# MMSR Lab 2

names: Chia-Lun Yeh, Nivedita Prasad

feature: HSVhist

channels and bins: channel:3, bins:8

metric:  Manhattan Distance

*** Top-10 for film /content/gdrive/MMSR_lab/cs4065/data/poster_images/American_Pie.jpg ***

0. /content/gdrive/MMSR_lab/cs4065/data/poster_images/Life_of_Crime.jpg
1. /content/gdrive/MMSR_lab/cs4065/data/poster_images/Love_Actually.jpg
2. /content/gdrive/MMSR_lab/cs4065/data/poster_images/Pak_Van_Mijn_Hart.jpg
3. /content/gdrive/MMSR_lab/cs4065/data/poster_images/The_Parent_Trap.jpg
4. /content/gdrive/MMSR_lab/cs4065/data/poster_images/The_Girl_Next_Door.jpg
5. /content/gdrive/MMSR_lab/cs4065/data/poster_images/A_Simple_Life.jpg
6. /content/gdrive/MMSR_lab/cs4065/data/poster_images/12_Years_a_Slave.jpg
7. /content/gdrive/MMSR_lab/cs4065/data/poster_images/The_Voices.jpg
8. /content/gdrive/MMSR_lab/cs4065/data/poster_images/Mr._Turner.jpg
9. /content/gdrive/MMSR_lab/cs4065/data/poster_images/Looney_Tunes__Back_in_Action.jpg

We use HSV and 8 bins per channel because it gives us posters that are more similar visually. There are several faces present in the reference poster, and the main colors are skin and red. The first poster in the list has several faces, while the second- and third-placed posters are both red and have several faces. We think HSV is better than BGR because it separates along the brightness dimension which is more intuitive, especially when we want to classify the genre. 16 bins is a little too detailed and might result in some bins without value (sparse data), so we use 8 bins.

To do a clear film genre classification with movie posters, we can also apply other image processing techniques besides color. For example, we can consider texture features. Cartoon posters generally have different texture from real-life-movie posters. We can also analyze the **facial expression of the characters** on the movie posters because the facial expression can be very discriminative. (comedy with very happy faces while action movies have more serious faces). From the paper in [1], the authors also mention that color statistics can be informative. For example, the average and variance of HSV and/or RGB, Gradient of RGB values of the image.

[1] Acharya, Kim, and Joon Hee Kim. "Image Categorization based on Color Characteristics." (2009).