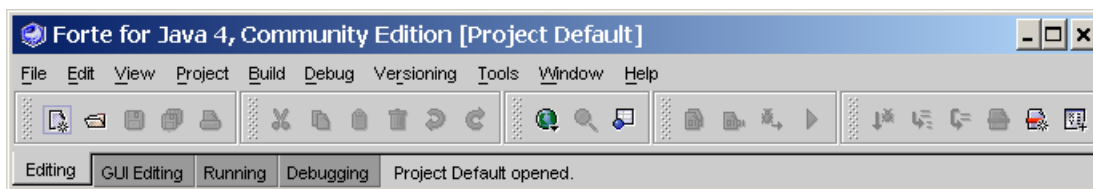


CHAPTER**1****Getting Started with Forte**

Assume you have successfully installed Forte on your machine. You can start Forte and create a project to hold the files. This chapter helps you to become familiar with Forte IDE and create a new project.

1.1 Forte Main Window

Start Forte from Windows, Linux, or Solaris. The Forte main window appears, as shown in Figure 1.1.



******PD: Please leave some space on top and bottom for labels. Labels will be provided at Proof stage. AU.***

Figure 1.1

The Forte main window is the command center for the IDE.


The Forte main window contains menus, toolbars, component palette, and five workspace tabs.

1.1.1 The Main Menu

The main menu is similar to that of other Windows applications and provides most of the commands you need to use Forte, including those for creating, editing, compiling, running, and debugging programs. The menu items are enabled and disabled in response to the current context.

1.1.2 The Toolbar

The toolbar provides buttons for several frequently used commands on the menu bar. The toolbars are enabled and disabled in response to the current context. Clicking a toolbar is faster than using the menu bar. For many commands, you also can use function keys or keyboard shortcuts. For example, you can save a file in three ways:

- Select *File, Save* from the menu bar.
- Click the "save" toolbar button ().
- Use the keyboard shortcut *Ctrl+S*.

TIP:

You can display a label known as *ToolTip* for a toolbar button by pointing the mouse to the button without clicking.

1.1.3 Workspaces

A workspace is a collection of top-level windows that are pertinent to performing certain types of operations, such as debugging or editing. The workspace windows can be displayed from the workspace tabs or from the *View* menu.

1.2 Creating a Project

When you use Forte for the first time, a default project is opened. A project in Forte holds the information about the project, such as program files and IDE environment settings. You can use the default project or create your own project. For convenience, a new project will be created to hold all the examples in the book. Here are the steps to create this project:

1. Choose *Project, Project Manager* to display the Project Manager, as shown in Figure 1.2.
2. Click *New* to display the Create New Project dialog box, as shown in Figure 1.3.
3. Type Tutorial in the Project Name field and click *OK* to create the new project. The Explorer window is displayed, as shown in Figure 1.4. If it is not shown, choose *View, Explorer* from the main window.

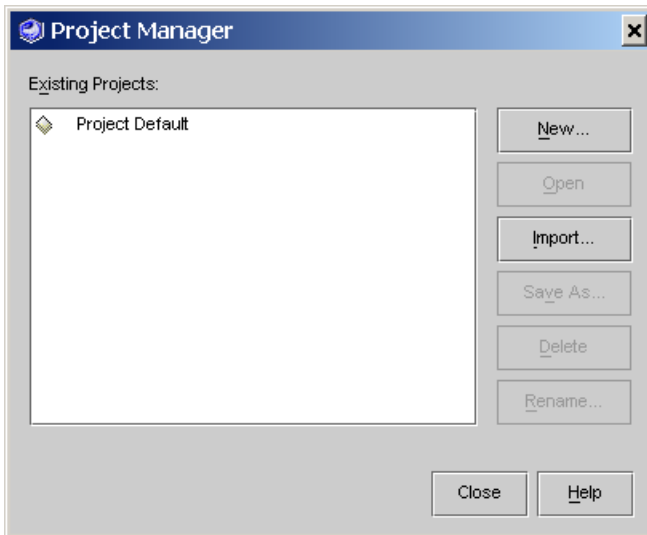


Figure 1.2

You may create a new project, open or delete an existing project, rename a project, or import a project.

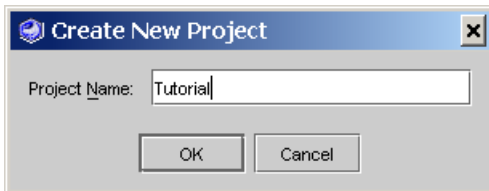


Figure 1.3

You need to enter a new project name in the Create New Project dialog box.

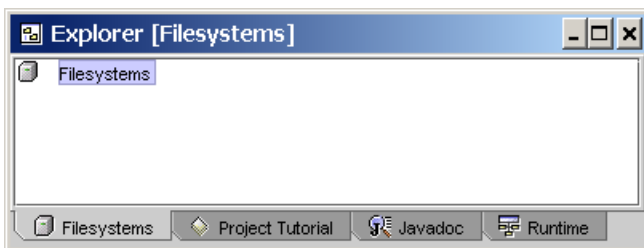


Figure 1.4

The Explorer window lets you explore the packages, files, and objects in the project.

NOTE:

Figures 2.2 and 2.4 may look different on your screen if you have installed Forte differently.

The Explorer provides a tree view of packages, files, and other objects and provides a starting point for programming. You can browse files there or monitor running processes and debugging.

The Explorer has four tabs: Filesystems, Project, Javadoc, and Runtime. The *Filesystems* tab displays any file hierarchies you have mounted (and chosen to display) in the IDE.

NOTE:

The use of the Project, Javadoc, and Runtime tabs will be introduced later. Forte is a powerful and sophisticated tool. You will learn many of its features in this tutorial.

1.3 File Systems

File systems are used to hold files in the project. To use file systems, you need to first mount them. By default, no file systems are mounted in the project, as shown in Figure 1.4.

