Chapter 7
Client and Service

Generally, a client initiates communication to the service that is why it is included first in the title of this chapter. This chapter provides in depth knowledge of client and different ways to create client code. It also explores details various service behaviors which can be helpful to implement advanced programming concepts in WCF.

After completing this chapter, you will be able to:

- Gain understanding about above client.
- Learn various element available which are generated in client code
- Gain understanding about service.
- Practical implementation of message patterns.
- Gain understanding about service behaviors.
- Implement concurrency and session management.
- Handle the exception in WCF service and client.
A client is a piece of code which initiates communication with the service. It communicates with the service through the endpoint. There are certain underlying objects which are generated while consuming the service using the proxy class object. A programmer must know about these objects. The communication between client and service is illustrated in Figure 1. As illustrated in Figure 1, a proxy object is available at client side which communicates with the service using endpoints generated on both sides. Proxy generation is done in two ways.

- One way is to use Add Service Reference option of visual studio which calls the svcutil.exe program in the background. This option is already discussed in the preceding chapters, but readers are not aware about that the proxy class generation is done by the utility called svcutil.exe.
- Another way is to create object of ChannelFactory class which is available in System.ServiceModel. This option is tailor made for the .NET client, but it will not work for interoperability with other languages.

These two methods are explained in great details in the following sections.

**Generating proxy using svcutil.exe**

To apply this option, modify the code of service discussed for data contract and let us follow the steps mentioned below:

**Step 1:** Create the WCF service library in visual studio and write the code of service contract as illustrated in Example 1.

*Figure 1. Client and service communication*
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