

Index

A

Abort() method, 915

AbortTransaction event, 737

abstract base class, inheritance and

 MustInherit keyword, 160–161

 MustOverride keyword, 161

abstraction, 170–174

 description, 61

 implementation, 171

 TextBox control, 170

ACID test

 atomicity, 1030

 consistency, 1030

 durability, 1030

 isolation, 1030

act-as relationship, 116

Action property, SecurityException class, 475

Activated objects, 1007–1008

ActivatorClient project, 1024–1025

Activator.GetObject, 1024–1025

activities, WF

 CallExternalMethod, 940

 Code, 943

 CompensatableSequence, 942

 Compensate, 943

 ConditionedActivityGroup, 942

 Delay, 943

 EventDriven, 942

 FaultHandler, 942

 HandleExternalEvent, 940

 IfElse, 941

 InvokeWebService, 941

 InvokeWorkflow, 941

 Listen, 941

 Parallel, 942

 Policy, 941

 Replicator, 942

 Sequence, 942

 State, 943

 StateFinalization, 943

 StateInitialization, 943

 Suspend, 943

 Terminate, 943

 Throw, 943

 WebServiceFault, 941

 WebServiceInput, 941

 WebServiceOutput, 941

 While, 942

Add() method, ValueType, 272

AddGroup switch, Caspol utility, 466–467

AddHandler method, 86, 90–91

AddOwnedForm() method, 606

AddRef method, 219

addresses, 1059–1060

 DNS, 1059

 IP, 1059

ADO, XML and, 390

ADO.NET 2.0, 341–342

 architecture enhancements, 342–344

 components, 343–344

 connection pooling, 368

 DataSet object, 364–366

 DataTable object, 364–366

 DataTable objects, 363–364

 SQL Server, XML-related features, 434–435

 XML and, 390

 XML documents, generating, 433–434

aliases

aliases, namespaces, 296

ApartmentState() method, 915

ApartmentState method, 915

AppDomains, 899

Append method, StringBuilder, 45

application deployment. See deployment

Application event log, 330

application folders, ASP.NET

\App_Browsers folder, 743

\App_Code folder, 738–742

\App_Data folder, 742

\App_GlobalResources folder, 742–743

\App_LocalResources folder, 743

\App_Themes folder, 742

\App_WebReferences folder, 743

application inheritance, 191–192

application isolation, versioning and, 818

Application_AuthenticationRequest event, 745

Application_BeginRequest event, 744

Application_End event, 745

Application_Error event, 745

Application.MainWindow, declaration, 683

application-private assemblies, 816

Application_Start event, 744

AreEqual() method, 268, 278

ArrayList object, Collections namespace, 42, 1064

arrays, 39–40

Integer arrays, 39

multidimensional, 40

parameter array, 46–47

ReDim statement, 41–42

UBound function, 40–41

arrMyIntArray, 40

ASMX Web Services, 1091

ASP.NET 2.0, 5

AbortTransaction page event, 737

administration, 722

application folders

App_Browsers folder, 743

App_Code folder, 738–742

App_Data folder, 742

App_GlobalResources folder, 742–743

App_LocalResources folder, 743

App_Themes folder, 742

App_WebReferences folder, 743

applications

data-driven, 774–783

health monitoring, 723

location options, 726–728

Web server, built-in, 727

CommitTransaction page event, 737

compilation system, 722–723, 764–767

configuration settings, 795–796

reading/writing, 723–724

cross-page posting, 759–764

culture settings, 238–239

DataBinding page event, 737

directives

Assembly, 736

Control, 736

Implements, 736

Import, 736

Master, 736

MasterType, 736

OutputCache, 736

Page, 736

PreviousPageType, 736

Reference, 736

Register, 736

Disposed page event, 737

Error page event, 737

FTP and, 729

Global Application Class, 743–746

Global.asax file, 743–746

IDE, new, 725–726

IIS and, 728

Init page event, 737

InitComplete page event, 737

- JavaScript and, 753
 - Page.ClientScript.RegisterClientScriptBlock, 754–755
 - Page.ClientScript.RegisterClientScriptInclude, 756–757
 - Page.ClientScript.RegisterStartupScript, 755–756
- Load page event, 737
- LoadComplete page event, 737
- localization, 724
- management, 722
- master pages, 767–770
 - content pages, 770–772
 - declaring application wide, 772–773
 - default content, 773–774
- membership, 790–794
- methods, overloading, 982
- namespaces and, 297
- navigation, 783–784
 - Description attribute, 784
 - Roles attribute, 784
 - SiteMapPath server control, 784–785
 - Title attribute, 784
 - Url attribute, 784
- objects, new, 724
- page directives, 735
 - Assembly, 736
 - Control, 736
 - Implements, 736
 - Import, 736
 - Master, 736
 - MasterType, 736
 - OutputCache, 736
 - Page, 736
 - PreviousPageType, 736
 - Reference, 736
 - Register, 736
- page events, 736–738
- page structure, 730–732
 - code-behind model, 733–735
 - inline coding, 732–733
 - partial classes, 723
 - performance, 722
 - personalization and, 794–795
 - PreInit page event, 737
 - PreLoad page event, 737
 - PreRender page event, 737
 - PreRenderComplete page event, 737
 - provider model, 797–804
 - resource files
 - global resources, 252–254
 - language resource files, 249–250
 - local resources, 246–252
 - role management, 790–794
 - scalability, 722
 - server controls, 724–725, 747–748
 - coding, 750–751
 - custom controls, 748
 - design surface and, 749–750
 - events, 751–752
 - list controls, 748
 - Menu, 785–787
 - mobile controls, 748
 - rich controls, 748
 - SiteMapPath, 785–787
 - TreeView, 787–790
 - user controls, 748
 - validation controls, 748
 - Unload page event, 737
 - Web site, FrontPage extensions and, 729–730
 - Windows Workflow and, 952–956
 - Xml server control, 442–444
 - XmlDataSource control, 437–442
 - namespace issues, 442
- assemblies, 207–208**
 - application-private, 816
 - CLR and, 808
 - configuration files, 820–821
 - runtime settings, 821–823
 - startup settings, 821
 - cryptographically strong names, 1039

assemblies (*continued*)

assemblies (*continued*)

- dynamic loading
 - Assembly class, 824–825
 - example, 825–826
- manifest, 207–208, 809–812
 - identity section, 812–815
- namespaces, 287
- referenced, 815
- shared, 816
 - GAC (Global Assembly Cache), 816–817
- strong names, 1039
- versioning
 - application isolation and, 818
 - self-describing, 818–819
 - side-by-side execution and, 818
 - version policies, 819–820
- Assembly class, 824–825**
- Assembly directive, ASP.NET, 736**
- assembly management, security tools, 474–475**
- AssemblyInfo.vb file, 511**
 - Assembly Version attribute, 512
 - COM Visible attribute, 512
 - Company attribute, 512
 - Copyright attribute, 512
 - Description attribute, 512
 - File Version attribute, 512
 - Guid attribute, 512
 - Product attribute, 512
 - Title attribute, 512
 - Trademark attribute, 512
- Assert method, 334, 451**
 - Windows Forms permissions, 456
- AsymmetricAlgorithm class, 488**
- asynchronous execution of commands, 352–354**
- atomicity, ACID test, 1030**
- attributes**
 - CLR and, 214–216

- InterfaceQueuing, 1047
- Serializable, 214
- WebService, 968
- WebServiceBinding, 968
- XML, 397–398

- traversing with DOM, 423–425

Attributes() method, XML attributes, retrieving, 423

authentication, PrinciplePermission calss, 453

author blogs, 1204

AutoCompletion, Windows Forms, 598

AutoScaleDimensions property, 526

AutoScaleMode property, 526

B

background, tasks, 904

- interactive applications, 905

BackgroundWorker control, 910

base class, 116

- abstract
 - MustInherit keyword, 160–161
 - MustOverride keyword, 161
- fragile base class problem
 - implementation and, 202–203
 - interfaces and, 200–201

BeginExecuteNonQuery method, 352

BeginExecuteReader method, 352

BeginExecuteXmlReader method, 352

behavior, 64

bin directory, Visual Studio, 509

binary formatter, 1003

binding, COM, 874

BitArray object, Collections namespace, 42

blogs, author blogs, 1204

books, 1204

Boolean datatype, 25

Boolean types, 26–28

bootstrapper, ClickOnce deployment, 870

borders, Windows Forms, 605
boxing, 44–45
BSTR structure, 211
buffering, streaming XML email and, 416
build configurations (Visual Studio), 546–549
BuildSqlCommand method, 356
Button control, 639
 local resources, 247
Byte datatype, 22, 25, 32–33

C

CacheDuration property, 985
caching, Web Service responses, 985
CallExternalMethod activity, 940
CanDeserialize() method, 397
Caspol utility
 AddGroup switch, 466–467
 function of, 474
 groups, listing active, 461–462
 permission sets, 447
 security policy examination commands, 460–461
 security policy modification commands, 463–467
Catch block
 Finally block, 318
 late binding implementation, 70
 Throw statement, 318
Catch keyword, 317–319
Category attribute, 654
CausesValidation property, 629
CCircularRef class, 220
certificate management, security tools, 475
certificates, X.509, 495–497
Certmgr utility, 475
Cert2spc utility, 475
chains of inheritance, 138
Char datatype, 22, 25, 32–33
CheckBox control, 639

CheckCharacters property
 XmlReaderSettings, 409
 XmlWriterSettings, 401
CheckedListBox control, 639
ChildChangedEventArgs class, 706
ChildNodes() method, traversing XML, 421
Chktrust utility, 475
class constraints, generic, 279–281
class diagrams (Visual Studio), 553–554
class ID, COM and, 874
Class keyword, 18, 21, 73–75
Class Libraries, interfaces, 183
Class View window, 74
classes
 Assembly, 824–825
 AsymmetricAlgorithm, 488
 base class, 116
 CCircularRef, 220
 ChildChangedEventArgs, 706
 Class keyword, 73–75
 CodeAccessSecurityAttribute, 449
 components and, 111–112
 ContainerControl, 660
 Control, 659–660
 DataSet, loading XmlDocument, 420
 description, 62
 DSACryptoServiceProvider, 488
 ElementHost, 706
 EmailStream, 415–418
 Encapsulation, 175
 EnvironmentPermission, 449
 EnvironmentPermissionAttribute, 449
 events, 84
 handling, 84–85
 raising, 86
 raising, custom, 87–88
 receiving, 88–91
 WithEvents, 85–86
 fields, 75
 FileDialogPermission, 449

classes (continued)

classes (continued)