For convenience, I will create a new file system in **c:\tutorial** to hold all the examples in the tutorial. Here are the steps to create it:

1. Right-click *Filesystems* in the Explorer to display a context menu, as shown in Figure 1.5. Choose *Mount, Local Directory* to display the Local Directory wizard, as shown in Figure 1.6.
2. You may create a new directory from the operating system or within the Local Directory dialog box. To create it from the Local Directory dialog box, change the directory to Local Disk (c:) in the Look In combo box and click the Create New Folder icon, as shown in Figure 1.6. This action creates a new folder named **New Folder**, as shown in Figure 1.6. Right-click on this item and rename it **tutorial**, as shown in Figure 1.7.
3. To mount the **c:\tutorial** folder, type tutorial in the File name field and click Mount, as shown in Figure 1.7.

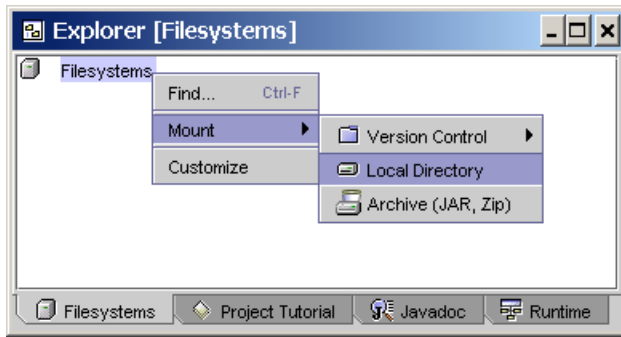


Figure 1.5

You can mount a file system from the context menu of the Filesystems node in the Explorer.

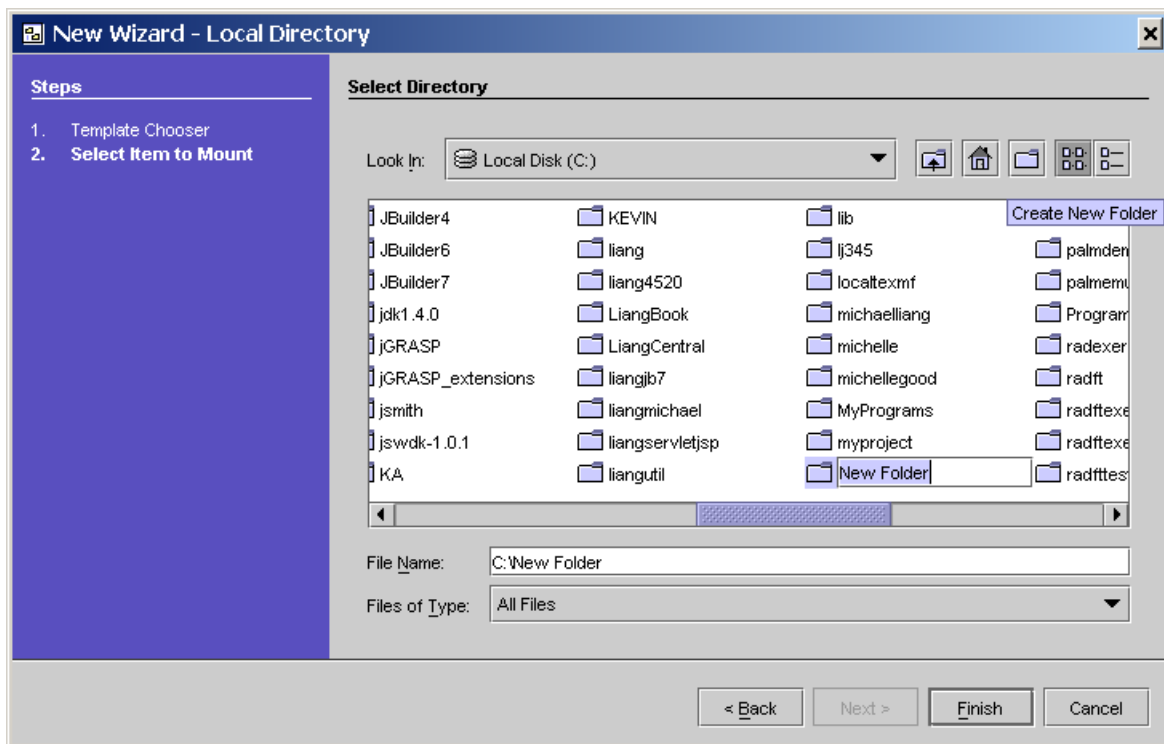


Figure 1.6

You can create a new directory from the Local Directory wizard.

