

1.10 Test-Driving a Java Application

In this section, you'll run and interact with an existing Java **Painter** app, which you'll build in a later chapter. The elements and functionality you'll see are typical of what you'll learn to program in this book. Using the **Painter**'s graphical user interface (GUI), you choose a drawing color and pen size, then drag the mouse to draw circles in the specified color and size. You also can undo each drawing operation or clear the entire drawing. [Note: We emphasize screen features like window titles and menus (e.g., the **File** menu) in a **sans-serif font** and emphasize nonscreen elements, such as file names and program code (e.g., `ProgramName.java`), in a fixed-width sans-serif font.]

The steps in this section show you how to execute the **Painter** app from a **Command Prompt** (Windows), shell (Linux) or **Terminal** (macOS) window on your system. Throughout the book, we'll refer to these windows simply as *command windows*. We assume that the book's examples are located in `C:\examples` on Windows or in your user account's `Documents/examples` folder on Linux or macOS.

Checking Your Setup

Read the Before You Begin section that follows the Preface to set up Java on your computer and ensure that you've downloaded the book's examples to your hard drive.

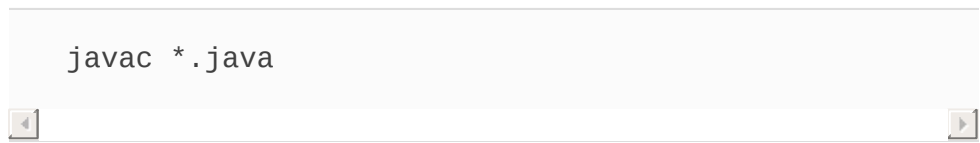
Changing to the Completed Application's Directory

Open a command window and use the `cd` command to change to the directory (also called a *folder*) for the **Painter** application:

- On Windows type `cd C:\examples\ch01\Painter`, then press *Enter*.
- On Linux/macOS, type `cd ~/Documents/examples/ch01/Painter`, then press *Enter*.

Compiling the Application

In the command window, type the following command then press *Enter* to compile all the files for the **Painter** example:



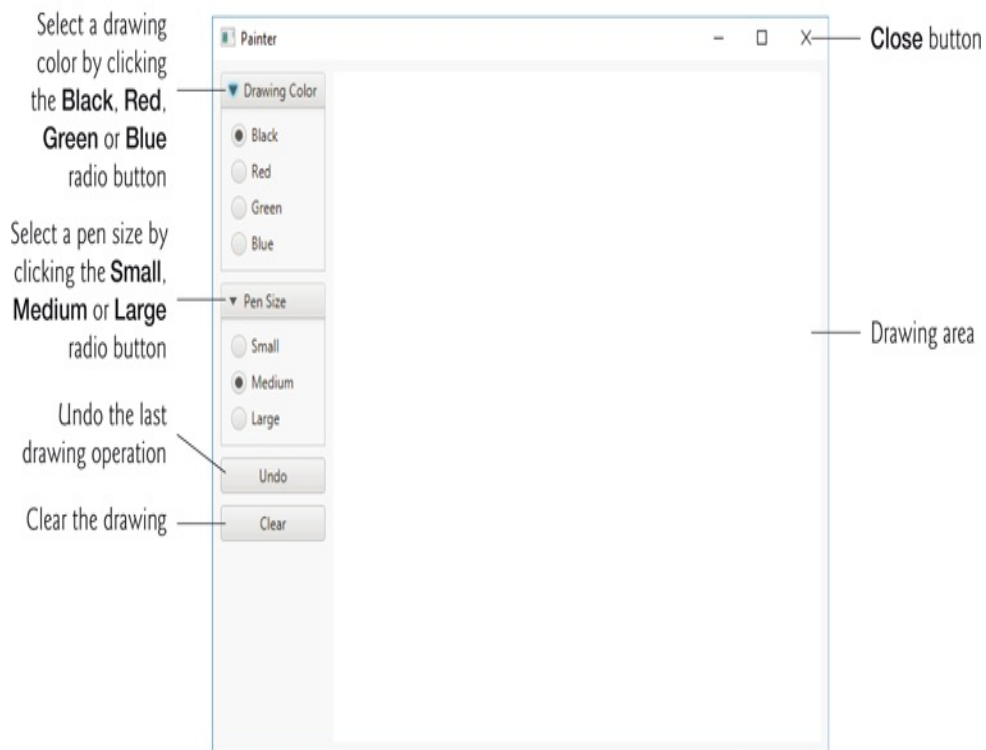
```
javac *.java
```

The `*` indicates that all files with names that end in `.java` should be compiled.

