

In this lab task, you will build a very simple app using App Designer. This app will act as an image viewer that will allow you browse the images from a single directory. Here are what to do in this lab:

- GUI objects:
  - ♦ An **axes** for displaying an image.
  - ♦ A **list box** for listing all the image file names.
  - ♦ A **push button** to bring up the dialog box for path selection.
  - ♦ A **label** for displaying the selected path.
  - ♦ A **label** for displaying information about the selected image file.
- Properties to add:
  - ♦ **folder**: selected folder (complete path)
  - ♦ **im0**: selected image
- Callbacks to add:
  - ♦ **Button-Pushed** event for the **push button**:
    - Call **uigetdir** function to bring up a dialog box, which allows the user to select a folder. The return value is the selected path. (A return value of zero means that the user exits the dialog box without a valid selection. Skip the operations below in this case.)
    - Set the returned path to the **folder** property.
    - Set the **Text** property of the path **label** to the selected path.
    - Call **dir** to retrieve the names of JPEG files. Put the image names into a cell array of character vectors, then assign the cell array to the **Items** property of the **list box**.
    - Call **select\_file** to display the first image, as the first item in the **list box** is selected initially.
  - ♦ **Value-Changed** event for the **list box** (when the user selects a different item):
    - Call **select\_file**.
- Helper functions to add (as additional methods of the App object):
  - ♦ **select\_file**: Display the image of the selected file.
    - Query the **Value** property of the **list box** to get the file name. Combine it with the **folder** property to get the full file path.
    - Use **imread** to load the image.
    - Call **image** to display the image in the **axes**. The **axes** object is the first input argument.
    - Display the image size in the **label** for image information.
- Some notes:
  - ♦ To remove the axis labels/ticks of the **axes**, you can set these properties to empty from the component browser, or from within the program.
  - ♦ To call a method, you can use **app.methodName (...)**, where **app** does not need to be passed, or **methodName (app, ...)**.
  - ♦ To access a property (including GUI objects) in the app, always remember to use the form **app.propertyName**. Otherwise it will be treated simply as a local variable.