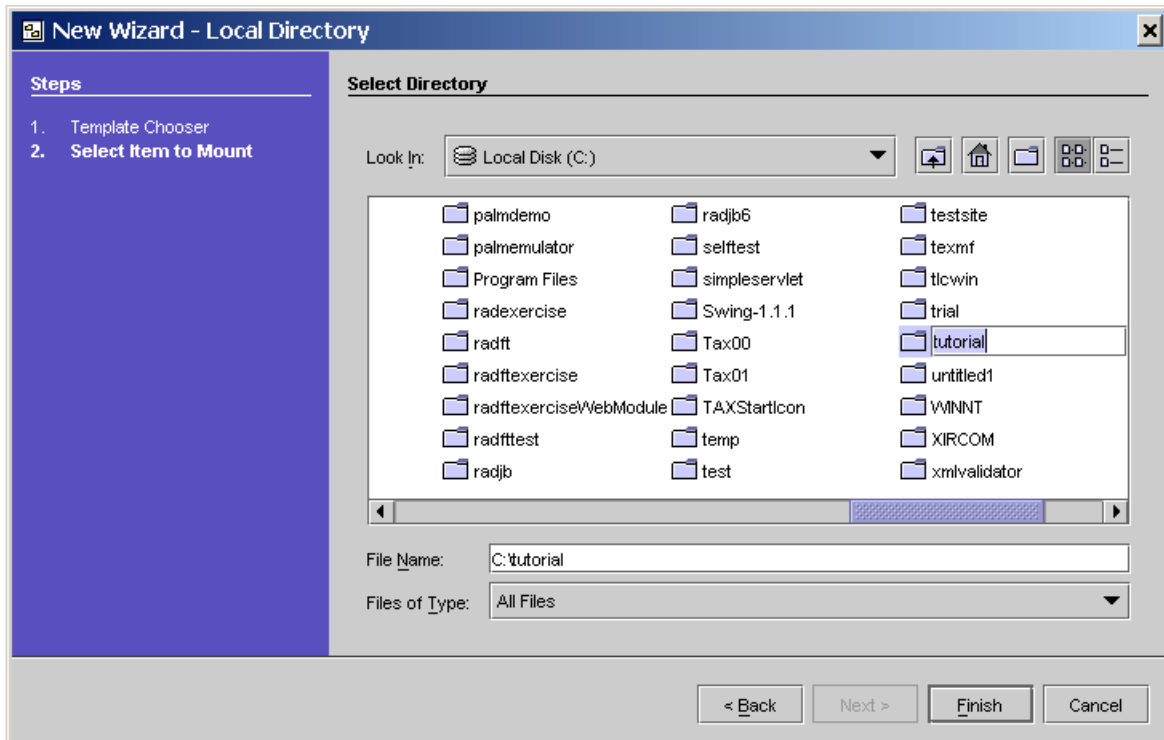


Figure 1.7

You can mount an existing directory from the Mount Filesystem dialog box.

TIP:

Many items in the various windows in Forte have an associated context-sensitive popup menu. You can display a context menu by pointing to the item in the window and right-clicking the mouse button.

TIP:

You can work with objects in the Explorer using the commands found on their contextual menus (displayed by right-clicking on the node) as well as on the menus in the main window.

NOTE: If a file directory is no longer needed, you can unmount it by choosing Unmount Filesystem in the context menu of file directory in the explorer, as shown in Figure 1.8.

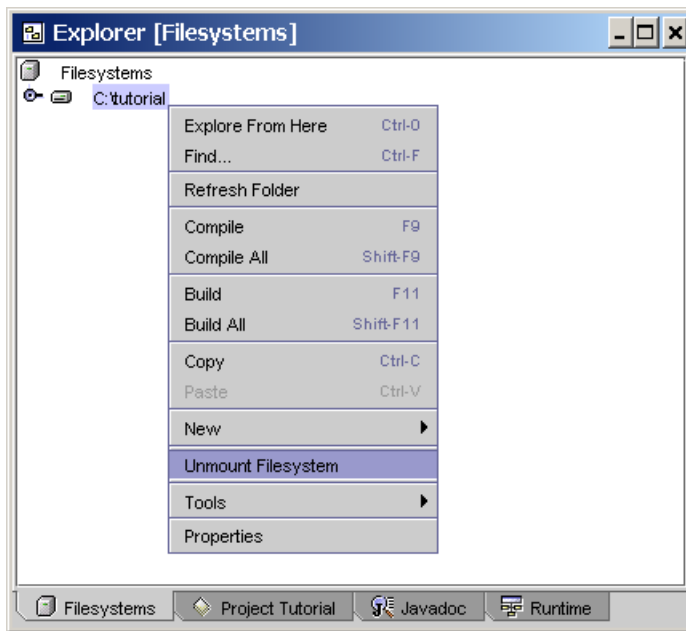


Figure 1.8

You can unmount a directory from the context menu of the directory in the Explorer.

1.4 Creating a Java Program

Now you can create the program in the `c:\tutorial` directory. Here are the steps to create a simple Java application.

1. Right-click `c:\tutorial` in the Explorer to display a context menu. Choose *New, Classes, Class* (see Figure 1.9) to display the Class wizard, as shown in Figure 1.10.
2. Type Welcome in the Name field, and click *Finish* to create a template for Java class. Welcome now appears in the Explorer, and its source code is displayed in the Source Editor, as shown in Figure 1.11.
3. Type the code in the Source Editor, as shown in Figure 1.12.

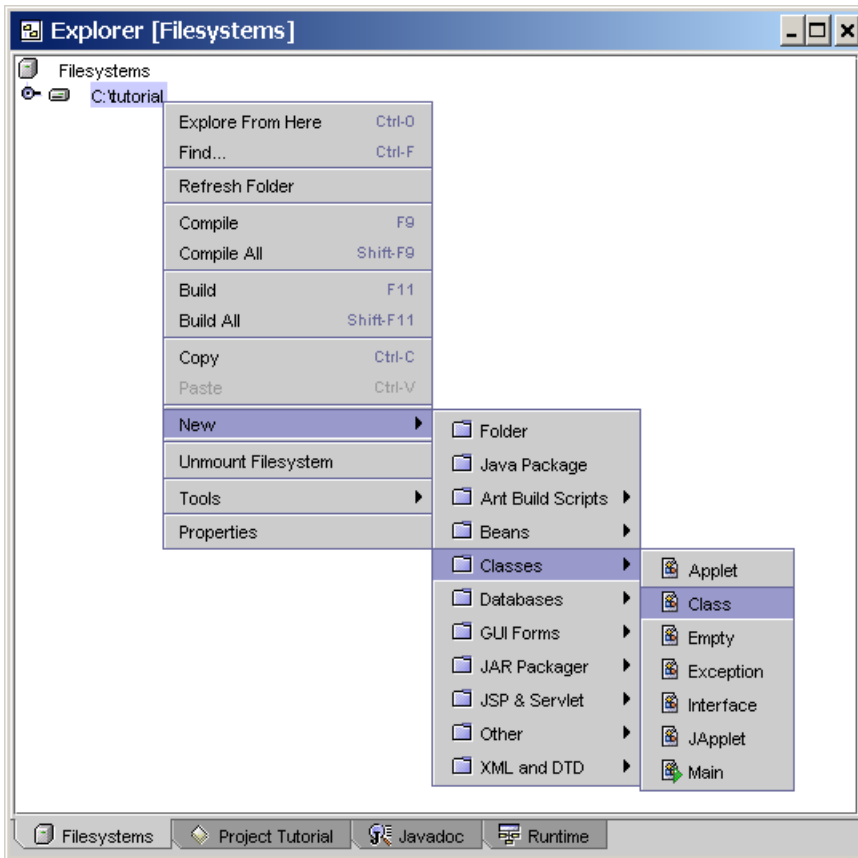


Figure 1.9

You can create classes from the Explorer.

