EECS 448: Software Engineering I
Spring 2015
Homework #2 (Version 1)

Total 50 Points **Due Date: Feb. 11, 2015**

Using Matlab, develop your software to generate Tone-mapped High Dynamic Range (HDR) images extracted from several LDR images of the same scene.

1. Take a sequence of frames for a scene using a camera.
2. Select a frame "N" from where you have good images.
3. Assume that the selected N^{th} frame is your first image with exposure -1. (Image A)
4. Add images from N^{th} and $(N+1)^{th}$ frame and use Matlab's uint8() function to get your second image which will correspond to exposure 0. (Image B)
5. Add images from N, (N+1), (N+2), and (N+3) frames and use Matlab's uint8() function to get your third image which will correspond to exposure +1. (Image C)
6. Store these three images as .jpg files.
7. Compute an HDR image after reading these three .jpg images as discussed in class. Then visualize that image imshow() function. Store this HDR image as an .hdr file (Image D)
8. Read that .hdr image, and use tonemap function of Matlab to compute a tone-mapped version of the .hdr image.
9. Display that image using imshow() function. (Image E)
10. **Present all the images in your report, and explain the exact procedures followed to obtain those images.**
11. **Analyze and validate these images as discussed in class.**
12. **Include your software listing with documentation (line by line).**