- FileDialogPermissionAttribute, 449
- FileIOPermission, 449
- FileIOPermissionAttribute, 449
- GacIdentityPermission, 449
- GacIdentityPermissionAttribute, 449
- GenericBase, 275
- Hashtable, 81
- Installer, 1128
- IntegrationExceptionEventArgs, 706
- IsolatedStorageFilePermission, 449
- IsolatedStorageFilePermissionAttribute, 449
- IsolatedStoragePermission, 449
- IsolatedStoragePermissionAttribute, 449
- IXsltArgumentList, 432
- IXsltCompileException, 433
- IXsltContext, 433
- IXsltContextFunction, 432
- IXsltContextVariable, 432
- IXsltException, 433
- KeyContainerPermission, 450
- KeyContainerPermissionAccessEntry, 450
- KeyContainerPermissionAccessEntryCollection, 450
- KeyContainerPermissionAccessEntryEnumerator, 450
- KeyContainerPermissionAttribute, 450
- LayoutExceptionEventArgs, 706
- MemoryStream, 415–418, 416
- Message, 1169–1173
- methods, 76
 - constructor methods, 91–92
 - parameters, 77–78
 - returning values, 76–77
 - scope, 77
- Object, 34
- parent class, 116
- partial, 723
- PermissionSetAttribute, 450
- PrinciplePermission, 450
- PrinciplePermissionAttribute, 450
- Process, displaying XML documents, 427
- properties, 78–84
- PropertyMap, 707
- PropertyMappingExceptionEventArgs, 707
- PropertyTranslator, 707
- ProviderFactory, 366
- PublisherIdentityPermission, 450
- PublisherIdentityPermissionAttribute, 450
- ReflectionPermission, 450
- ReflectionPermissionAttribute, 450
- RegistryPermission, 450
- RegistryPermissionAttribute, 450
- ResourcePermissionBase, 450
- ResourcePermissionBaseEntry, 450
- RSACryptoServiceProvider, 488
- ScrollableControl, 660
- SecurityAttribute, 450
- SecurityException, 475–476
- SecurityPermission, 451
- SecurityPermissionAttribute, 451
- ServiceController, 1140
- ServiceInstaller, 1128
- ServiceProcessInstaller, 1128
- SingleLinkedList, 271
- SoapHeader, 986
- StoredProcedureHelper, 370
- StorePermission, 451
- StorePermissionAttribute, 451
- superclass, 116
- System.Net.HttpWebRequest, 1153
- System.Net.HttpWebResponse, 1153
- System.Net.WebClient, 1154
- System.Net.WebProxy.WebClient, 1154
- System.Net.WebRequest, 1153
- System.Security.Cryptography.AsymmetricAlgorithm, 488
- System.Uri, 1153
- UIPermission, 451
- UIPermissionAttribute, 451
- UserControl, 660

CodeAccessSecurityAttribute class

- WindowsFormsHost, 707
- XML, 389
- XmlAttribute, DOM and, 419–420
- XmlDocument, 417
 - DOM and, 419
- XmlElement, DOM and, 419
- XmlNode, DOM and, 419
- XmlNodeList, 421
- XmlReader, 400
- XmlTransform, 400
- XmlWriter, 400
- Xsl namespace, 432–433
- XslTransform, displaying XML documents, 427
- Click event, 84**
- ClickOnce deployment, 831**
 - Internet, 861–862
 - application configuration, 862
 - bootstrapper, 870
 - configuration options, 867–869
 - directories produced, 865–866
 - files produced, 865–866
 - locally installed applications, 862–863
 - manifest, manual editing, 870
 - offline applications, deploying, 863–865
 - online applications, 862–863
 - online applications, deploying, 863–865
 - signing manifest, 866
 - uninstalling applications, 870
 - updates, 867
- client-side ActiveX, 962**
- ClientSize property, 526**
- Close method, 334**
- CloseAndSend() method, streaming XML email, 415–418**
- CloseOutput property**
 - XmlReaderSettings, 409
 - XmlWriterSettings, 401
- CLR (common language runtime), 4**
 - assemblies and, 808
 - attributes, 214–216
 - components, 5
 - datatypes, 211–212
 - design goals, 6–7
 - IL Disassembler, 217–218
 - introduction, 205–206
 - memory management, garbage collection, 219–226
 - metadata, 212–214
 - objects, memory allocation, 226–227
 - Reflection API, 216–217
 - SQL Server and, 563–564
- code access, permissions, 451–452**
 - management, 455–460
- Code activities, workflows, 936**
- Code activity, 943**
- Code Expansion, 529–531**
- code snippets, 531–533**
- CodeAccessPermission class**
 - Assert method, 451
 - Copy method, 451
 - Demand method, 451
 - Deny method, 451
 - Equals method, 451
 - FromXml method, 451
 - GetHashCode method, 451
 - GetType method, 451
 - Intersect method, 452
 - IsSubsetOf method, 452
 - PermitOnly method, 452
 - RevertAll method, 452
 - RevertAssert method, 452
 - RevertDeny method, 452
 - RevertPermit-Only method, 452
 - ToString method, 452
 - ToXml method, 452
 - Union method, 452
- CodeAccessSecurityAttribute class, 449**

Collections namespace

Collections namespace, 42–44

- ArrayList object, 42
- BitArray object, 42
- Hashtable object, 42
- Queue object, 42
- SortedList object, 42
- Stack object, 42

ColorDialog control, 635–636

COM (Component Object Model), 3, 15, 873

- binding, 874
- class ID, 874
- interfaces, 874
- late binding, 882–883
- legacy ActiveX control, 887–889
- legacy components
 - implementing, 876–877
 - interface, 875–876
 - registering, 877
- monikers, 1048
- .NET
 - component, 892–893
 - legacy component, referencing, 878–880
 - RegAsm, 893–896
 - TlbExp, 896
- objects, marshaling, 1048
- TlbImp, 880–881

combo boxes, AutoCompletion, 598

ComboBox control, 640

Command object, 345–346

- stored procedures and, 346–350

Command window (Visual Studio), 550

commands

- asynchronous execution, 352–354
- comparison operators, 55–57
- CREATE ENDPOINT, 589
- custom, 1143–1145
- Do Until statement, 59
- Do While statement, 59

- For Each statement, 58
- End Namespace, 298
- Exit For statement, 58
- If Then statement, 54–55
- Namespace, 298
- For Next statement, 58
- Select Case statement, 57
- Using, 222
- While statement, 59
- XSLT, 425

Commit event, 855

CommitTransaction event, 737

common provider model, 366–368

common type system, 8

Compare() method, 35, 158–159

CompareOrdinal() method, 35

comparison operators, 55–57

CompensatableSequence activity, 942

Compensate activity, 943

Component Services Console, 1041

components, classes and, 111–112

composite controls

- building, 649
- UserControl, 660–661
 - creating, 661–662
 - example, 663–667
 - properties, 663
 - resizing, 662–663

Concat() method, 35

ConditionedActivityGroup activity, 942

ConformanceLevel property

- XmlReaderSettings, 409
- XmlWriterSettings, 401

Connection object, 344–345

connection pooling, ADO.NET 2.0, 368

ConnectionString property, 371

consistency, ACID test, 1030

console applications, 13, 20–22

Console keyword, 22

constants, strings, 37

constraints, 271, 278–279

- class, 281
- multiple, 282
- structure, 281
- type constraints, 279–281

constructor methods, 91–92

- overloading, 97–98

constructors

- data access component, 370–371
- inheritance and, 147
- Overridable keyword, 148
- Overrides keyword, 148
- shared, 103

ContainerControl class, 660**content presenter control, 695****context menus, Windows Forms, 633****ContextMenu control, 597****ContextMenuStrip control, 597****ContextUtil, 1036****Control class, 659–660****Control directive, ASP.NET, 736****controls**

- Button, 639
- CheckBox, 639
- CheckedListBox, 639
 - selected items and, 655–659
- ColorDialog, 635–636
- ComboBox, 640
- composite, building, 649
- content presenter control, 695
- ContextMenu, 597
- ContextMenuStrip, 597
- creating, from scratch, 649
- custom controls, 748
- DateTimePicker, 640
- DomainUpDown, 640
- embedding in controls, 675–677
- FontDialog, 636
- GDI+ and
 - System.Drawing namespace and, 668–669
 - System.Drawing.Graphics class, 669
- HScrollBar, 640
- ImageList, 640
- inheritance and, 648–649
 - attributes, 654–655
 - custom events, 655
 - DefaultValue attribute, 652–653
 - properties, custom controls, 650–651
 - Visual Studio IDE and, 651–652
- Label, 640
- LinkLabel, 640
- list controls, 748
- ListBox, 640
- ListView, 641
- MainMenu, 597
- MenuStrip, 597
- mobile controls, 748
- MonthCalendar, 641
- NotifyIcon, 641
- NumericUpDown, 641
- PageSetupDialog, 636
- panels, 695
- PictureBox, 641
- PrintDialog, 636
- PrintPreviewDialog, 636
- ProgressBar, 641
- RadioButton, 641
- rich controls, 748
- RichTextBox, 641
- SplitContainer, 597
- Splitter, 597
- StatusBar, 597
- StatusStrip, 597
- TabControl, 642
- TextBox, 642
- Timer, 642
- ToolBar, 597
- toolbox icons, 674–675
- ToolStrip, 597
- ToolStripButton, 630
- ToolStripComboBox, 630

controls (continued)

controls (continued)

- ToolStripControlHost, 630
- ToolStripDropDownButton, 630
- ToolStripDropDownItem, 630
- ToolStripLabel, 630
- ToolStripMenuItem, 630
- ToolStripSeparator, 630
- ToolStripSplitButton, 630
- ToolStripTextBox, 630
- TrackBar, 642
- TreeView, 642
- user controls, 748
- validation controls, 748
- VScrollBar, 642
- XAML, 694–695
- conversions, datatype**
 - compiler options, 48–51
 - explicit, 51–54
 - implicit, 48–51
- ConvertLegacyToNewStandard.xslt, 431–432**
- Copy method, 35, 451**
- copying, shallow copy operations, 45**
- CORBA (Common Object Request Broker Architecture), 959, 961**
- counter monitor, 1131–1136**
- CREATE ENDPOINT command, 589**
- CreateEventSource method, 332**
- CreateInstance method, 183**
- Crossbow, Windows.Forms.Integration namespace**
 - ChildChangedEventArgs class, 706
 - ElementHost class, 706
 - IntegrationExceptionEventArgs class, 706
 - LayoutExceptionEventArgs class, 706
 - PropertyMap class, 707
 - PropertyMappingExceptionEventArgs class, 707
 - PropertyTranslator class, 707
 - WindowsFormsHost class, 707

cross-page posting, 760

cryptographically strong names, 1039

cryptography

- definition, 446
- hash algorithms
 - cryptographic, 479–481
 - overview, 478–479
- .NET Framework, overview, 476–478

CString class, 211

CTS (common type system), 212

CType method, 54, 70–71

culture attribute, 237

CultureInfo object, 235

cultures, 231–232

- currencies, 240–243
- dates, 239–240
- declaring globally in ASP.NET, 236–237
- invariant cultures, 232
- neutral cultures, 232, 252
- numbers, 240–243
- sorting and, 244–246
- specific cultures, 232
- threads, 233–236

currencies

- converting, 240
- numbers and, 240–243

Currency decimal type, 30

CurrentCulture property, 236

Custom Actions Editor, 854–856

custom controls, 748

D

data access component, 369–370

- constructors, 370–371
- methods
 - ExecSp, 382–383
 - ExecSpOutputValues, 383–384
 - ExecSpReturnDataReader, 380–381
 - ExecSpReturnDataSet, 373–380
 - ExecSpReturnXmlReader, 381–382

