Let's start with a guided tour of the provided code. The first group of files we consider consists of these four:

DigitalPicture.java, SimplePicture.java, Picture.java, and Pixel.java.

These are concerned with generating and manipulating two-dimensional arrays that represent a rectangular graphical image. They can acquire all the necessary pixel ("picture element") information from an image file in any of the standard image formats (such as jpg, gif, png, bmp, and so on). They can also use the pixel information they contain in order to generate an image file.

DigitalPicture.java defines an interface specifying a collection of seventeen methods relating to image files, digital representations of images, and the transfer of information between images and their digital representations.

SimplePicture.java defines a class that implements the DigitalPicture interface (by implementing the seventeen specified methods) and provides a number of additional helper methods. It stores an image as a standard Java BufferedImage object that includes details of the color model used by the image and a data buffer containing a two-dimensional array of image pixels.

When working with image pixels, the SimplePicture class does so using instances of the Pixel class (defined in Pixel.java). Each Pixel object retains knowledge of the SimplePicture or Picture object to which it belongs and its x- and y-coordinates within that picture (relative to the top left corner of the picture).

Picture.java defines a class that is a subclass of SimplePicture. It is within the context of this class that you will be making most of your definitions while working on this lab.

The second group of files consists of these three:

PictureExplorer.java, PictureFrame.java, and ImageDisplay.java.

Together, these provide a graphical interface in which to display an image and explore the pixels of which it is comprised. The displayed image is viewed through a scrollable viewport; it can be zoomed in or out from 25% through 500%.

Of the remaining two files, FileChooser.java defines a class that helps the other classes to access the file system on your computer, and Lab06Runner.java provides the main method with whose help you can run the Lab06 project.