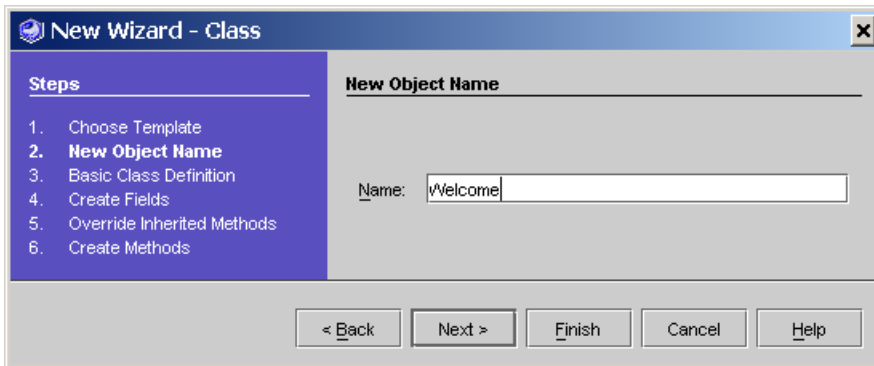


Figure 1.10

The Class wizard can be used to create a new class template.



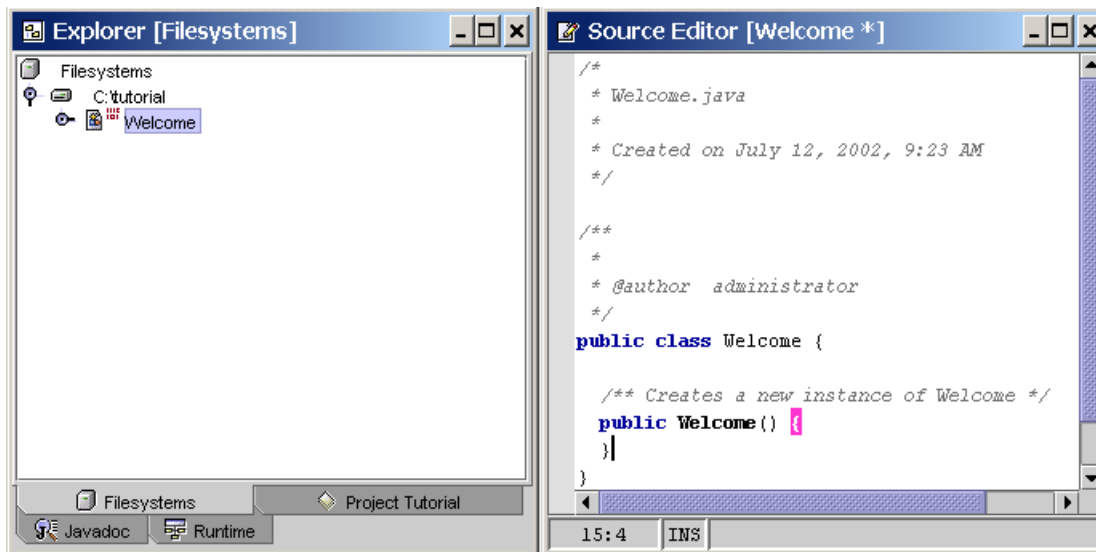


Figure 1.11

A template for the Welcome class was created.



Figure 1.12

The Source Editor window enables you to edit Java source code.

NOTE:

You may also choose *New, Classes, Main* in the context menu of the node *c:\tutorial* to create a class with a main method.

NOTE:

As you type, the code completion assistance may automatically come up to give you suggestions for completing the code. For instance, when you type a dot (.) after *System* and pause for a second, Forte displays a popup menu with suggestions to complete the code, as shown in Figure 1.21. You can then select the appropriate item from the menu to complete the code.

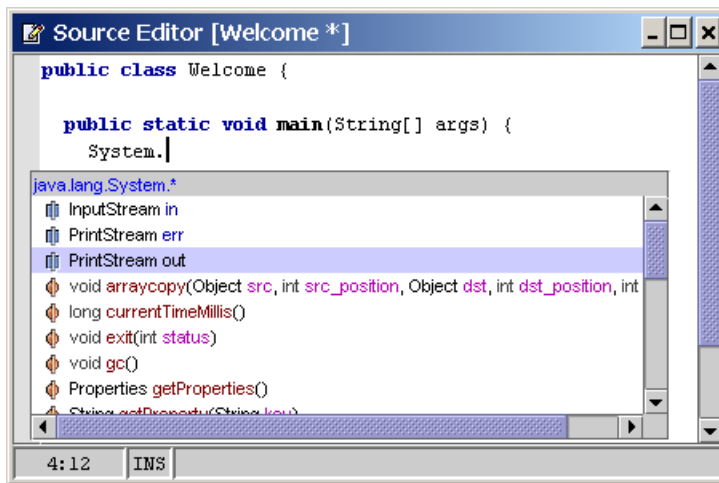


Figure 1.13

The Code Completion popup menu is automatically displayed to help you complete the code.


CAUTION:

Java source programs are case-sensitive. It would be wrong, for example, to replace main in the program with Main. Program file names are case-sensitive on UNIX and generally not case-sensitive on PCs, but file names are case-sensitive in Forte. If you have to change the file name, you can do it from the Explorer by choosing Rename in the context menu of the file node.