- properties, 371–372
- stored procedure XML structure, 372
- Data property, XmlException class, 413**
- DataAdapter object**
 - BuildSqlCommand method, 355
 - DeleteCommand property, 354
 - Fill method, 354
 - GetPubsConnection method, 356
 - InsertCommand property, 354
 - SelectCommand property, 354
 - Update method, 355
 - UpdateCommand property, 354
- databases**
 - creating, 1033–1034
 - populating, 1035
- DataBinding event, 737**
- data-driven applications, ASP.NET, 774**
 - GridView control, 775–778
 - records, editing/deleting, 778–782
 - SqlDataSource control, 775–778
- DataGrids, binding to, DataSet objects and, 384–388**
- DataReader object, 350–352**
 - DataSet integration, 365–366
 - DataTable integration, 365–366
- DataRelationCollection, 359–360**
- DataSet class**
 - ADO.NET
 - methods, 433
 - properties, 433
 - XmlDocument, loading, 420
- DataSet objects**
 - ADO.NET 2.0, 364–366
 - binding to DataGrids, 384–388
 - creating objects, 361–363
 - creating programmatically, 362–363
 - DataReader integration, 365–366
 - DataRelationCollection, 359–360
 - DataTableCollection, 359
 - ExtendedProperties, 360
 - indexing, 364
 - serialization, 364–365
 - using, 361–363
- DataTable objects**
 - ADO.NET, 363–364
 - ADO.NET 2.0, 364–366
 - DataReader integration, 365–366
 - independence, 366
 - indexing, 364
 - serialization, 364–365
- DataTableCollection, 359**
- datatypes**
 - Boolean, 25
 - Byte, 25
 - Char, 25
 - CLR and, 211–212
 - compiler options, 48–51
 - conversions
 - explicit, 51–54
 - implicit, 48–51
 - Option Compare setting, 50
 - Option Explicit setting, 50
 - Option Strict setting, 50
 - Parse method, 53
 - TryParse method, 53
 - CTS (common type system), 212
 - CType method, 54
 - Date, 25
 - Decimal, 25
 - DirectCast method, 54
 - Double, 25
 - Integer, 25
 - Long, 25
 - Object class and, 22
 - primitive, 24–26
 - Short, 25
 - Single, 25
 - String, 25
 - TryCast method, 54
 - virtual methods, 127

Date datatype

Date datatype, 25

DateTime type, 33

DateTimePicker control, 640

DBNull class, 37–38

DbProviderFactory, 366

CreateConnection method, 367

GetFactory method, 367

DCOM (Distributed COM), 874, 960–961

Debug object

Assert method, 334

Close method, 334

Fail method, 334

Flush method, 334

methods, 334

Write method, 334

WriteIf method, 334

WriteLine method, 334

WriteLineIf method, 334

debugging, 313

SQL/CLR, 568

Decimal datatype, 25

Decimal decimal type, 30

decimal types, 30

decimal, 32

double, 32

single, 31

declarations, fully qualifying, 295

declarative security, Permview utility, 469

DeclaringType property, 216

default interop assembly, 880

Default keyword, 83

default property, 83–84

DefaultValue attribute, 652–653

Delay activity, 943

delegates

datatype, 107–108

declaring, 106–107

methods, implementation, 108–111

thread pool, 910–912

Delete method, 332

DeleteCommand attribute, 781

DeleteCommand property, 357

DeleteEventSource method, 332

Demand method, 451

Demanded property, SecurityException class, 476

Deny method, 451

Windows Forms permissions, 457

DenySetInstance property, SecurityException class, 476

deployment, 210–211, 829

ClickOnce, 831

Internet, 859–860

ClickOnce deployment, 861–871

no-touch deployment, 860–861

Updater Application Block, 871–872

Windows Installer, 831

XCOPY, 830–831

deployment projects, Visual Studio

ASPNET Web applications, 839–840

creating, 833–840

Custom Actions Editor, 854–856

File System Editor, 843–844

AlwaysCreate property, 847

Common Files folder, 845

Condition property, 847

DefaultLocation property, 847

Fonts folder, 845

Global Assembly Cache folder, 846

items, adding, 844

Program Files folder, 845

Property property, 847

shortcuts, 847–848

special folders, adding, 845–847

System folder, 845

Transitive property, 847

User's Application Data folder, 845

User's Desktop folder, 845

User's Personal Data folder, 846

User's Programs Menu, 846

- User's Send To Menu, 846
- User's Start Menu, 846
- User's Startup folder, 846
- User's Template folder, 846
- Windows folder, 846
- File Types Editor, 850–851
- Launch Conditions Editor, 856–859
- primary output properties, 838
- project output, 835–836
- properties, 841–843
 - Build page, 841–843
- Registry Editor
 - files, importing, 850
 - keys, adding value, 848–850
- root setup node properties, 836–838
- User Interface Editor, 851–852
 - dialog box order, 853
 - dialog box properties, 854
 - dialog boxes, adding, 853–854
 - installation modes, 852
 - walk-through, 834–839
- dereferencing objects, 68**
- Description attribute, 654**
- Deserialize() method, overriding, 395**
- destructors, 222**
- dialog boxes**
 - AllowFullOpen property, 636
 - Color property, 636
 - Filename property, 635
 - Filter property, 635
 - FilterIndex property, 635
 - FixedPitchOnly property, 636
 - Font property, 636
 - InitialDirectory property, 635
 - properties, 635
 - RestoreDirectory property, 635
 - ShowColor property, 636
 - ShowDialog property, 635, 636
 - ShowEffects property, 636
- DialogResult property, 612–613**
- digital signatures, hash algorithms, 492–495**
- Dim keyword, 22**
- DIME (Direct Internet Message Encapsulation), 1094–1095**
- DirectCast function, 71–72**
- DirectCast method, 54**
- directives, ASP.NET 2.0**
 - Assembly, 736
 - Control, 736
 - Implements, 736
 - Import, 736
 - Master, 736
 - MasterType, 736
 - OutputCache, 736
 - Page, 736
 - PreviousPageType, 736
 - Reference, 736
 - Register, 736
- Discovery, 957**
- Disposed event, 737**
- Distributed Applet-Based Massively Parallel Processing, 962**
- Distributed Object Invocation Meets the World Wide Web, 962**
- DNS (Domain Naming System), 1059**
- Do Until statement, 59**
- Do While statement, 59**
- Document Object Model. See DOM**
- DOM (Document Object Model)**
 - compared to SQL Server for XML, 420
 - System.Xml namespace, 418–420
 - traversing XML, 420–423
 - traversing XML attributes, 423–425
- DomainUpDown control, 640**
- DOM-based XML document generation, 399, 419**
- DoSomething method, 63–64**
- Double datatype, 25**
- Double decimal type, 30**

downloading

downloading, Web pages, 1153

DSACryptoServiceProvider class, 488

durability, ACID test, 1030

E

early binding, late binding and, 68–72

EDI (Electronic Data Interchange), 994

Electronic Data Interchange (EDI), 994

ElementHost class, 706

Height property, 707

HorizontalAlignment property, 707

Margin property, 707

VerticalAlignment property, 707

Width property, 707

elements, XML, 391

**email, streaming XML documents,
415–418**

EmailStream class, 415–418

embedding, controls in controls, 675–677

Empty() method, 35

empty tags, XML, 391

**EnableRaisingEvents property,
FileSystemWatcher, 1147**

encapsulation, 174–176

description, 61

Encapsulation class, 175

DistanceTo() method, 186

IShared interface, 186

**Encoding property, XmlWriterSettings,
401**

End Namespace command, 298

EndExecuteNonQuery method, 352

EndExecuteReader method, 352

EndExecuteXmlReader method, 352

Enterprise Services, 1029

queued components, 1046–1047

client building, 1048–1050

Computer Management Console, 1048

consoles, 1048

InterfaceQueuing attribute, 1047

transactions with, 1051–1053

transactions

ACID test, 1030

business logic, 1035–1039

components, 1031–1032

database creation, 1033–1034

databases, populating, 1035

queued components and, 1051–1053

EntryWritten event, 331

Environment namespace, 301

EnvironmentPermission class, 449

Windows Forms permissions, 457

**EnvironmentPermissionAttribute class,
449**

equality operator (=), 35

Equals() method, 35

Equals method, 451

Err object, exceptions and, 316–317

Error event, 737

error handling

interoperability and, 329

review, 314

error logging, 330

Event Log, 330–331

events, EntryWritten, 331

methods

CreateEventSource, 332

Delete, 332

DeleteEventSource, 332

Exists, 332

GetEventLogs, 332

SourceExists, 332

WriteEntry, 332

properties

Log, 332

Source, 332

trace files, writing to, 333–335

error messages, malformed XML, 414

ErrorProvider, 624

- Err.Raise, 329**
- Event keyword, 86**
- Event Log, 330–331**
 - error events, 331
 - failure audits, 331
 - information events, 331
 - Source property, 331
 - success audits, 331
 - warning events, 331
- Event Viewer, 330**
- EventDriven activity, 942**
- EventLog, 330**
 - System.Diagnostics namespace, 331
- EventLog methods, registry accessing, 459**
- events, 84**
 - AbortTransaction, 737
 - Application_AuthenticationRequest, 745
 - Application_BeginRequest, 744
 - Application_End, 745
 - Application_Error, 745
 - Application_Start, 744
 - Click, 84
 - Commit, 855
 - CommitTransaction, 737
 - CreateEventSource method, 332
 - DataBinding, 737
 - Delete method, 332
 - DeleteEventSource method, 332
 - Disposed, 737
 - EntryWritten, 331
 - Error, 737
 - errors, 331
 - Exists method, 332
 - GetEventLogs method, 332
 - handling, 84–85
 - multiple, 85
 - information, 331
 - inheritance, 154–155
 - controls, 655
 - raising events from subclasses, 155–157
 - Init, 737
 - InitComplete, 737
 - Install, 855
 - interfaces and, 166
 - Load, 737
 - LoadComplete, 737
 - Log property, 332
 - OnCustomCommand, 1143
 - PreInit, 737
 - PreLoad, 737
 - PreRender, 737
 - PreRenderComplete, 737
 - raising, 86
 - custom, 87–88
 - from subclasses, 155–157
 - receiving
 - AddHandler method, 90–91
 - WithEvents keyword, 88–89
 - Rollback, 855
 - server controls, ASPNET, 751–752
 - Session_End, 745
 - Session_Start, 744
 - shared, 102–103
 - Source property, 332
 - SourceExists method, 332
 - Uninstall, 855
 - Unload, 737
 - Validating, 628
 - warnings, 331
 - WithEvents keyword, 85–86
 - WriteEntry method, 332
- Everything permission set, 448**
- evidence (identity permissions), 454**
- exception handling, 313**
 - keywords, 317
 - structured, 315
 - XML, 413–415

exceptions

exceptions

- Err object and, 316–317
- GetBaseException method, 316, 323–324
- HelpLink property, 315
- InnerException property, 315
- Message property, 315
- properties, 323–324
- security, 475–476
- Source property, 315
- StackTrace property, 315
- TargetSite property, 315
- throwing new, 320–321
- ToString method, 316

