CHEAT SHEET

This cheat sheet is designed as a way for you to quickly study the key points of this chapter.

Arrays and collections

➤ Arrays all inherit from the `System.Array` type.

➤ There are numerous collection types that are similar to arrays, but they offer much more flexibility for manipulating the data contained in the collection.

➤ `ArrayList`, `HashTable`, `Queue`, `SortedList`, and `Stack` are all in the `System.Collections` namespace.

➤ `Dictionary<TKey, TValue>`, `List<T>`, `Queue<T>`, `SortedList<TKey, TValue>`, and `Stack<T>` are all in the `System.Collections.Generic` namespace.

➤ The generic collection classes are used when you want all objects to be of the same type.

➤ Queues are first-in-first-out.

➤ Stacks are last-in-first-out.

➤ You can implement the `IComparable` interface to control how two objects are compared.

➤ A `Dictionary` object stores a key\value pair.

➤ Custom collections inherit from the `CollectionBase` class.

ADO.NET

➤ ADO.NET is a set of classes used to execute commands on a database.

➤ A `Command` object is used to call a stored procedure or execute a dynamic SQL statement.

➤ The Command's `ExecuteNonQuery` method is used to execute nonresult-returning queries such as an `INSERT` or `UPDATE` command.

➤ A `DBDataReader` object is a read-only, forward-only cursor connected to the database.

➤ The Command's `ExecuteScalar` method is used to return a single value from a database such as when a query returns a `SUM` or `COUNT`.

➤ The Command's `ExecuteXMLReader` method returns the data represented as XML. Use the `FOR XML` clause in SQL Server to select the data as XML.

➤ A `DataSet` is a disconnected resultset and can contain one or more `DataTables`. A `DataAdapter` is used to fill a `DataSet`.

➤ A `DataAdapter` can be used with a `DataSet` to add, update, or delete records in a database.

ADO.NET Entity Framework

➤ The Entity Framework is an ORM tool that masks the syntax for using ADO.NET to communicate with a database.

➤ An Entity Framework Model contains the classes that represent the objects in a database.

➤ Stored procedures are methods on an Entity Framework Model.

WCF Data Services

➤ WCF Data Services enables you to access a database over the web or an intranet.

➤ WCF Data Services uses the OData protocol.

➤ WCF Data Services returns data in OData ATOM format but also can return data in JSON format.

➤ You can query data in a database by passing parameters in the URL's query string.

File I\O

➤ `File` and `FileInfo` object are used to determine properties about a file and also perform operations on a file.

➤ A `Stream` is used to represent the contents of a file in memory and can be used to write data to a file or read data from a file.

➤ A `BinaryReader` and `BinaryWriter` are used for reading and writing binary values.

➤ A `StreamReader` and `StreamWriter` are used for reading and writing characters by using an encoded value to convert the characters to and from bytes.

➤ The default character encoding for a `StreamReader` and `StreamWriter` is UTF-8.

➤ You can use a `StreamReader` to read a file character by character, line by line, or the entire file at once.

➤ The `StringReader` and `StringWriter` is used to read and write string data.

➤ The `async` and `await` keywords are used to perform asynchronous operations.

➤ The `async` keyword must modify a method signature for it to use the `await` keyword.

➤ The `await` command kicks off the method but returns processing back to the calling method until the method completes.

Serialization

➤ Serialization is the process of transforming an object's data to persisted storage or to transfer the object from one domain to another.

➤ The `BinaryFormatter` is used to perform binary serialization.

➤ The `XmlSerializer` is used to perform XML serialization.

➤ The `DataContractJsonSerializer` is used to perform JSON serialization.

➤ There are two ways to customize serialization, using attributes or implementing the `ISerializable` interface.

REVIEW OF KEY TERMS

ADO.NET A set of classes in the .NET Framework that enables you to connect to a database, retrieve data, execute stored procedures, add, update, or delete records in a table.

ADO.NET Entity Framework An object relational mapping tool that provides a graphical user interface that generates to code to perform operations against a database using ADO.NET

array The most basic type used to store a set of data.

async Indicates that the method, lambda expression, or anonymous method is asynchronous.

await Suspends the execution of a method until the awaited task completes.

boxing/unboxing Boxing is the process of converting a value type to a reference type. Unboxing is the process of converting a reference type to a value type.

collection A generic term that encompasses lists, dictionaries, queues, stacks, hash tables, and other objects that can contain sets of data.

connection object An object in ADO.NET that allows you to open and execute commands against a database.

IComparable interface A class that implements the `IComparable` interface can be sorted when used in a collection or array.

indexer A method that is used when referencing an element in an array or collection by using square brackets, `[]`, and its index.

JSON JavaScript Object Notation is a lightweight data-interchange format.

Object Relational Mapping (ORM) A computer software term for tools that convert data between type systems using an object oriented programming language.

OData ATOM The XML representation of data returned from an OData query.

Open Data Protocol (OData) A web protocol for querying and updating data through the Internet or intranet.

shallow copy Creating a new copy of an object that copies all value types and copies object references for reference types.

serialization The process of converting an object into a stream of bytes that can be stored or transmitted.

stream An abstract class that provides a generic view of a sequence of bytes.

Text Transformation Template Toolkit (T4 Template) A file that contains text blocks and control statements that enable to you to generate a code file.

WCF Data Services Enables you to use OData to expose and consume data over the web or an intranet.

EXAM TIPS AND TRICKS

The Review of Key Terms and the Cheat Sheet for this chapter can be printed to help you study. You can find these files in the ZIP file for this chapter at `www.wrox` `.com/remtitle.cgi?isbn=1118612094` on the Download Code tab.