intro.html)
c) Fundamentals of keypoint matching
(https://docs.opencv.org/4.x/dc/dc3/tutorial_py_matcher.html)
d) Examples:
- a) https://thepythoncode.com/article/sift-feature-extraction-using-opencv-in-python
- b) https://www.scaler.com/topics/feature-matching-opencv-python/
- c) https://pyimagesearch.com/2017/06/19/image-difference-with-opencv-and-python/