ExecSp, 382–383

ExecSpOutputValues, 383–384

ExecSpReturnDataReader, 380–381

ExecSpReturnDataSet, 373–380

ExecSpReturnXmlReader, 381–382

ExecuteAndSend method, 584

ExecuteXmlReader() method, query results, retrieving, 436

execution of commands asynchronously, 352–354

Execution permission set, 448

Exists method, 332

Exit For statement, 58

Exit Try statement, 321–322

explicit conversions, datatypes, 51–54

ExtendedProperties, 360

extender providers, Windows Forms

- ErrorProvider, 624
- HelpProvider, 623–624
- properties, 624
- ToolTip, 622–623

External Access Assembly permission, 573

F

Fail method, 334

FailedAssemblyInfo property, SecurityException class, 476

FaultHandler activity, 942

fields, 65–66, 75

- types, 208

File System Editor, Visual Studio, 843–844

- Common Files folder, 845
- folders, adding items, 844
- Fonts folder, 845
- Global Assembly Cache folder, 846
- Program Files folder, 845
- properties
 - AlwaysCreate, 847
 - Condition, 847
 - DefaultLocation, 847
 - Property, 847
 - Transitive, 847
- shortcuts, 847–848
- System folder, 845
- User's Application Data folder, 845
- User's Desktop folder, 845
- User's Favorites folder, 845
- User's Personal Data folder, 846
- User's Send To Menu, 846
- User's Start Menu, 846
- User's Startup folder, 846
- User's Template folder, 846
- Windows folder, 846

File Types Editor, 850–851

FileDialogPermission class, 449

FileDialogPermissionAttribute class, 449

FileIOPermission class, 449

- Windows Forms, 455–460

FileIOPermissionAttribute class, 449

Filename property, 635

FileSystemObject, 219

FileWebRequest, 1062

Fill method, 355

FilmOrder class, XML serialization, 392–397

FilmOrder_Multiple class, XML serialization, 395–396

- Filter property, 635**
- Filter property, FileSystemWatcher, 1147**
- FilterIndex property, 635**
- Finalize method, 222–223**
- Finally keyword, 317–319**
- firewalls, 1060**
- FirstPermissionThatFailed property, SecurityException class, 476**
- FixedPitchOnly property, 636**
- FlowLayoutPanel control, Windows Forms, 600, 618–620**
- Flush method, 334**
- Flush() method, streaming XML email, 416**
- folders**
 - AlwaysCreate property, 847
 - Condition property, 847
 - DefaultLocation property, 847
 - Property property, 847
 - Transitive property, 847
- Font property, 636**
- FontDialog control, 636**
- For Each statement, 58**
 - traversing XML documents, 421
- For Next statement, 58**
- FOR XML AUTO query, 436**
- FOR XML clause (SQL SELECT statement), 434**
- FOR XML EXPLICIT query, 436**
- FOR XML RAW query, 435–436**
- for-each command, XSLT, 425**
 - populating tables, 427
- formatter objects, 1003**
- FormBorderStyle property**
 - Fixed3D option, 605
 - FixedDialog option, 605
 - FixedSingle option, 605
 - FixedToolWindow option, 605
 - None option, 605
 - Sizeable option, 605
 - SizeableToolWindow option, 605
- forms. See also Windows Forms**
 - modal, 611
- fragile base class problem**
 - implementation and, 202–203
 - interface and, 200–201
- framework inheritance, 191–192**
- Friend keyword, 63, 75**
- FromTypes() method, 397**
- FromXml method, 451**
- FTP**
 - ASPNET and, 729
 - client, creating, 1069–1078
- FtpWebRequest**
 - Abort, 1067
 - AddNodes method, 1074–1075
 - Binary, 1068
 - client, creating, 1069–1078
 - GetDirectories method, 1070
 - GetDirectoryEntries method, 1071
 - GetFiles method, 1070
 - ListView control, 1072
 - Dock property, 1073
 - MultiSelect property, 1073
 - Name property, 1073
 - View property, 1073
 - MenuStrip, 1072
 - Method, 1068
 - Passive, 1068
 - SplitContainer, 1072
 - TreeView control, 1072
 - Dock property, 1073
 - ImageKey property, 1073
 - ImageList property, 1073
 - Name property, 1073
 - PathSeparator property, 1073
 - SelectedImageKey property, 1073
- FullTrust permission set, 447**
- Function keyword, 19, 22**
- Function routines, 76**

functions

functions

CType, 70–71
 DirectCast, 70–71
 GetAverage, 318
 IsDBNull(), 37–38
 LBound, 41
 TryCast, 72
 UBound, 40–41

G

GAC (Global Assembly Cache), 816–817

assemblies, 209
 hotfix support, 209
 QFE (Quick Fix Engineering), 209
 side-by-side versioning, 209

GacIdentityPermission class, 449

GacIdentityPermissionAttribute class, 449

garbage collection

circular references, 219–220
 Finalize method, 222–223
 IDisposable interface, 223–226
 optimization, 227–229

GC (garbage collector)

generations, 227
 memory management and, 218

GDI+

System.Drawing namespace and, 668–669
 System.Drawing.Graphics class, 669
 Windows Forms and, 669–674

GenericBase class, 275

generics

classes, 269–274
 constraints, 278–279
 class constraints, 281
 multiple, 281–282
 new, 281–282
 structure constraints, 281
 type constraints, 279–281
 inheritance, 265–267, 275–276

interfaces, 277
 introduction, 261
 late binding and, 282–283
 methods, 267–268, 277–278
 structures, 276
 types, 263–265
 using, 262–263

GenericSubclass class, 275

GetAverage function, 318

GetBaseException method, 316, 327–328

GetElementsByTagName() method, XML documents, 421

GetEventLogs method, 332

GetExecutingAssembly method, 216

GetHashCode method, 451

GetMembers method, 216

GetSqlCommand method, 374

GetType method, 451

GetTypes method, 216

GetXml() method, DataSet (ADO.NET), 433

GetXmlSchema() method, DataSet (ADO.NET), 433

global resources, 252–254

global variables, 47

Global.asax file, ASP.NET, 743–746

GrantedSet property, SecurityException class, 476

GridView control

ASP.NET 2.0, 775–778
 records, editing/deleting, 778–782

GroupBox control, 621–622

groups (.NET security), definition, 447

H

HandleExternalEvent activity, 940

HandleInitiateConnectionException, 1164

Handles keyword, 84, 85

handling events, 84–85

hash algorithms

- cryptographic, 479–481
- digital signatures, 492–495
- MD5, 482
- overview, 478–479
- PKCS, 487–492
- RIPEDM-160, 482–487
- SHA (Secure Hash Algorithm), 481–482
- Hashtable class, 81**
- Hashtable object, Collections namespace, 42**
- health-monitoring, ASP.NET 2.0, 723**
- heap**
 - managed heap, 226
 - stack and, 23
- HelpLink property, 315, 328–329**
 - XmlException class, 413
- HelpProvider**
 - HelpKeyword on HelpProvider1 property, 623
 - HelpNavigator on HelpProvider1 property, 623
 - HelpString on HelpProvider1 property, 623
 - ShowHelp on HelpProvider1 property, 623
- hotfix support, 209**
- HScrollBar control, 640**
- HTML, compared to XML, 391**
- HTTP channels, 1003**
- HTTP (Hypertext Transfer Protocol), 959, 963**
- HttpListener class, 1061**
 - Abort, 1081
 - Close, 1081
 - IsListening, 1081
 - OnStart method, 1082–1083
 - OnStop method, 1083–1084
 - Prefixes, 1081
 - Start, 1081
 - Stop, 1081
 - Web server, creating, 1082–1089
- HttpWebRequest, 1062, 1154**
- I**
 - icons, toolbox, controls, 674–675**
 - identity, permissions, 454–455**
 - IDisposable interface, 221, 223–226**
 - IE (Internet Explorer), 1177–1178**
 - HTML, Windows Forms and, 1178–1186
 - If Then statement, 54–55**
 - Otherwise activities, workflows, 938**
 - Otherwise activity, 941**
 - IgnoreComments property, XmlReaderSettings, 409**
 - IgnoreProcessingInstructions property, XmlReaderSettings, 409**
 - IgnoreWhitespace property, XmlReaderSettings, 409**
 - IIS, ASP.NET and, 728**
 - IL Disassembler, 217–218**
 - IL (Microsoft Intermediate Language), 206**
 - Ilasm.exe, 809–810**
 - ImageList control, 640**
 - imperative methods, 76**
 - implementation, 64**
 - Implements directive, ASP.NET, 736**
 - Implements keyword, 162, 167**
 - implicit conversions, datatypes, 48–51**
 - Import directive, ASP.NET, 736**
 - Import file node, 684**
 - importing, namespaces, 295–296**
 - Imports statement, 184**
 - Imports System declaration, 296**
 - IncludeSubdirectories property, FileSystemWatcher, 1147**
 - Indent property, XmlWriterSettings, 402**
 - IndentChars property, XmlWriterSettings, 402**
 - indexing, DataTable objects, 364**
 - inequality operator (op_Inequality), 35**
 - InferXmlSchema() method, DataSet (ADO.NET), 433**

inheritance

inheritance

- application, 191–192
- chains of, 138
- CheckedListBox control, selected items
 - and, 655–659
- constructors and, 147
- controls and, 648–649
 - attributes, 654–655
 - custom events, 655
 - DefaultValue attribute, 652–653
 - properties, custom controls, 650–651
 - Visual Studio IDE and, 651–652
- description, 61
- events, 154–155
- framework, 191–192
- generics, 265–267, 275–276
- implementation
 - abstract base class, 160–162
 - base class, 116–118
 - constructors, 147–152
 - events, 154–157
 - levels of inheritance, 138–141
 - overloading methods, 121–124
 - overriding methods, 124–132
 - shadowing, 132–138
 - shared events, 160
 - shared methods, 157–160
 - subclass, 118–121
- is-a relationship, 193
- levels of, 138–141
- multilevel, 139–141
- multiple, 139
- multiple interfaces and, 192–198
- OOP and, 113
- overview, 114
- polymorphism and, 185–186
- preventing, 162
- reuse of code, 191
- single-level, 198
- when to use, 188–192
- Windows Forms, 608

Inheritance Picker, 608

Inherits keyword, 119–121

Inherits statement, 111

Init event, 737

InitComplete event, 737

InitialDirectory property, 635

Initialize method, 220

InitializeComponent method, 525

InitiateConnection() method, 1163

**InitiateConnectionThreadEntryPoint()
method, 1163**

InnerException property, 315, 324–326

- GetBaseException method, 327–328

- HelpLink property, 328–329

- Source property, 326–327

- StackTrace property, 326–327

- XmlException class, 413

InsertCommand attribute, 781

InsertCommand property, 357

Install event, 855

Installer class, 1128

Instance keyword, 21

instance variables, 65–66

instances, description, 62

Int16 integer type, 29

Int32 integer type, 29

Int64 integer type, 29

Integer arrays, 39

Integer datatype, 25

Integer integer type, 29

Integer type, 22, 28

- Integer, 29

- Long, 30

- Short, 29

IntegrationExceptionEventArgs class, 706

IntelliSense, 529

interactive applications, 905

- server applications, 905–906

Interface keyword, 165

InterfaceClient project, 1026–1027

InterfaceQueuing attribute, 1047

KeyContainerPermissionAccessEntry class

interfaces, 63–64

- behavior, 64–65
- events and, 166
- fields, 65–66
- generics, 277
- IDisposable, 221, 223–226
- implementation, 64–65
- instance variables, 65–66
- methods and, 166
- multiple, 62, 162
 - act-as relationship, 193
 - inheritance and, 192–198
 - is-a relationship, 193
- object interfaces, 163
 - implementing, 167–169
 - native interface, 163–164
- primary interface, 62
- secondary, 164–165

