Steps and explanations in sift:

1. Extact the sift descriptors for each video based on video name.

Files: Task2SIFT.m

2. The for each frame in video 1 calculate the framewise distance to each frame in video 2.

nFrames1 = frames in video 1.

nFrames2 = frames in video 1.

corresDistance is a 2d array nFrames2 x nFrames1 containing all possible framewise distances.

element at [10,15] signifies distance between frame 10 video1 to frame 15 video2.



sift\_hausroff is a c function that takes inputs: the sift descriptors of two frames (1 each from video 1 and video 2) and computes the hausroff distance.

\*This nested loop is one bottleneck. May\*\* reduce time if done in c. or an alternative matrix multiplication in matlab.



this is the c code to compute distances. Matlab passes the 2d array as a pointer to a 1d array in column major order. So D1 and D2 are the two pointers to sift descriptors of a

particular frame in video 1 and video 2 respectively. Since it is column major each 128 elements correspond to a sift descriptor (vector).

The two loops increment by 128 (dim is used, it calculates the number of dimensions so can be used for any length vector even reduced dimensions)

 in each step. calculating the hausroff distance.(min max).

\*\*In case there are no sift descriptors ie any of the two inputs are empty the code return the maximum possible distance (Infinity).