Running the Painter Application

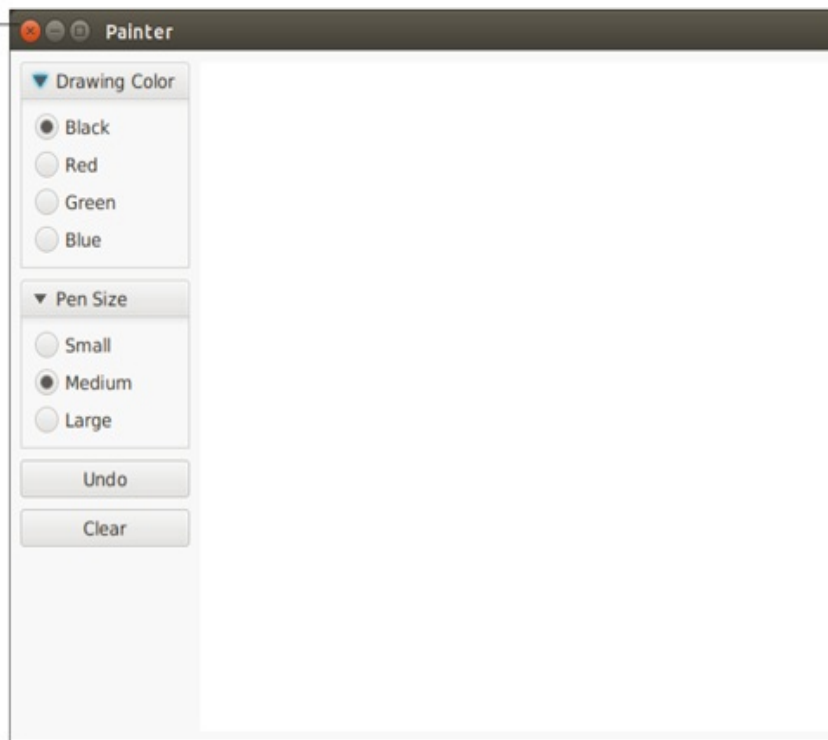
Recall from [Section 1.9](#) that the `java` command, followed by the name of an app's `.class` file (in this case, `Painter`), executes the application. Type the command `java Painter` then press *Enter* to execute the app. [Figure 1.11](#) shows the **Painter** app running on Windows, Linux and macOS, respectively. The app's capabilities are identical across operating systems, so the remaining steps in this section show only Windows screen captures. Java commands are *case sensitive*—that is, uppercase letters are different from lowercase letters. It's important to type `Painter` with a capital P. Otherwise, the application will *not* execute. Also, if you receive the error message, "Exception in thread "main" java.lang.NoClassDefFoundError: Painter," your system has a CLASSPATH problem. Please refer to the Before You Begin section for instructions to help you fix this problem.

a) **Painter** app running on Windows



b) **Painter** app running on Linux.

Close
button



c) **Painter** app running on macOS.

Close
button

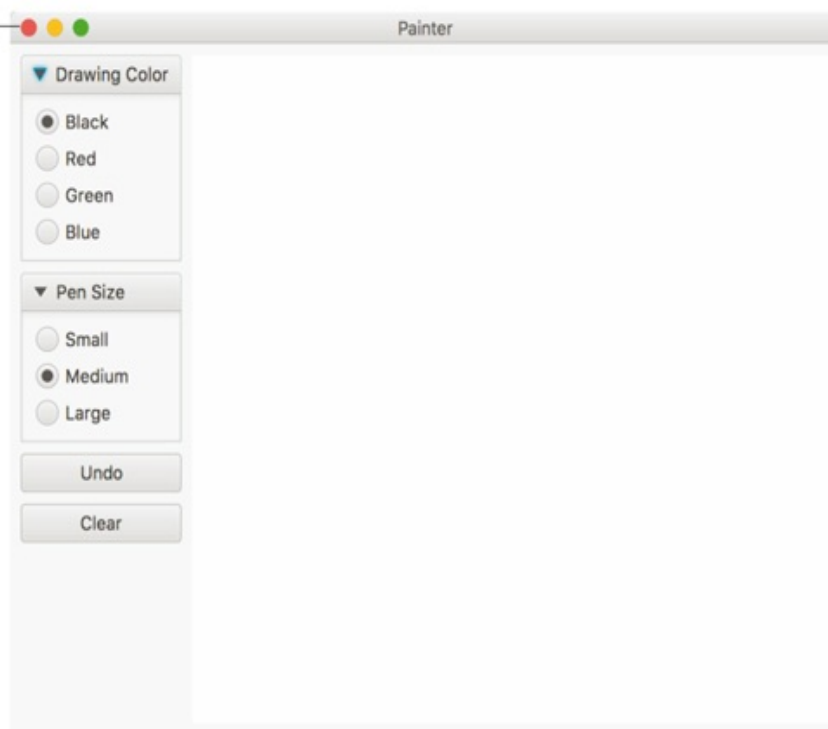


Fig. 1.11

Painter app executing in Windows, Linux and macOS.