Internet deployment, 859–860

- ClickOnce, 861–862
 - application configuration, 862
 - bootstrapper, 870
 - configuration options, 867–869
 - directories produced, 865–866
 - files produced, 865–866
 - locally installed applications, 862–863
 - manifest, manual editing, 870
 - offline applications, 865
 - online applications, 862–863, 863–865
 - signing manifest, 866
 - uninstalling applications, 870
 - updates, 867
- no-touch deployment, 860–861

Internet Explorer. *See* IE (Internet Explorer)

Internet permission set, 448

interoperability, error handling and, 329

interrogative methods, 76

Intersect method, 452

invariant cultures, 232

InvokeWebService activity, 941

InvokeWorkflow activity, 941

IP addresses, 1059

IPrintableObject interface, 164, 193

is-a relationship, 116

IsDBNull() function, 37–38, 292

IShared interface, implementation, 181

IsNullorEmpty, 35

IsolatedStorageFilePermission class, 449

IsolatedStorageFilePermissionAttribute class, 449

IsolatedStoragePermission class, 449

IsolatedStoragePermissionAttribute class, 449

isolation, ACID test, 1030

IsSubsetOf method, 452

ItemGroup file node, 684

IXPathNavigable parameter, XsltTransform method, 428

IXsltArgumentList class, 432

IXsltCompileException class, 433

IXsltContext class, 433

IXsltContextFunction class, 432

IXsltContextVariable class, 432

IXsltException class, 433

J

Java

- applets, 962

- remote method invocation, 961

JIT (Just-in-Time) compiler, 206–207

Join() method, 915

Join method, 915

K

KeyContainerPermission class, 450

KeyContainerPermissionAccessEntry class, 450

KeyContainerPermissionAccessEntryCollection class

KeyContainerPermissionAccessEntry
Collection class, 450

KeyContainerPermissionAccessEntry
Enumerator class, 450

KeyContainerPermissionAttribute class,
450

keywords

Catch, 317–319
 Class, 18, 21, 73–75
 Code Expansion and, 529
 Console, 22
 Default, 83
 Dim, 22
 Event, 86
 exception handling, 317
 Finally, 317–319
 Friend, 63, 75
 Function, 22
 Handles, 84, 85
 Implements, 162, 167
 Inherits, 119–121
 Instance, 21
 Interface, 165
 Me, 22, 142–145
 Method, 21
 Modules, 22
 MustInherit, 160–161
 MustOverride, 161
 My, 301
 MyBase, 127–128, 142, 145–146
 MyClass, 146–147
 Namespace, 21
 New, 22, 66
 Nothing, 22
 NotInheritable, 162
 Operator, 103–104
 Optional, 96
 Overloads, 121
 Overridable, 124–125
 Overrides, 125–127
 Preserve, 41–42

Private, 75
 Protected, 75
 Protected Friend, 75
 Public, 75
 RaiseEvent, 86
 ReadOnly, 82
 Return, 22
 Shadows, 132
 Shared, 99, 100
 Sub, 22
 Throw, 317, 319–320
 Try, 317–319
 WithEvents, 85
 WriteOnly, 83

L

Label control, 640

local resources, 247

language resource file, 249–250

languages, multiple, 8

late binding

CType function, 70–71
 DirectCast function, 71–72
 early binding and, 68–72
 generics, 282–283
 generics and, 282–283
 implementing, 69–70
 .NET, 882–886
 polymorphism and, 177
 TryCast function, 72

Launch Conditions Editor, 856–857

conditions, creating, 858–859

file searches, 857

properties, 857–858

layout, XAML, 697

LayoutExceptionEventArgs class, 706

LBound function, 41

legacy components (COM)

implementing, 876–877

interface, 875–876

registering, 877

levels of inheritance, 138–141
libraries, Windows Forms, 692
library DLL, Class Library, 1010
LineNumber property, XmlException class, 413
LineNumberOffset property, XmlReaderSettings, 409
LinePosition property, XmlException class, 413
LinePositionOffset property, XmlReaderSettings, 409
linked lists, 269
LinkLabel control, 640
list controls, 748
List object, Sort() method, 244
ListBox control, 640
Listen activity, 941
Listener class, 1159
lists, linked, 269
ListView control, 641
Load event, 737
Load() method, XslTransform class, 428
LoadComplete event, 737
LoadFrom method, 216
local resources, ASP.NET resource files, 246–252
.Locale directive, referenced assemblies, 815
LocalInternet permission set, 448
Localizable property, 255
Location user-defined type, 568–570
Log property, 332
logs, error logging, 330
 Event Log, 330–331
 events, 331
 methods, 332
 properties, 332
Long datatype, 22, 25
Long integer type, 29

M

macros, Visual Studio, 551–553
MailMessage object, creating, 416
Main method, 21
MainMenu control, 597
Makecert utility, 475
managed heap, 226
manifest, 809–812
 identity section
 culture, 814–815
 strong names, 813–814
 version number, 812–813
 signing, ClickOnce deployment, 866
Margin property, 619–620
mask characters, 627
MaskedTextBox control, Windows Forms, 600, 626–628
Master directive, ASP.NET, 736
MasterType directive, ASP.NET, 736
MaximumSize property, Windows Forms, 599
MBROs, 1002
MD5, 482
MDI forms, Windows Forms
 child forms, 610
 child windows, 611
 parent forms, 609
 VB 6 and VB 2005, 609
 VB 2005 example, 610–611
MDIWindowListItem property, 610
Me keyword, 22, 142–145
member variables, 65
membership, ASP.NET, 790–794
memory allocation, objects, 226–227
memory management, 218
 garbage collection
 circular references, 219–220
 Finalize method, 222–223
 IDisposable interface, 223–226
 GC and, 218

MemoryStream class

MemoryStream class, 415–418

extending, 416

Menu server control, 785–787

menus, Windows Forms

adding items, 633

checkmarks, 633

context menus, 633

icons, 633

manipulating at runtime, 634

MenuStrip control, 597

Message class, 1169–1173

Message property, 315, 324

XmlException class, 413

MessageField, 1049

MessageName property, 983

metadata, 7–8

CLR and, 212–214

method, ShowMessage(), 1172

Method keyword, 21

Method property, SecurityException class, 476

method signatures, 177

methods, 76

AddHandler, 86, 90–91

AddOwnedForm(), 606

AddRef, 219

AreEqual(), 268, 278

Assert, 334, 451

Attributes(), XML attributes, retrieving, 423

BuildSqlCommand, 356

CanDeserialize(), 397

ChildNodes(), traversing XML, 421

Close, 334

CloseAndSend(), streaming XML email, 415–418

Compare(), 158–159

constructor methods, 91–92

Copy, 451

CreateEventSource, 332

CreateInstance, 183

CType, 54

DataSet (ADO.NET), 433

Debug object, 334

delegate, implementation, 108–111

Delete, 332

DeleteEventSource, 332

Demand, 451

Deny, 451

Deserialize(), overriding, 395

DirectCast, 54

DoSomething, 63–64

Equals, 451

EventLog, registry accessing, 459

exceptions, 315–316

ExecSp, 382–383

ExecSpOutValues, 383–384

ExecSpReturnDataReader, 380–381

ExecSpReturnDataSet, 373–380

ExecSpReturnXmlReader, 381–382

ExecuteAndSend, 584

ExecuteXmlReader(), 436

Exists, 332

Fail, 334

Fill, 355

Finalize, 222–223

Flush, 334

Flush(), streaming XML email, 416

Friend methods, 76

FromTypes(), 397

FromXml, 451

Function routines and, 76

generic, 267–268, 277–278

GetBaseException, 316, 327–328

GetElementsByTagName(), XML documents, 421

GetEventLogs, 332

GetExecutingAssembly, 216

GetHashCode, 451

GetMembers, 216

- GetSqlCommand, 374
- GetType, 451
- GetTypes, 216
- imperative methods, 76
- implementations, 76
- Initialize, 220
- InitializeComponent, 525
- interfaces and, 166
- interrogative methods, 76
- Intersect, 452
- introduction, 19
- invoking from base class, 127
- IsSubsetOf, 452
- LoadFrom, 216
- Main, 21
- MoveToNextAttribute(), 405
- OnClosed, 226
- OnPaint, 672
- overloading, 94–96, 982
 - inheritance implementation and, 121–124
 - overriding overloaded, 130–132
- overriding, inheritance implementation and, 124–132
- PadLeft, 36
- PadRight, 36
- parameters, 77–78
- Parse, 53, 567
- ParseDefinition, 1065
- ParseResponse, 1064
- PermitOnly, 452
- Private methods, 76
- ProcessRequest, 1064
- Property, 78–79
- Protected methods, 76, 152
- Public methods, 76
- RaiseEvent, 155–156
- Read(), 405
- ReadElementContentAs(), XML strings, parsing, 413
- ReadOuterXml(), 413
- ReadStartElement(), 411
- ReceiveInboundConnection(), 1167
- ReceiveThreadEntryPoint(), 1175
- RegisterClientScriptBlock, 754
- RegisterClientScriptInclude, 756
- RegisterStartupScript, 755
- Release, 219
- RenderPage(), 197
- returning values, 76–77
- RevertAll, 452
- RevertAssert, 452
- RevertDeny, 452
- RevertPermit-Only, 452
- scope, 77
- Send, 584
- SendResultsEnd, 584
- SendResultsRow, 584
- SendResultsStart, 584
- Serialize(), overriding, 394
- shared, 100–101, 157–160
- ShouldSerialize, 653
- Show, 611
- ShowDialog(), 611
- signatures, 95–96
- SourceExists, 332
- SqlConnection.ClearPool, 368
- SqlConnection.ClearPools, 368
- StreamWriter object, 334
- Sub routines and, 76
- SubString, 36
- System.GC.Collect, 221
- TestTrue(), 28
- ToString, 316, 452
- ToXml, 452
- Transform(), 427
- TryCast, 54
- TryParse, 53
- types, 208
- Union, 452

methods (*continued*)

methods (*continued*)

UriEncode, 1064
 virtual, 128–130
 Walk(), 76
 Write, 334
 WriteEntry, 332
 WriteLine, 334
 WriteLinef, 334
 WriteToLog, 219
 XmlAttribute class, 419–420
 XmlDocument class, 419
 XmlElement class, 419
 XmlNode class, 419
 XslTransform class, 428
Microsoft Clustering Services, 1029
Microsoft SMTP, XML email and, 418
Microsoft.VisualBasic namespace, 292
 importing from, 289
MinimumSize property, Windows Forms, 599
mobile controls, 748
modal forms, 611
Module keyword, 22
modules, 206–207
MonthCalendar control, 641
MoveToNextAttribute() method, traversing XML streams, 405
MSIL (Microsoft Intermediate Language), 509
MSMQ (Microsoft Message Queuing), 1029
MTOM (Message Transmission Optimization Mechanism), 1094–1095
MTS (Microsoft Transaction Server), 959, 1029
 multidimensional arrays, 40
 multilevel inheritance, 139–141
 multiple inheritance, 139
 multitasking, 898
MustInherit keyword, 160–161

