Matlab Programming Documentation

Solutions to programming assignments in this class should be provided as functions in .m files (no scripts should be used). Each function should include the following header information:

```
function <output variables> = CS6640_<name>(<input variables>)
% CS6640_<name> - brief description of function
% On input:
%     <input variable 1> (type): <short description>
% ... <input variable m> (type): <short description>
% On output:
%     <output variable 1> (type): <short description>
% ... <output variable n> (type): <short description>
% Call:
%     <var1> = CS6640_<name>(<var list>);
% Author:
%     Your name
%     UU
%     Fall 2020
%
```

Here is an example of a specific function:

```
function im = CS6640_camera(f,pts,M,N,S,sigma2)
% CS6640_camera - produce an image from a set of 3D points
% On input:
%     f (float): focal length (assume set to 1)
%     pts (nx3 array): X,Y,Z 3D points from scene
%     M (int): number of rows in output image
%     N (int): number of cols in output image
%     S (int): size of Gaussian filter window (one side)
%     sigma2 (float): variance for Gaussian
% On output:
%     im (MxN array): output image
%       - 3D points at x,y extremes lie on image edges
%       - pixel intensities are scaled by Z value
%       - image is flipped up down (e.g., use flipud)
%       - make sure intensities are between 0 and 255
% Call:
%     im = CS6640_camera(f,pts,M,N,S,sigma2);
% Author:
%     <Your name>
%     UU
%     Fall 2020
%
```