Description

Drawing the Flower Petals

In this section's remaining steps, you'll draw a red flower with a green stem, green grass and blue rain. We'll begin with the flower petals in a red, medium-sized pen. Change the drawing color to red by clicking the **Red** radio button. Next, drag your mouse on the drawing area to draw flower petals ([Fig. 1.12](#)). If you don't like a portion of what you've drawn, you can click the **Undo** button repeatedly to remove the most recent circles that were drawn, or you can begin again by clicking the **Clear** button.

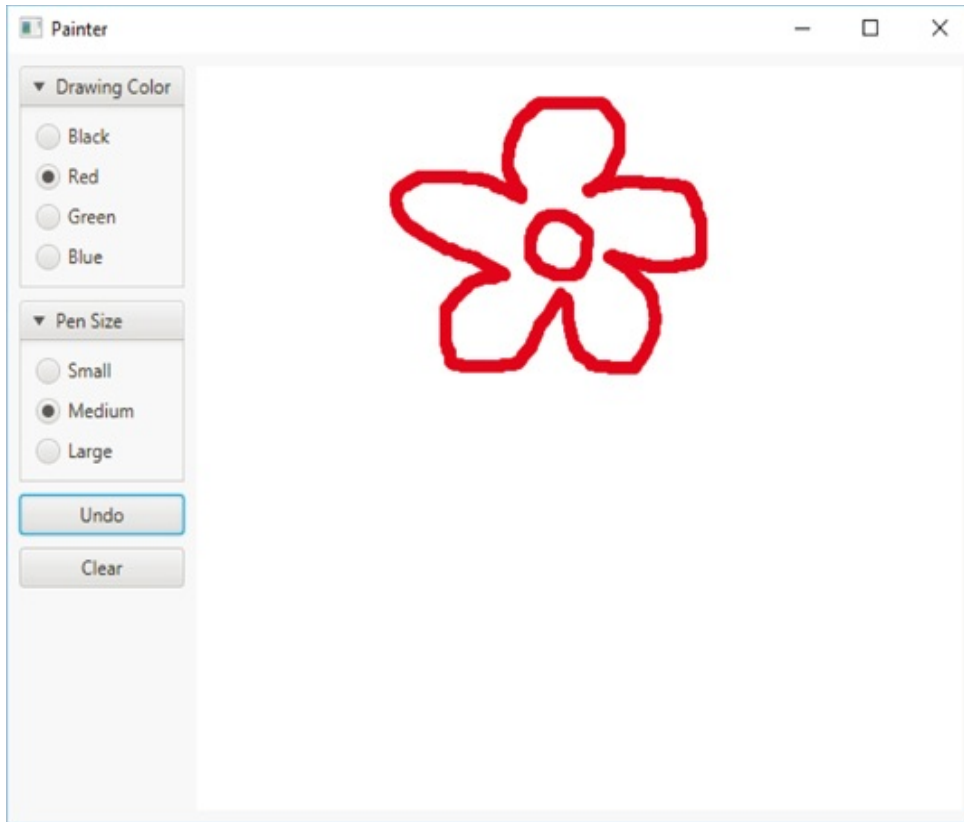


Fig. 1.12

Drawing the flower petals.

Drawing the Stem, Leaves and Grass

Change the drawing color to green and the pen size to large by clicking the **Green** and **Large** radio buttons. Then, draw the stem and the leaves as shown in [Fig. 1.13](#). Next, change the pen size to medium by clicking the **Medium** radio button, then

draw the grass as shown in [Fig. 1.13](#).