1.5 Compiling a Java Program

To compile **Welcome.java**, use one of the methods shown below. (Be sure that the node **Welcome.java** is selected in the Explorer.)

[BL] Choose *Build*, *Compile*, or press F9.




- [BL] Right-click Welcome.java to display a context menu and choose Compile.
- [BL] Click the Build toolbar button ()

[BX] Right-click in the Source Editor for Welcome.java and choose *Compile*.

NOTE:

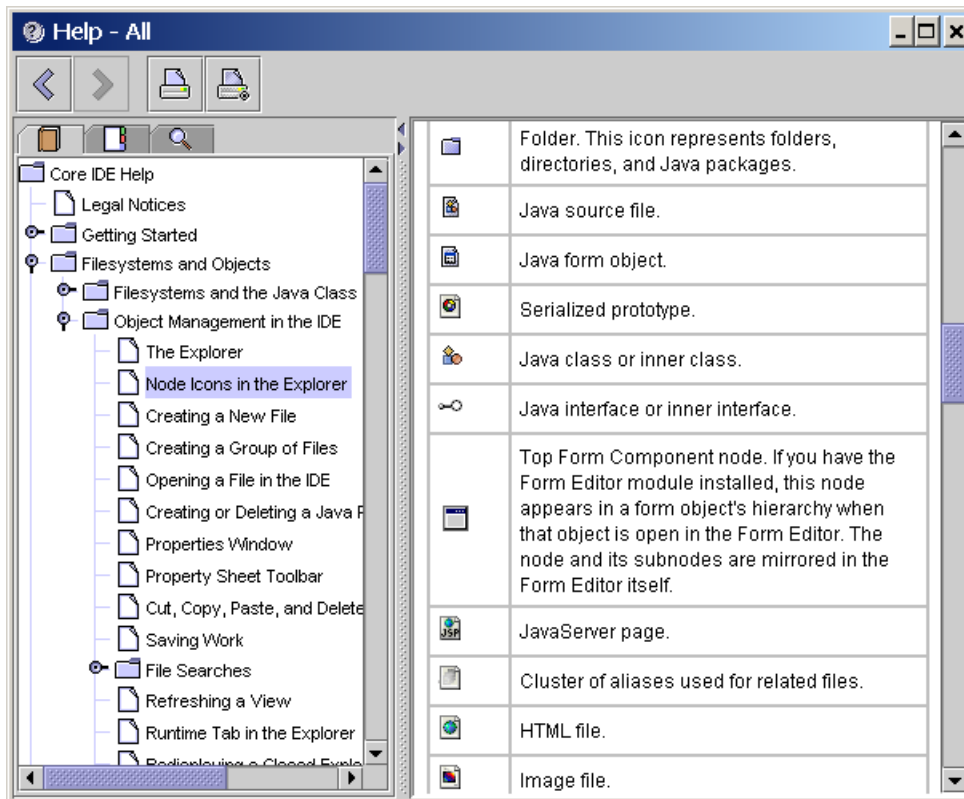
When you compile the file, it will be automatically saved.

NOTE:

The icon for Java source code is . A Java source code may have an additional icon , which indicates that the file is not compiled. If the class has a main method, the icon is  after the class is compiled.

TIP:

You can find descriptions of the node icons in the Explorer from Forte Help. Choose *Help, Contents* from the main window and select *Core IDE Help, Filesystems and Objects, Object Management in the IDE, Node Icons in the Explorer* to display the descriptions for the icons, as shown in Figure 1.14.

**Figure 1.14**

You can find descriptions of node icons in the Explorer from Forte Help.

The compilation status is displayed in the Output window, as shown in Figure 1.15. If there are no syntax errors, the *compiler* generates a file named **Welcome.class**, which is stored in `c:\tutorial`. The file structures for the examples in this tutorial are shown in Figure 1.16. `Welcome.java~` is the backup file for `Welcome.java`.

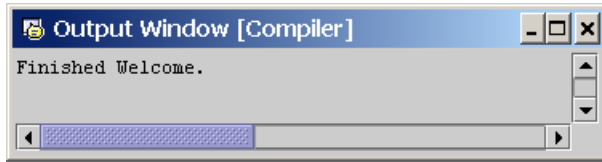


Figure 1.15

The compilation status is displayed in the Output window.

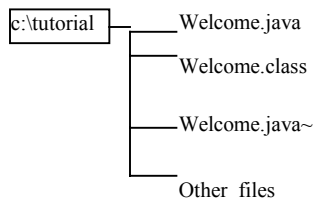



Figure 1.16

Welcome.java and Welcome.class are placed in c:\tutorial.

1.6 Executing a Java Application

To run **Welcome.class**, use one of the methods shown below. (Be sure that **Welcome.java** is selected in the Explorer.)

[BL] Choose Build, Execute, or press F6.

- [BL] Right-click Welcome.java to display a context menu and choose Execute.
- [BL] Click the Execute toolbar button ().

[BX] Right-click in the Source Editor for Welcome.java and choose Execute.

When this program executes, Forte displays the output in the Output window, as shown in Figure 1.17.

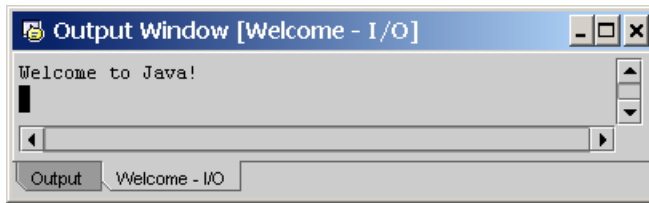


Figure 1.17

The execution result is shown in the Output window.

NOTE:

The Execute command invokes the Compile command if the program is not compiled or was modified after the last compilation.

TIP:

If the Output window is not displayed, choose *View, Output Window* to display it.

