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# Introducing Component-Oriented Programming

Over the last decade, component-oriented programming has established itself as the predominant software development methodology. The software industry is moving away from giant, monolithic, hard-to-maintain code bases. Practitioners have discovered that by breaking a system down into binary components, they can attain much greater reusability, extensibility, and maintainability. These benefits can, in turn, lead to faster time to market, more robust and highly scalable applications, and lower development and long-term maintenance costs. Consequently, it's no coincidence that component-oriented programming has caught on in a big way.

Several component technologies, such as DCOM, CORBA, and Java Beans now give programmers the means to implement component-oriented applications. However, each technology has its drawbacks; for example, DCOM is too difficult to master, and Java doesn't support interoperation with other languages.

.NET is the newest entrant, and as you will see later in this chapter and in the rest of the book, it addresses the requirements of component-oriented programming in a way that is unique and vastly easier to use. This is little surprise because the .NET architects learned from the mistakes of previous technologies, as well as from their successes.

In this chapter, I'll define the basic terms of component-oriented programming and summarize the core principles and corresponding benefits of component-oriented programming. These principles apply throughout the book, and I'll refer to them in later chapters when describing the motivation for a particular .NET design pattern. Component-oriented programming is different from object-oriented programming, although the two methodologies have things in common. You could say that component-oriented programming sprouted from the well of object-oriented programming methodologies. Therefore, this chapter also contrasts component-oriented programming and object-oriented programming, and briefly discusses .NET as a component technology.