Assignment 2 (Systems for Smart Home Automation)
Assignment given out: April 26th, Assignment Due: May 11th, 11: 59 pm
[Total points: 10 points]

What to submit: Please comment your code well. Take the entire homelab source tree, tar it, gzip it, and upload to your Google site. You must also create a video of your app in action and upload it to youtube and share the youtube video on your google site. Before the submission deadline you should send an email with the link to your assignment to the TA and me. The title of your email should be: CMSC 691: Assignment 2. You should solve this assignment *in groups of two*. The group should be the same group that you have formed for your final project.

Goal: The goal of this assignment is to understand how to write an app in lab of things. The app you are going to build is a camera app that can be used for two purposes (1) taking pics using the web camera on your machine and (2) store the images clicked in a folder on your machine. For this application the driver you would be using is **WebCamera** and the Scout that you would be using is **WebCamera**. Both the driver and the Scout is built into the HomeOS tree. The webinterface UI for the app is upto you to decide. You can take code for the UI from the CameraViewer App built in into the HomeOS tree. Here are the steps to building the app.

1. The first step to building the app is to understand the CameraDriver and the role it exposes and then understanding how the CameraViewer application works. You are welcome to take code from the CameraViewer app for your application

2. Call your app CameraImager and add it to the apps directory in the HomeOS tree. The CameraViewer app in the HomeOS tree does something similar to the app you are going to build but does not click pictures and does not store the pics.

3. Once you have built the app, compile it. However, to run the app inside lab of things, you have to modify the modulesDB.xml in Homestore. The xml tag for the app should expose the Role. You also need to add the webcam scout in the Scout.xml file if it is not already there.

Entry in Scout.xml
```
<Scout Name="HomeOS.Hub.Scouts.WebCam" DllName="HomeOS.Hub.Scouts.WebCam.dll"/>
```

Entry in ModuleDB.xml
```
<Module AppName="CameraImager" BinaryName="HomeOS.Hub.Apps.CameraImager"
Description="description" Rating="5" IconUrl="icon.png" Version="1.0.0.0">
   <RoleList>
     <Role Name=":camera:"/>
   </RoleList>
  </Module>
```

4. Run the lab of things platform, open up the dashboard, and click on Add devices tab. It should run the webcam scout and display the webcam device. Clicking on the webcam device will show the apps you can install with the webcam device – your app should be visible there. Install your app and then you can use your app from the web interface.