1.7 Using a Multiple Document Interface

By default, the Forte IDE uses a primary main window with a set of supplementary windows for Explorer, Source Editor, Output, and so on. This is known as the *single document interface (SDI)*. You can also switch to a *multiple document interface (MDI)*, which confines all supplementary windows inside the main window. To set up a new interface, choose *Tools, Setup Wizard* to display the Setup wizard, as shown in Figure 1.18. To use the MDI interface, select MDI from the Window mode section. Click *Finish* to switch the new interface, as shown in Figure 1.19. You can also use the commands in the Windows menu from the main window to attach the windows, dock the windows, and create new single frames, multi-tab frames, and split frames.

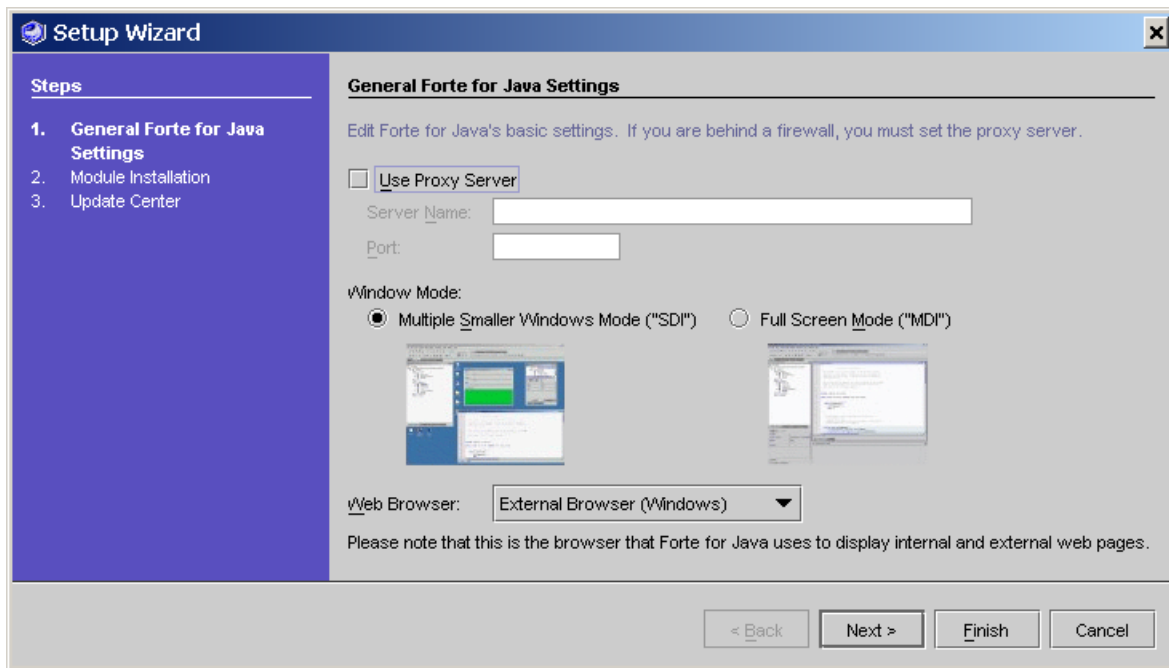


Figure 1.18

You can set up a new IDE interface from the Setup wizard.

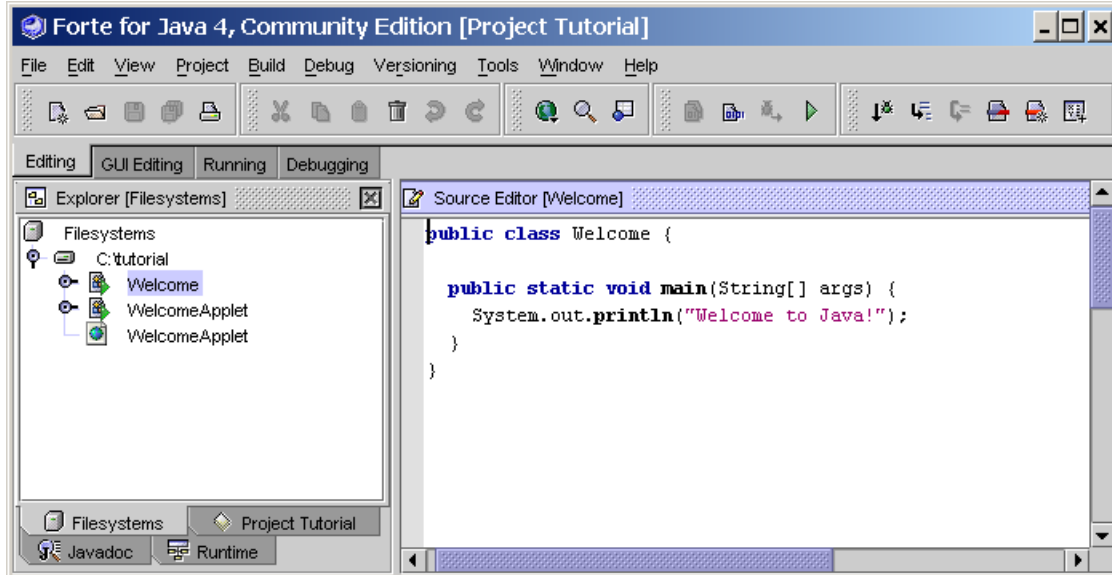


Figure 1.19

You can use MDI interface in Forte, which contains multiple documents in a single window.

1.8 Forte's Online Help

Forte provides a large number of documents online, giving you a great deal of information on a variety of topics pertaining to the use of Forte.

To access online help, choose Help, Contents to display Forte Help, as shown in Figure 1.20.