MustOverride keyword, 161

My keyword, 301

My Project, Visual Studio, properties, 510–511

My.Application namespace, 301–305

MyBase keyword, 127–128, 142, 145–146

MyClass keyword, 146–147

My.Computer namespace, 306–309

Audio object, 306
 Clipboard object, 306
 Clock object, 306
 FileSystem object, 306
 Info object, 306
 Keyboard object, 306
 Mouse object, 306
 Name object, 306
 Network object, 306
 Ports object, 306
 Registry object, 306
 Screen object, 306

MyControls generic class, 275

My.Forms namespace, 309

My.Resources namespace, 309–310

My.User namespace, 310

My.WebServices namespace, 310

myXslTransform object, 427

N

Name property, 526

name resolution, 1059

Namespace command, 298

namespace crowding, 295

Namespace keyword, 21

Namespace property, DataSet (ADO.NET), 433

namespaces, 9, 18

aliasing, 296
 ASP.NET and, 297
 assemblies, 287

NewLineHandling property

Collections namespace, 42–44
 commonly used, 292–294
 components and, 286
 creating, 297–300
 Environment, 301
 importing, 295–296
 My keyword and, 301
 My.Application, 301–305
 My.Computer, 306–309
 My.Forms, 309
 My.Resources, 309–310
 My.User, 310
 My.WebServices, 310
 overview, 286–290
 references and, 290–292
 System, 10, 516
 System.Collections, 10, 292
 System.Data, 10, 292, 516
 System.Deployment, 516
 System.Diagnostics, 10, 292
 System.DirectoryServices, 287
 System.Drawing, 292, 516
 System.Drawing.Text, 296
 System.EnterpriseServices, 293
 System.IO, 10, 293
 System.Math, 10
 System.Net.Sockets, 1157
 System.Reflection, 10
 System.Runtime.Serialization, 1115
 System.Security, 10
 System.ServiceModel, 1099
 System.Text, 293
 System.Threading, 293
 System.Web, 293
 System.Web.Mail, accessing, 416
 System.Web.Services, 294
 System.Windows.Forms, 294, 516, 602
 System.XML, 516
 WCF, 1120
 XAML namespace, 686–690

Namespace_Sampler project, 292
NameTable property, XmlReaderSettings, 409
native interface, 162, 163–164
nesting
 Namespace command, 299
 Try structures, 322–324
.NET
 application, legacy COM component, 878–880
 COM legacy ActiveX control, 889–891
 default interop assembly, 880
 late binding, 882–886
 RegAsm, 893–896
 TlbExp, 896
.NET Class Framework, 9–10
.NET Data Providers
 Command object, 345–346
 Connection object, 344–345
 OLE DB .NET Data Provider, 358–359
 SQL Server .NET Data Provider, 358
.NET Framework
 2.0, 15–16
 3.0, new features, 2–3
 common type system, 8
 components, 4
 cryptography, overview, 476–478
 introduction, 1–2
 metadata, 7–8
 namespaces, 9
 overview, 4–5
 security, overview, 446–448
 versions, 2
NetTcpBinding class, 1102
neutral cultures, 232
New keyword, 22, 66
NewLineChars property,
 XmlWriterSettings, 402
NewLineHandling property,
 XmlWriterSettings, 402

NewLineOn property

NewLineOn property, XmlWriterSettings, 402

Ngen.exe, 207

nodes

Element, 405

Whitespace, 405

XML, 391

reading, 420–421

nondeterministic finalization, 221

Nothing keyword, 22

Nothing permission set, 448

NotifyFilter property, FileSystemWatcher, 1147

NotifyIcon control, 641

NotInheritable keyword, 162

NTFS, definition, 446

nullable types, 38–39

numbers, currencies and, 240–243

NumericUpDown control, 641

O

obj directory, Visual Studio, 509

Object class, 34

boxing and, 44

datatypes and, 22

String objects, 34

object interfaces

implementing, 167–169

native interface, 163–164

ObjectDataSource control, 978

objects

binding

CType function, 70–71

DirectCast function, 71–72

early *versus* late, 68–72

late, implementing, 69–70

TryCast function, 72

Command, 345–346

Connection, 344–345

DataAdapter, 354–358

DataReader, 350–352

declaration, 66–67

dereferencing, 68

description, 62

instances, creating, 18

instantiation, 66–67

interfaces, 63–64

behavior, 64–65

fields, 65–66

implementation, 64–65

instance variables, 65–66

memory allocation, 226–227

references, 67–68

OLE DB .NET Data Provider, 358–359

OmitXml property, XmlWriterSettings, 402

OnClosed method, 226

OnCustomCommand event, 1143

OnPaint method, 672

OOP (object-oriented programming), inheritance and, 113

Opacity property, 606–607

OpenFileDialog control, 634–635

OPENXML extension (Transact-SQL), 435

Operator keyword, 103–104

operators, overloading, 103–106

Option Compare, 50

Option Explicit, 50

Option Strict, 50

Optional keyword, 96

ORBs (Object Request Brokers), 959

Orcas, 703

outlining, 526

OutputCache directive, ASP.NET, 736

OutputMethod property, XmlWriterSettings, 402

overloading methods, 94–96, 982

constructor methods, 97–98

inheritance implementation and, 121–124

overriding overloaded, 130–132

overloading operators, 103–106

overloading WebMethods, 982–983

Overloads keyword, 121

shared methods and, 158–159

Overridable keyword, 124–125

constructors and, 148

shared methods and, 157–158

Overrides keyword, 125–127

constructors and, 148

overriding methods

Deserialize() method, 395

inheritance implementation and, 124–132

nonvirtual, 133–136

Owner property, 606

P

Padding property, 619–620

PadLeft method, 36

PadRight method, 36

Page directive, ASP.NET, 736

page events, ASP.NET 2.0

AbortTransaction, 737

CommitTransaction, 737

DataBinding, 737

Disposed, 737

Error, 737

Init, 737

InitComplete, 737

Load, 737

LoadComplete, 737

PreInit, 737

PreLoad, 737

PreRender, 737

PreRenderComplete, 737

Unload, 737

**Page.ClientScript.RegisterClientScript
Block, 754**

**Page.ClientScript.RegisterClientScript
Include, 756**

**Page.ClientScript.RegisterStartupScript,
755**

PageSetupDialog control, 636

Panel class, 695

Panel control, 621–622

Parallel activity, 942

ParamArray keyword, 46–47

parameter array, 46–47

parameterized properties, 82–83

parameters

methods, 77–78

passing, 45–46

ParamArray, 46–47

parent class, 116

Parse method, 53, 567

ParseDefinition method, 1065

ParseResponse method, 1064

partial classes, 723

passing parameters, 45–46

ParamArray, 46–47

Path property, FileSystemWatcher, 1147

PermCalc utility

calculating required permissions,
470–471

function of, 474

permission levels

External Access Assembly, 573

Safe, 573

Unsafe, 573

permission sets (.NET security), 447–448

permissions

calculating required

PermCalc utility, 470–471

Visual Studio, 471–474

classes

CodeAccessSecurityAttribute, 449

EnvironmentPermission, 449

EnvironmentPermissionAttribute, 449

FileDialogPermission, 449

FileDialogPermissionAttribute, 449

FileIOPermission, 449

FileIOPermissionAttribute, 449

permissions (continued)

permissions (continued)

- GacIdentityPermission, 449
- GacIdentityPermissionAttribute, 449
- IsolatedStorageFilePermission, 449
- IsolatedStorageFilePermissionAttribute, 449
- IsolatedStoragePermission, 449
- IsolatedStoragePermissionAttribute, 449
- KeyContainerPermission, 450
- KeyContainerPermissionAccessEntry, 450
- KeyContainerPermissionAccessEntryCollection, 450
- KeyContainerPermissionAccessEntryEnumerator, 450
- KeyContainerPermissionAttribute, 450
- PermissionSetAttribute, 450
- PrincipalPermission, 450
- PrincipalPermissionAttribute, 450
- PublisherIdentityPermission, 450
- PublisherIdentityPermissionAttribute, 450
- ReflectionPermission, 450
- ReflectionPermissionAttribute, 450
- RegistryPermission, 450
- RegistryPermissionAttribute, 450
- ResourcePermissionBase, 450
- ResourcePermissionBaseEntry, 450
- SecurityAttribute, 450
- SecurityPermission, 451
- SecurityPermissionAttribute, 451
- StorePermission, 451
- StorePermissionAttribute, 451
- UIPermission, 451
- UIPermissionAttribute, 451
- code access, 451–452
 - Assert method, 451
 - Copy method, 451
 - Demand method, 451
 - Deny method, 451
 - Equals method, 451
 - FromXml method, 451
 - GetHashCode method, 451
 - GetType method, 451
 - Intersect method, 452
 - IsSubsetOf method, 452
 - management, 455–460
 - PermitOnly method, 452
 - RevertAll method, 452
 - RevertAssert method, 452
 - RevertDeny method, 452
 - RevertPermit-Only method, 452
 - ToString method, 452
 - ToXml method, 452
 - Union method, 452
- identity, 454–455
- registry, accessing, 459
- role-based, 452–454
- security tools, 474–475
- Windows Forms programming, 449–451
- PermissionSetAttribute class, 450**
- PermissionState property,**
 - SecurityException class, 476**
- PermissionType property,**
 - SecurityException class, 476**
- PermitOnly method, 452**
- PermitOnlySetInstance property,**
 - SecurityException class, 476**
- Permview utility**
 - function of, 474
 - overview, 469–470
- Peverify utility, function of, 475**
- PictureBox control, 641**
- PKCS, hash algorithms, 487–492**
- Policy activity, 941**
- polymorphism, 129, 176–177, 982**
 - description, 61
 - implementation, 177
 - inheritance and, 185–186

