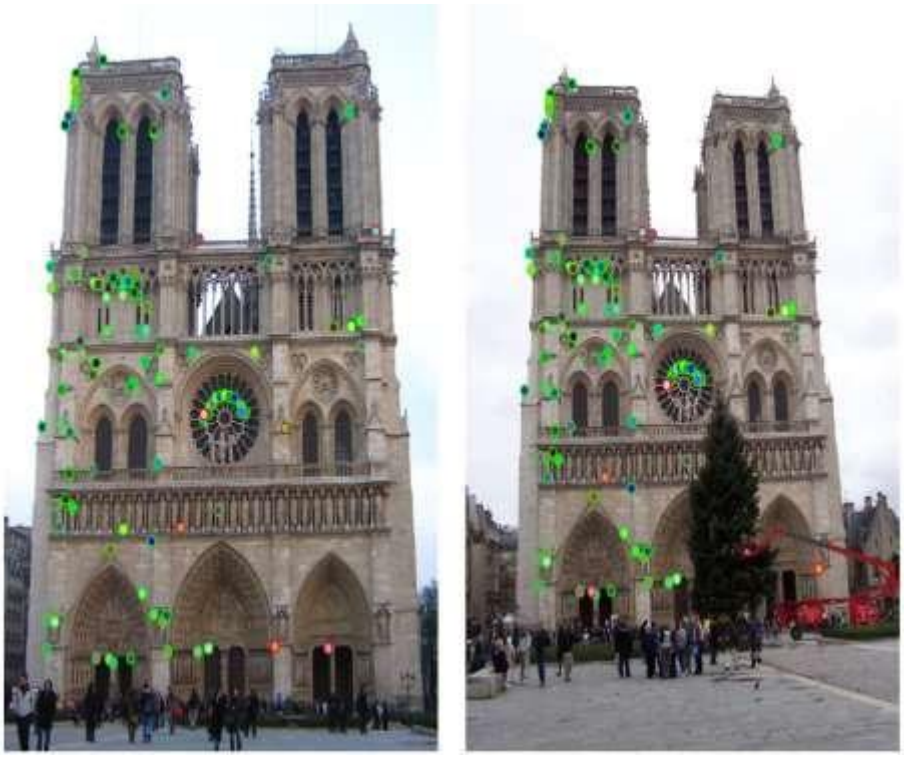
Assignment 4: Feature Matching SIFT

Landmark classification algorithm using SIFT detectors

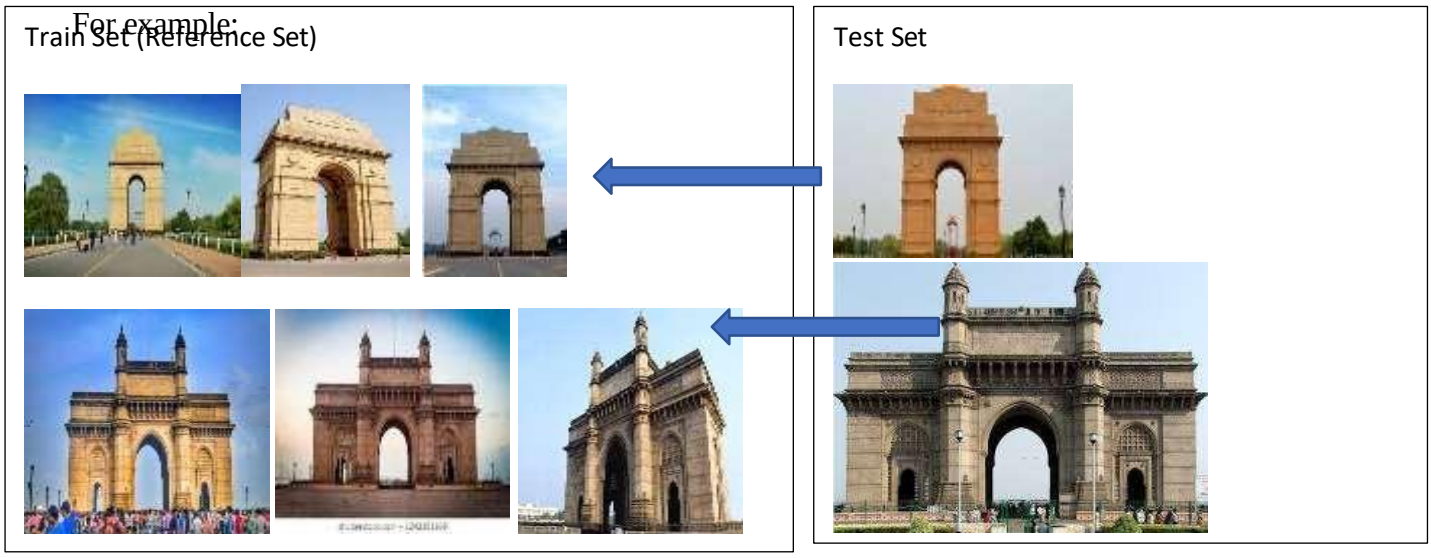


How to proceed:

a. Collect 5 images of different atleast 10 different landmarks (10 classes)
b. Store then as your reference data.

Write a program that takes a random image of one of the landmark and use your reference data to find the closed matched image and print the name of the predicted landmark.

For example:



How to do?

1. Initially develop a SIFT feature extractor.
2. Work on Train Images Set
   - Read images from train database, resize them to a standard size of your choice. Assign category/labels to each image belonging to same set.
   - For example: Each ***train*** **images** of India gate will be assigned label =1, all gateway images label=2.
   - Then extract SIFT features for each train image, [finally represent it as 1-D column vector].
   - Build a ***Train_features_database*** of size [MxN], were M is the size of feature vector and N is the total no. of images (No. of classes x samples per class).

3. Given a random test image
   - Assign actual label and Extract SIFT features similarly.
   - Calculate distance between this test_feature with all features in train_features_database *// * study here about SIFT feature matching process*
   - Output the image and the label which best match is found.
4. Record Accuracy
   - Result is true if matched output label = assigned label.
   - Record overall accuracy of your system.

   You must add images of atleast 10 categories.