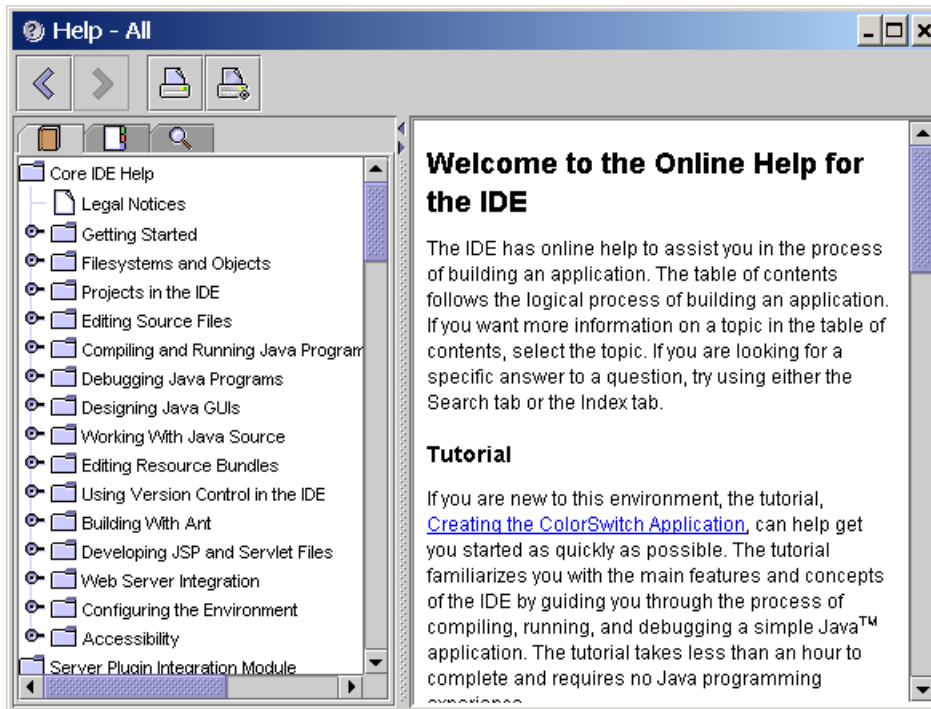


Figure 1.20

All help documents are displayed in Forte Help.

Forte Help behaves like a Web browser and contains the toolbar buttons, navigation pane, and content pane. The toolbar buttons contain four buttons: **Previous**, **Next**, **Print**, and **Print Setup**. The Previous, and Next buttons are to go to the first, previous, and next topic in the history list. The Print button prints the document in the content pane. The Print Setup button enables you to set up the print layout.

The navigation pane contains three tabs: **Contents**, **Index**, and **Search**. The Contents tab displays available documents. The table of contents of the document is displayed in a tree-like list in the navigation pane. To view a given topic, select the node in the tree associated with the topic. Forte Help displays the document for the topic in the content pane.

The Index tab shows the index entries for the current document. The Search tab shows the combined index entries for all the available documents in Forte.

1.9 Forcing a Program to Terminate

If a program does not terminate due to a logic error, you can force it to terminate by clicking *Terminate* in the context menu of the process in the Runtime tab of the Explorer. For example, suppose the process named Test has an infinite loop. You can terminate it by clicking *Terminate* in the context menu of the process, as shown in Figure 1.21.

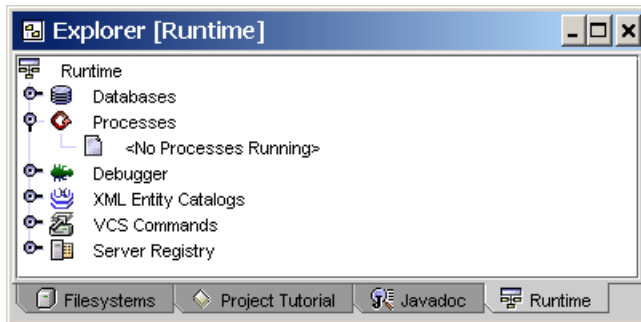


Figure 1.21

You can force a program to terminate from the Runtime tab of the Explorer.

1.10 Using Packages (Optional)

The Welcome class created in Section 1.4 "Creating a Program" does not have the package statement. If you want to create classes with the package statement, you need to first create a package from the Explorer. Here are the steps to create a package:

1. In the context menu of `c:\tutorial` in the Explorer, choose *New, Java Package* to display the Package wizard, as shown in Figure 1.22.

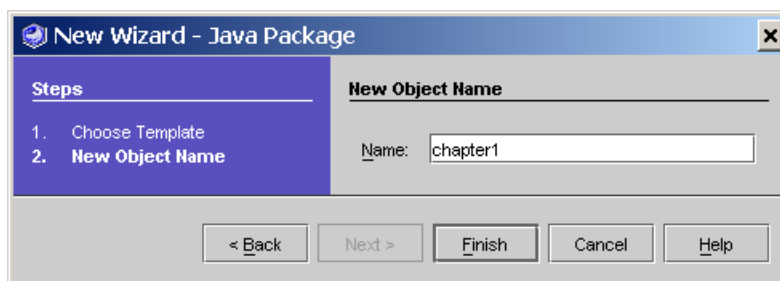


Figure 1.22

The Package wizard enables you to create a package.

2. Type a package name (e.g. chapter1) in the Name field and click *Finish*. You will see the package node appear in the Explorer, as shown in Figure 1.23.

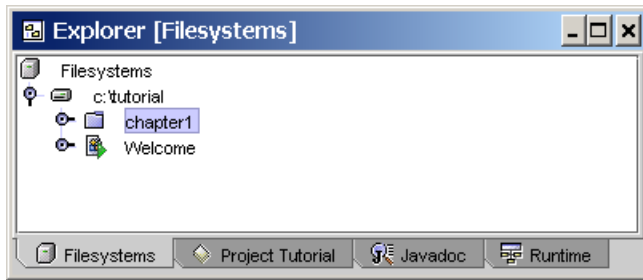


Figure 1.23

The package node appears in the Explorer.