- late binding, 178–179
 - multiple interfaces, 180–181, 183–185
 - reflection, 181–183, 183–185
- late binding and, 177
- method signatures, 177
- System.Reflection namespace, 181
- ports, 1060**
- postbacks, 759**
- Prefix property, DataSet (ADO.NET)W, 433**
- PreInit event, 737**
- PreLoad event, 737**
- PreRender event, 737**
- PreRenderComplete event, 737**
- Preserve keyword, 41–42**
- preventing inheritance, 162**
- PreviousPageType directive, ASP.NET, 736**
- primary interface, 62, 162**
- primitive types, 24–26**
- PrincipalPermission class, 450**
 - Copy method, 453
 - Demand method, 453
 - Equals method, 453
 - FromXml method, 453
 - GetHashCode method, 453
 - GetType method, 453
 - Intersect method, 453
 - IsSubsetOf method, 453
 - IsUnrestricted method, 453
 - ToString method, 453
 - ToXml method, 453
 - Union method, 453
- PrincipalPermissionAttribute class, 450**
- principals, role-based permissions, 452**
- PrintableObject class, 191**
- PrintDialog control, 636**
- PrintPreviewDialog control, 636**
- Priority() method, 915**
- Priority method, 915**
- Private keyword, 75**
- Process class, XML documents, displaying, 427**
- processes, 898**
- ProcessRequest method, 1064**
- ProgID, 209**
- programmatic security, definition, 446**
- ProgressBar control, 641**
- Prohibited property, XmlReaderSettings, 409**
- properties, 78–80**
 - AllowFullOpen, 636
 - AutoScaleDimensions, 526
 - AutoScaleMode, 526
 - CacheDuration, 985
 - CausesValidation, 629
 - ClientSize, 526
 - Color, 636
 - ConnectionString, 371
 - Control class, Windows Forms, 598–599
 - CurrentCulture, 236
 - data access component, 371–372
 - data values and, 78
 - DataSet (ADO.NET), 433
 - DeclaringType, 216
 - default, 83–84
 - DeleteCommand, 357
 - deployment projects, Visual Studio, 841–843
 - DialogResult, 612–613
 - exceptions, 315–316, 323–324
 - extender providers, 624
 - FormBorderStyle, 605
 - HelpLink, 315, 328–329
 - InnerException, 315, 327–329
 - InsertCommand, 357
 - Localizable, 255
 - Log, 332
 - Margin, 619–620
 - MaximumSize, 599
 - Message, 315, 324
 - MessageName, 983
 - MinimumSize, 599
 - My Project, Visual Studio, 510–511

properties (continued)

properties (continued)

Name, 526
 Opacity, 606–607
 Owner, 606
 Padding, 619–620
 parameterized, 80–82
 Property method, 78–79
 read-only, 82–83
 Region, 607–608
 ResumeLayout, 526
 SecurityException class, 475–476
 SelectCommand, 354
 serializing, 652
 Set statement, 80
 shared, 101
 ShowDialog, 636
 Source, 315, 326–327, 332
 SpParamXml, 371
 SpParamXmlDoc, 371
 StackTrace, 315, 326–327
 Suspend Layout, 526
 TargetSite, 315, 327–329
 TopMost, 605
 TransparencyKey, 607
 types, 208
 UpdateCommand, 357
 UseWaitCursor, 599
 write-only, 83
 XmlAttribute class, 419–420
 XmlDocument class, 419
 XmlElement class, 419
 XmlException class, 413
 XmlNode class, 419
 XmlReaderSettings class, 409–410
 XmlWriterSettings, 401–402
 XslTransform class, 428
Property method, 78–79
PropertyGroup file node, 684
PropertyMap class, 707
PropertyMappingExceptionEventArgs class, 707

PropertyTranslator class, 707

Protected Friend keyword, 75

Protected keyword, 75

Protected methods, 152

protected variables, 153–154

protocols, 1057–1058

prototypes, 177

ProVB.NET (Visual Studio 2005), 522–525

form properties, 525

AutoScaleDimensions, 526

AutoScaleMode, 526

ClientSize, 526

Code Expansion, 529–531

code regions, 526–527

code snippets, 531–533

IntelliSense, 529

Name, 526

ResumeLayout, 526

running ProVB.NET, 527

Suspend Layout, 526

tabs, MDI and, 527

text editor, custom, 527–528

ProviderFactory class, 366

proxies

real, 1003

transparent, 1003

ProxyClient project, 1027

Public Key Cryptographic System (PKCS), 487–492

Public keyword, 75

.publickeytoken directive, referenced assemblies, 815

PublisherIdentityPermission class, 450

PublisherIdentityPermissionAttribute class, 450

Q

QFE (Quick Fix Engineering), 209

quantums, 901

queries, SQL

FOR XML AUTO, 436

- FOR XML EXPLICIT, 436
- FOR XML RAW, 435–436
- Queue object, Collections namespace, 42**
- queued components, 1046–1047**
 - client, building, 1048–1050
 - Computer Management Console, 1048
 - consoles, 1048
 - InterfaceQueuing attribute, 1047
 - invocations, 1050–1051
- R**
- RadioButton control, 641**
- RaftingContainer, 629**
- RaiseEvent keyword, 86, 160**
- RaiseEvent method, 155–156**
- raster graphics, WPF, 682**
- rawData, XML documents, 420–421**
- Read() method, traversing XML streams, 405**
- ReadElementString() method, XML strings, parsing, 413**
- ReadEndElement() method, 411**
- ReadInnerXml() method, 413**
- ReadOnly keyword, 82**
- read-only properties, 82–83**
- ReadOuterXml() method, 413**
- ReadStartElement() method, 411**
- ReadXml() method, DataSet (ADO.NET), 433**
- ReadXmlSchema() method, DataSet (ADO.NET), 433**
- ReceiveInboundConnection() method, 1167**
- ReceiveThreadEntryPoint() method, 1175**
- receiving events**
 - AddHandler method, 90–91
 - WithEvents keyword, 88–89
- ReDim statement, 41–42**
- Reference directive, ASP.NET, 736**
- reference types, 22–26, 33**
 - arrays, 39–40
 - multidimensional, 40
 - ReDim statement, 41–42
 - UBound function, 40–41
 - Collections namespace, 42–44
 - DBNull class and, 37–38
 - IsDBNull() function and, 37–38
 - nullable types, 38–39
 - Object class, 34
 - size, 23
 - String class, 34–37
- referenced assemblies, 815**
- references**
 - namespaces and, 290–292
 - objects, 67–68
- Reflection API, 216–217**
- ReflectionPermission class, 450**
- ReflectionPermissionAttribute class, 450**
- RefusedSet property, SecurityException class, 476**
- RegAsm, 893–896**
- Region property, 607–608**
- regions, 231–232**
- Register directive, ASP.NET, 736**
- RegisterClientScriptBlock method, 754**
- RegisterClientScriptInclude method, 756**
- RegisterStartupScript method, 755**
- registry, accessing, 459**
- Registry Editor**
 - files, importing, 850
 - keys, adding value, 848–850
- RegistryPermission class, 450**
- RegistryPermissionAttribute class, 450**
- Release method, 219**
- remote invocation, Java, 961**
- remoting, 1001**
 - Activated objects, 1006, 1007–1008
 - Activator.GetObject, 1024–1025
 - channels, 1003
 - HTTP, 1003
 - TCP, 1003

remoting (*continued*)

remoting (*continued*)

- client application, 1016–1020
- client-activated objects, 1005
- configuration, 1013–1015
- formatter objects, 1003
- host application, 1011–1016
 - library DLL, 1012–1013
 - project setup, 1012
- IIS as host
 - binary formatter, 1022–1024
 - client application, updating, 1022
 - creating host, 1020–1022
- interface DLL, 1025–1026
 - client application, 1026–1027
- library DLL, 1010
- message sinks, 1004
 - envoy sinks, 1004
 - object context sinks, 1004
 - server context sinks, 1004
- messages, 1003
- proxies, 1003
 - client application, 1027
 - DLL, 1027
 - real, 1003
 - transparent, 1003
- remote objects, 1002
- remoting hosts, 1003
- Serializable objects, 1006, 1008–1009
- serializable objects, 1002, 1005
- SingleCall objects, 1006–1007
- Singleton objects, 1006, 1007
- transport channel, 1003
- WCF and, 1001
- wellknown objects, 1005
- Remove() method, ValueType, 272**
- RenderPage() method, 197**
- Replicator activity, 942**
- reports, XML, generating, 426**
- RequestMinimum security level, Permview utility, 469**
- RequestOptional security level, Permview utility, 469**

- RequestRefused security level, Permview utility, 469**

- Resource Editor, 259–260**

- resource files, Windows Forms, 255–259**

- resource managers, 1031**

- ResourcePermissionBase class, 450**

- ResourcePermissionBaseEntry class, 450**

resources

- author blogs, 1204
- books, 1204
- global, 252–254
- language resource file, 249–250
- local, 246–252
- Web, 1203–1204

- RestoreDirectory property, 635**

- Resume() method, 915**

- ResumeLayout property, 526**

- Return keyword, 22**

- Return statements, 19**

- RevertAll method, 452**

- RevertAsset method, 452**

- RevertDeny method, 452**

- RevertPermit-Only method, 452**

- rich controls, 748**

- RichTextBox control, 641**

RIPEMD-160

- overview, 482–483
- secret key encryption, 483–487

- RMI (remote method invocation), 959**

- role management, ASP.NET, 790–794**

- role-based, permissions, 452–454**

- Rollback event, 855**

- round-trip engineering, 504**

- RPC (remote procedure calls), 960**

- RSA algorithm, 488–492**

- RSACryptoServiceProvider class, 488**

S

- SaveFileDialog control, 634–635**

- scheduling threads, 900–902**

- Schemas property, XmlReaderSettings, 409**
- scope**
 - methods, 77
 - variables, 47
- screen scraping, 1065**
- Scripting.FileSystem object, 219**
- scrollable forms, Windows Forms, 608–609**
- ScrollableControl class, 660**
- secondary interfaces, 164–165**
- secret key encryption, RIPEMD-160, 483–487**
- Secure Hash Algorithm (SHA), 481–482**
- Secure Sockets Layer (SSL), 497–499**
- security**
 - declarative, 469
 - hash algorithms
 - cryptographic, 479–481
 - digital signatures, 492–495
 - MD5, 482
 - overview, 478–479
 - PKCS, 487–492
 - RIPEMD-160, 482–487
 - .NET Framework, overview, 446–448
 - SHA (Secure Hash Algorithm), 481–482
 - SSL (Secure Sockets Layer), 497–499
 - types, 446
 - WCF, 1120–1122
 - Web Services
 - directory-level, 996–997
 - SSL (Secure Sockets Layer), 996
 - X.509 certificates, 495–497
- Security event log, 330**
- Security Identifier (SID), 452**
- security policies**
 - Caspol utility commands
 - examining policies, 460–461
 - modifying policies, 463–467
 - definition, 446
- security tools**
 - assembly management, 474–475
 - certificate management, 475
 - permissions, 474–475
- SecurityAttribute class, 450**
- SecurityException class, properties, 475–476**
- SecurityPermission class, 451**
- SecurityPermissionAttribute class, 451**
- Secutil utility, function of, 475**
- Select Case statement, 57**
- SelectCommand property, 354**
- self-describing assemblies, 818–819**
- semantic tools, 65**
- Send method, 584**
- SendButton, 1049**
- SendResultsEnd method, 584**
- SendResultsRow method, 584**
- SendResultsStart method, 584**
- Sequence activity, 942**
- Serializable attribute, 214**
- Serializable objects, 1008–1009**
- serializable objects, 1002**
- serialization**
 - DataSet objects, 364–365
 - DataTable objects, 364–365
 - XML
 - definition, 391
 - examples, 392–397
- Serialize() method, overriding, 394**
- server applications, 905–906**
- server controls, ASP.NET**
 - coding, 750–751
 - custom controls, 748
 - on design surface and, 749–750
 - events, 751–752
 - list controls, 748
 - Menu, 785–787
 - mobile controls, 748
 - rich controls, 748

server controls (*continued*)

server controls (*continued*)

