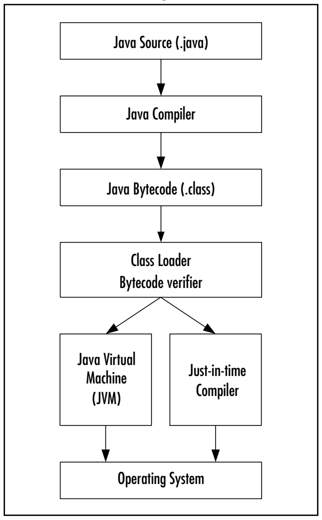
Contents

Java Code Cycle



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Mathematical Operators

Operator	Definition
+	Addition
–	Subtraction
*	Multiplication
/	Division
%	Modulus

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Arrays

- Standard C# arrays are identical to their Java counterparts.
- C# provides two different kinds of multidimensional arrays, rectangular and jagged.
- A rectangular array has equal dimensions, a jagged array does not.
- The *params* keyword can be used to specify that an array of unknown dimensions will be passed to a method.

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NOTE

Only nested classes permit the use of the *new* keyword. The *new* modifier specifies that the class hides an inherited member by the same name. Inner classes and Inheritance will be discussed in Chapter 6.

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Frequently Asked Questions

Q: Does C# support multiple inheritance?

A: Yes and no—just like Java, C# allows single inheritance of classes and multiple inheritance of interfaces.

Q: Does Java support inner classes?

A: Yes. C# supports only one kind of inner class compared to Java's four.

Unboxing

Unboxing is the act of converting an object back into a value type. The syntax for this process looks very similar to explicit casting in Java, as the following C# code demonstrates:

```
int x = 29;

object xObj = x; //
Boxing

int x1 = (int)xObj;
// Unboxing
```

Delegates

- Delegates are similar to C/C++ function pointers.
- Delegates reference a method.
- Delegates are object-oriented, type-safe, and secure.

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Creating Assemblies

- Assemblies are the C# equivalent to Java's packages and are used to segment namespaces.
- Assemblies in the .NET architecture can be written and compiled in different languages, and still work together.
- All information about an assembly is stored in the assembly manifest.

Developing & Deploying…

Monitor.Wait() Parameters

The *Wait()* method can take on a variety of parameters, including an integer specifying the number of milliseconds to wait as well as a *TimeSpan* structure. In the event that the specified time expires before it is notified by a corresponding *Pulse()*, *Wait()* returns a *boolean* value of *false*.

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Debugging…

The Directory Separator

One of the most frequent bugs when programming with the file system is the backslash used to identify directory structures. Notice the need to use two backslashes in the preceding example. This is because the backslash is an escape character, so it is necessary to nullify the first by using two backslashes. An even better solution is to indicate a verbatim string literal by placing the @ symbol in front of the string, as follows:

```
String filename =
@"c:\Program Files";
```

Financial Calculator

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Creating Proxy Objects

To interact with a Web service you will need to create a proxy object that will act as the middleman between your application and the service. The proxy object can be generated from the WSDL file in two ways:

- Using the *wsdl.exe* command line utility
- Using Visual Studio.NET

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Unmanaged Code

The interoperability services in .NET could be categorized into the following scenarios:

- .NET assembly (managed) calling a single COM DLL (unmanaged)
- .NET assembly (managed) calling a COM object or an ActiveX control (unmanaged)
- COM DLL (unmanaged) calling a .NET assembly (managed)

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What Is J#?

J# is a complete implementation of the Java language specification. J# allows the majority of existing Java applications to run after recompilation or after binary conversion.