You can now create and run a program in the package.

1. In the context menu of *chapter1*, choose *New, Classes, Class* to display the Class wizard. Type AnotherWelcome in the Name field and click *Finish* to create a new class named AnotherWelcome in the chapter1 package. The created class is shown in Figure 1.24.

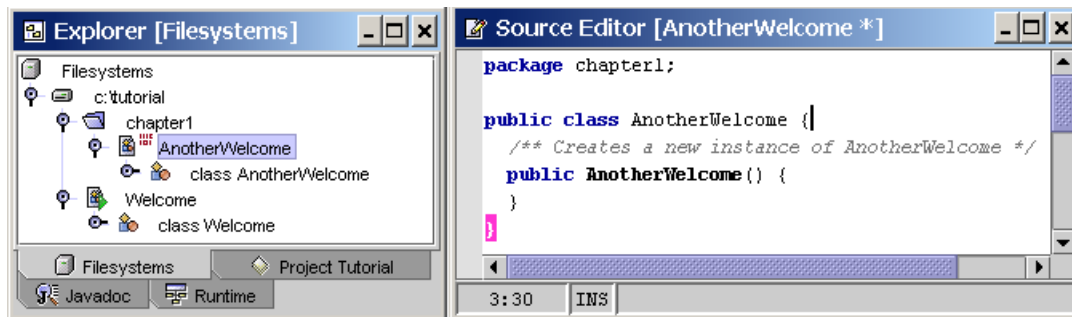
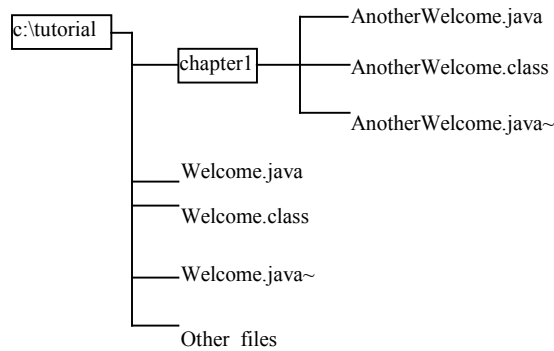


Figure 1.24

The AnotherWelcome class was created in the u package.

3. Add the following main method in the class and run the program by choosing *Execute* in the context menu of *AnotherWelcome.java* in the Explorer. Forte compiles and runs the program and displays the output in the Output window.

NOTE: The package in Java corresponds to the directory in the file system. **chapter1** is also a directory tutorial. The bytecode for the class *AnotherWelcome* is stored in the directory **chapter1**. The file structures for the examples in this chapter are shown in Figure 1.25.

**Figure 1.25**

AnotherWelcome.java and *AnotherWelcome.class* are placed in *c:\tutorial\chapter1*.

1.11 Run Java Applications from the Command Line

So far you have run the programs in JBuilder IDE. You also can run the program standalone directly from the operating system. Here are the steps in running the **Welcome** application created in Section 1.4 from the DOS prompt.

1. Start a DOS window by clicking the Window's Start button, Programs, MS-DOS Prompt in Windows.
2. Type the following commands to set up proper environment variables for running Java programs in the DOS environment in Windows:

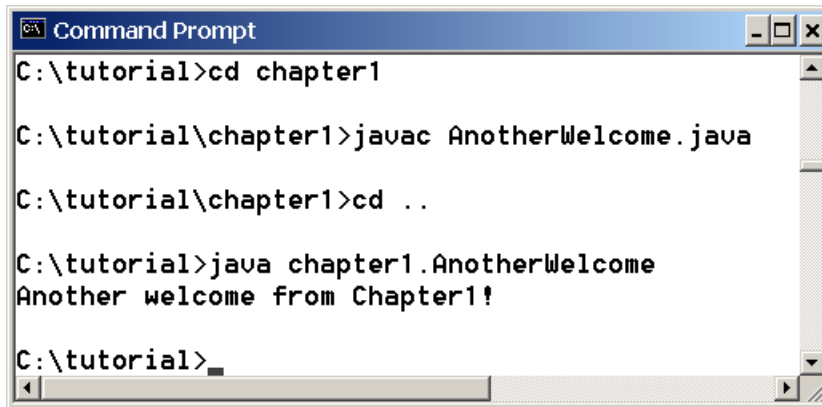
```
set path=%path%;c:\j2sdk1.4.0_01\bin
set classpath=.;%classpath%
```
3. Type **cd c:\totutorial** to change the directory to **c:\tutorial**.
4. Type **java Welcome** to run the program. A sample run of the output is shown in Figure 1.26.

```
Command Prompt
C:\tutorial>javac Welcome.java
C:\tutorial>java Welcome
Welcome to Java!
C:\tutorial>
```

Figure 1.26

You can run the Java program from the DOS prompt using the **java** command.

NOTE: To run `AnotherWelcome` in the `chapter1` package created in Section 1.10, type **java chapter1.AnotherWelcome** from the `c:\tutorial` as shown in Figure 1.27.



```
Command Prompt
C:\tutorial>cd chapter1
C:\tutorial\chapter1>javac AnotherWelcome.java
C:\tutorial\chapter1>cd ..
C:\tutorial>java chapter1.AnotherWelcome
Another welcome from Chapter!
C:\tutorial>
```

Figure 1.27

If a class has the package statement, you have to specify its full path including the package name.

Insert the following two lines

```
set path=%path%;c:\j2sdk1.4.0_01\bin
set classpath=.;%classpath%
```

in the `autoexec.bat` file on Windows 95 or Windows 98 to avoid setting the environment variables in Step 2 for every DOS session. On Windows NT or Windows 2000, select System from the Control Panel to set the environment variables.

Setting environment variables enables you to use the JDK command-line utilities. The `java` command invokes the Java interpreter to run the Java bytecode.

NOTE: You can also compile the program using the `javac` command at the DOS prompt as shown in Figure 1.26.