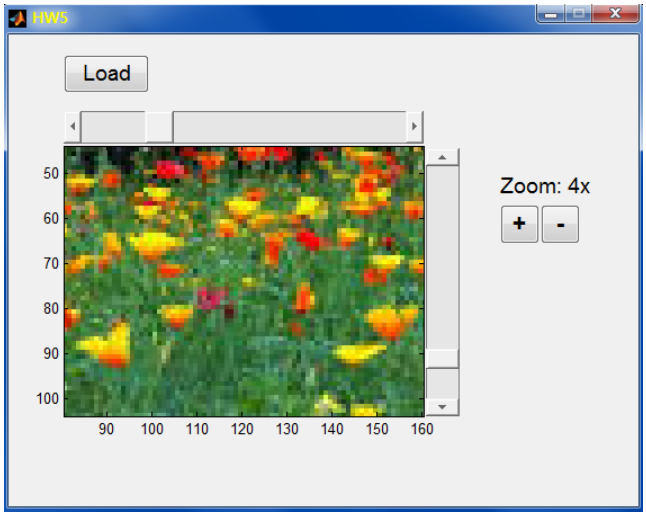
MATLAB Programming NCTU Spring 2017 Assignment#4 due 2017/5/26

For this assignment, you will create an image viewer, which is similar to ***Paint*** without the editing capability.



- Have an **axes** for image display. You need to use **`axes`** to set it as the current axes before calling **`imshow`**.
- Set the **`Unit`** property of the figure and the axes to **`Pixels`** so that you know the correct size of the axes.
- Use one of MATLAB's supplied dialog box for opening files to select an image file. Read the documentation and figure out how to do this.
- Use two **pushbuttons** to adjust the zoom factor. Set an upper bound of the zooming factor (such as 8 or 16), so that you will not run out of memory.
- Use two **slider bars** to select the viewed portion of the image. You need to carefully set their **Min**, **Max**, and **SliderStep** properties according to the image size.
- Wherever the view changes (due to a new image file loaded or any change to the zoom factor or positions of the slider bars), you need to create a viewing image with the same size as the axes (in pixels) to be displayed.
  - When an image is first loaded, set the zoom factor to one, meaning that one image pixel is shown in one screen pixel. Do not resize the image to fit the axes.
  - If the input image (under the current zoom factor) is larger than the axes size in any dimension, enable the corresponding **slider bar**.
  - If the input image (under the current zoom factor) is smaller than or equal to the axes size in any dimension, disable the corresponding **slider bar**. Any part of the viewing image not occupied by contents from the input image should be filled with white color.
  - When the zooming factor is **`n`**, a pixel in the input image is converted to a **`nxn`** square in the viewing image. (For this purpose, you can use the **`imresize`** function in the image processing toolbox, with the method being **`'nearest'`**.)

Submission: Submit both your code (.m file) and the GUIDE layout file (.fig file) through e3. Name your file **`P4_#######.m`**, and **`P4_#######.fig`**, where the **`#######`** represents your student ID. There will be two weeks for each assignment plus a three-day grace period, during which there will be a 10%/day deduction for your grade.

A "copy detection" will be applied to your submissions, and those found to have copied assignments will receive zero points for the assignment.