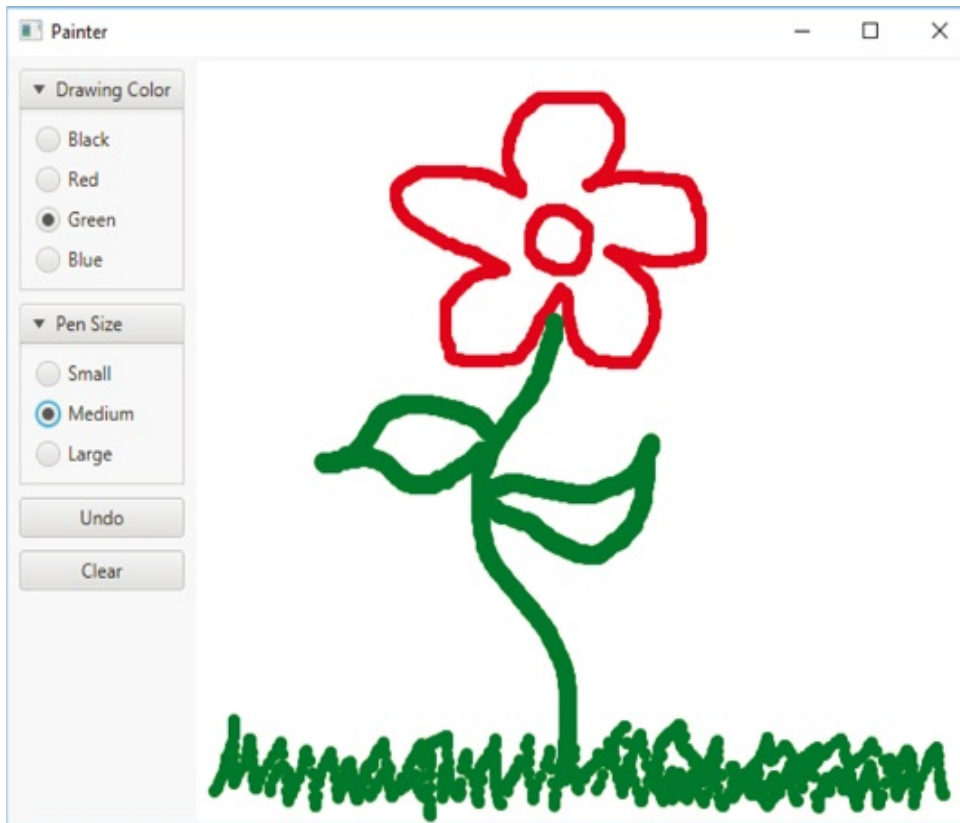


Fig. 1.13

Drawing the stem and grass.

Drawing the Rain

Change the drawing color to blue and the pen size to small by clicking the **Blue** and **Small** radio buttons. Then, draw some rain as shown in [Fig. 1.14](#).

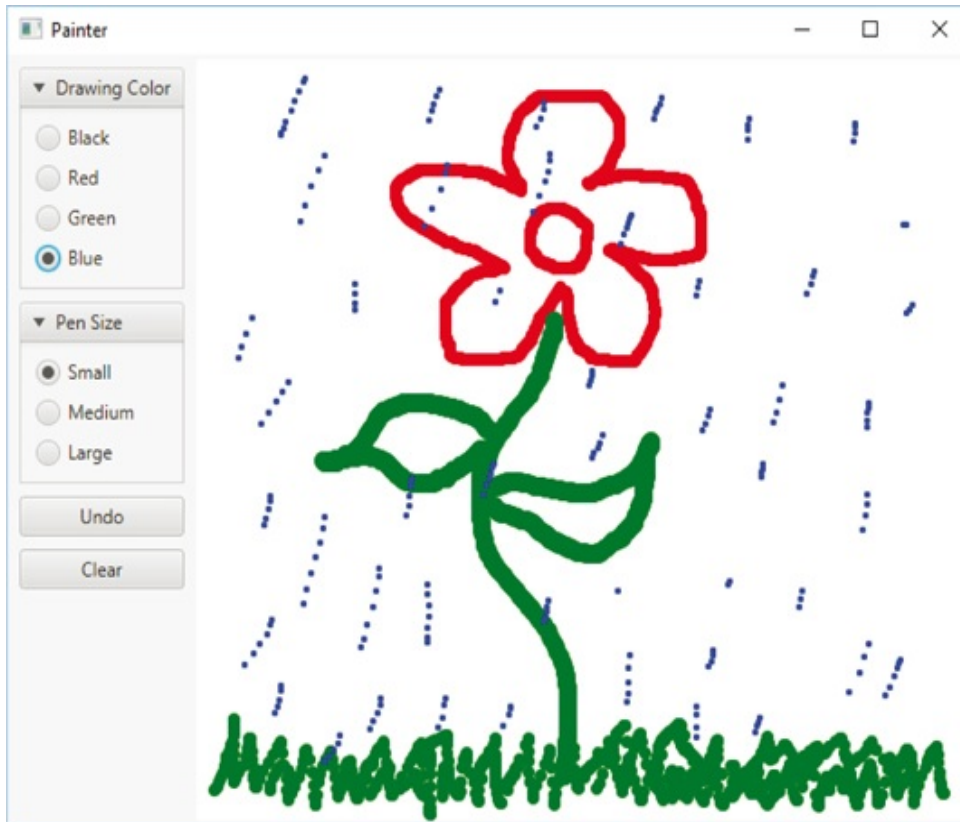


Fig. 1.14

Drawing the rain.

Exiting the Painter App

At this point, you can close the **Painter** app. To do so, simply click the app's close box (shown for Windows, Linux and macOS in [Fig. 1.11](#)).