- SiteMapPath, 784–785, 785–787
- TreeView, 787–790
- user controls, 748
- validation controls, 748
- Server Explorer (Visual Studio), 550–551**
- Service Repository, 957**
- ServiceController class, 1140**
 - CanStop property, 1140
 - ExecuteCommand method, 1140, 1143
 - Refresh method, 1140
 - ServiceName property, 1140
 - ServiceType property, 1141
 - Start method, 1140
 - Status property, 1141
 - Stop method, 1140
- ServiceInstaller class, 1128**
 - DisplayName property, 1129
 - ServiceName property, 1129
 - StartType property, 1129
- ServiceMetadataBehavior object, 1103**
- ServiceProcessInstaller class, 1128**
 - Account property, 1128
 - HelpText property, 1128
 - Password property, 1128
 - Username property, 1128
- Session_End event, 745**
- Session_Start event, 744**
- SGML (Standard Generalized Markup Language), 960**
- SHA (Secure Hash Algorithm), 481–482**
- shadowing, 132–138**
- Shadows keyword, 132**
- shallow copy operations, 45**
- shared assemblies, 816**
 - GAC (Global Assembly Cache), 816–817
- shared constructors, 103**
- shared events, 102–103**
 - inheritance, 160
- Shared keyword, 99, 100**

shared methods, 100–101

- inheritance and, 157–158
- overloading, 158–159
- shadowing, 159–160
- shared properties, 101**
- shared variables, 98–99**
- Short datatype, 25**
- Short integer type, 29**
- ShouldSerialize method, 653**
- Show method, 611**
- ShowColor property, 636**
- ShowDialog() method, 611**
- ShowDialog property, 635, 636**
- ShowEffects property, 636**
- ShowMessage() method, 1172**
- ShowXmlNode() subroutine, reversing XML streams, 406–407**
- SID (Security Identifier), 452**
- side-by-side execution, assemblies, 818**
- side-by-side versioning, 209**
- signatures, methods, 95–96**
- Signcode utility, function of, 474**
- Single datatype, 25**
- Single decimal type, 30**
- SingleCall objects, 1006–1007**
- single-level inheritance, 198**
- SingleLinkedList class, 271**
- Singleton objects, 1007**
- SiteMapPath server control, 784–785**
- SkipVerification permission set, 448**
- Sleep() method, 915**
- Sleep method, 915**
- Smart Tags, Windows Forms 2.0, 598**
- Sn utility, function of, 475**
- SOA (Service-Oriented Architecture), 14**
 - boundaries, 1092
 - contracts, 1092
 - foundations of, 1092
 - policies, 1092
 - schemas, 1092
 - services, 1092

SOAP (Simple Object Access Protocol), 963–964

- body, 986
- envelope, 986
- headers, 985–986
 - consuming Web Services, 987–989
 - Web Services and, 986–987

SoapFormatter, 1022–1023**SoapHeader class, 986****sockets, 1157**

- application
 - building, 1158–1160
 - shutting down, 1173–1177
- conversation windows, 1160–1161
 - connections, initiating, 1163–1166
 - Conversation form, 1161–1163
 - inbound connections, receiving, 1166–1168
- Message class, 1169–1173
- sending messages, 1168–1169

SolidColorBrush, 696**Solution Explorer, Visual Studio, 508–510****SortedDictionary, 202****SortedList object, Collections namespace, 42****sorting**

- culture settings and, 244–246
- strings, 244–246

Source Code Style attributes, 397

- transforming XML between standards, 431

Source property, 315, 326–327, 332

- XmlException class, 413

SourceExists method, 332**SourceUri property, XmlException class, 413****spaghetti code, 200****specific cultures, 232****SplitContainer control, 597****Splitter control, 597****SpParamXml property, 371****SpParamXmlDoc property, 371****SQL, queries**

- FOR XML AUTO, 436
- FOR XML EXPLICIT, 436
- FOR XML RAW, 435–436

SQL SELECT statement, FOR XML clause, 434**SQL Server**

- compared to DOM for XML, 420
- stored procedures
 - creating, 581–588
 - returned multiple values, 584–588
 - returned single value, 583
- user-defined types, creating, 565–581
- Web services, exposing, 588–595
- XML-related features, 427, 434–435

SQL Server 2000, XML and, 390**SQL Server 20005, XML and, 390****SQL Server .NET Data Provider, 358****SqlConnection.ClearPool method, 368****SqlConnection.ClearPools method, 368****SqlDataRecord object, 585****SqlDataSource control, ASP.NET 2.0, 775–778****SqlFunction attribute**

- DataAccess parameter, 572
- FillRowMethodName parameter, 572
- IsDeterministic parameter, 572
- IsPrecise parameter, 572
- SystemDataAccess parameter, 572
- TableDefinition parameter, 572

SqlPipe class

- ExecuteAndSend method, 584
- Send method, 584
- SendResultsEnd method, 584
- SendResultsRow method, 584
- SendResultsStart method, 584

SqlUserDefinedType

SqlUserDefinedType

- Format parameter, 566
- IsByteOrdered parameter, 566
- IsFixedLength parameter, 566
- MaxByteSize parameter, 567
- ValidationMethodName parameter, 567

SSL (Secure Sockets Layer), 497–499

- Web Services and, 996

stack, heap and, 23

Stack object, Collections namespace, 42

StackTrace property, 315, 326–327

- XmlException class, 413

StartPosition property

- CenterParent, 604
- CenterScreen, 604
- Manual, 604
- WindowsDefaultBounds, 604
- WindowsDefaultLocation, 604

State activity, 943

StateFinalization activity, 943

StateInitialization activity, 943

StatusBar control, 597

StatusStrip control, 597

Storeadm utility, function of, 474

stored procedures

- calling, 348–350
- Command objects and, 346–350
- creating, 347–348
- XML structure, building data access component, 372

StoredProcedureHelper class, 370

StorePermission class, 451

StorePermissionAttribute class, 451

stream-based XML document generation,

399. See also stream-style parsers

streaming, XML documents, 400–404

- reading, 404–418
- steps for document generation, 403

stream-style parsers (XML), architecture, 399

StreamWriter object

- Close method, 334
- Flush method, 334
- methods, 334
- trace files and, 333
- Write method, 334
- WriteLine method, 334

String() constructor, 35–36

String class, 34–35

- Compare method, 35
- CompareOrdinal method, 35
- Concat method, 35
- constructors, 35
- Copy method, 35
- Empty method, 35
- Equals method, 35
- immutability, 36–37
- PadLeft method, 36
- PadRight method, 36
- String() constructor, 35–36
- Substring method, 36

String datatype, 25

StringBuilder, Append method, 45

strings

- constants, 37
- passing to service, 1145
- sorting strings, 244–246

strong names, 454, 1039

structure constraints, generic, 279–281

structured exception handling, 315

styles, XAML, 696–697

stylesheet command, XSLT, 425

Sub keyword, 19, 22, 76

Sub Main, forms and, 602–603

Sub routines, 76

subclass, creating, 118–121

subclassing, 194

subnet masks, 1059

Substring method, 36

superclass, 116

System.Text namespace

- Suspend() method, 915**
- Suspend activity, 943**
- Suspend Layout property, 526**
- synchronization objects**
 - AutoResetEvent, 921
 - exclusive locks, 921
 - Interlocked, 921
 - ManualResetEvent, 921
 - Monitor, 921
 - Mutex, 921
 - ReaderWriterLock, 921
 - SyncLock statement, 921–922
 - threading and, 920–927
- syntactic tools, 65**
- System event log, 330**
- System namespace, 10, 516**
- System.Collections namespace, 10, 292**
 - List object, 244
- System.Collections.Generic namespace, List object, 244**
- System.ComponentModel.BindingList, 265**
- System.ComponentModel.Component, IDisposable interface and, 224**
- System.Data namespace, 10, 292, 516**
- System.Data.SqlClient, 370**
- System.Deployment namespace, 516**
- System.Diagnostics namespace, 10, 292**
- System.DirectoryServices namespace, 287**
- System.Drawing namespace, 292, 516**
 - GDI+ and, 668–669
- System.Drawing.Graphics class, GDI+ and, 669**
- System.Drawing.Point structure, 23–24**
- System.Drawing.Text namespace, 296**
- System.EnterpriseServices namespace, 293, 1029**
- System.GC.Collect method, 221**
- System.Globalization namespace, CultureInfo object, 235**
- SystemInformation.VerticalScrollBarWidth parameter, 676**
- System.IO namespace, 10, 293**
- System.MarshalByRefObject, remote objects and, 1002**
- System.Math namespace, 10**
- System.Net namespace, 1061**
 - HttpListener class, 1061
 - WebClient class, 1061
 - WebRequest class, 1061
 - WebResponse class, 1061
- System.Net.HttpWebRequest class, 1153**
- System.Net.HttpWebResponse class, 1153**
- System.Net.NetworkStream, 1159**
- System.Net.Sockets namespace, 1157**
- System.Net.Sockets.TcpClient, 1159**
- System.Net.Sockets.TcpListener, 1159**
- System.Net.WebClient class, 1154**
- System.Net.WebProxy.WebClient class, 1154**
- System.Net.WebRequest class, 1153**
 - Create method, 1155
- System.Object class, ToString method, 142–143**
- System.Reflection namespace, 10, 181**
 - Assembly class, 216
- System.Runtime.Serialization namespace, 1115**
- System.Security namespace, 10**
- System.Security.Cryptography.AsymmetricAlgorithm class, 488**
- System.Security.Namespace, permissions**
 - code access, 451–452
 - identity, 454–455
 - namespace members, 449–451
 - role-based, 452–454
 - Windows Forms programming, 449–451
- System.ServiceModel namespace, 1099**
- System.Text namespace, 293**

System.Threading namespace

System.Threading namespace, 293

System.Threading.Thread, 1159

System.Transactions namespace, 1029

CommittableTransaction class, 1054

EnlistTransaction method, 1055

resource managers, 1056

TransactionScope class, 1055

System.Uri class, 1153

System.Web namespace, 293

System.Web.Description namespace, 957

System.Web.Mail namespace, accessing, 416

System.Web.Services namespace, 294, 957

WebService class, 990–991

System.Web.Services.Description namespace, 992

System.Web.Services.Discovery namespace, 957, 992–993

System.Web.Services.Protocols namespace, 957, 993–994

System.Windows.Forms namespace, 294, 516, 602

Control class, 659–660

System.Xml class, 389

exceptions and, 413

standards-based XML processing, 399

System.XML namespace, 516

System.Xml namespace, DOM support, 418–420

System.Xml.Schema class, 389

System.Xml.Serialization class, 389

System.Xml.XPath class, 389

System.Xml.Xsl class, 389

T

TabControl control, 642

TableLayoutPanel control, Windows Forms, 600, 620–621

tables, XML, displaying, 426–427

tags, XML, 391

TargetSite property, 315, 324–326

GetBaseException method, 327–328

HelpLink property, 328–329

Source property, 326–327

StackTrace property, 326–327

XmlException class, 413

Task List (Visual Studio), 549–550

TCP channels, 1003

TDS (Tabular Data Stream), 358

template command, XSLT, 425

Terminate activity, 943

TestQueuedTransactions, 1051–1053

TestTrue() method, 28

text boxes, AutoCompletion, 598

TextBox control, 642

abstraction, 170

local resources, 247

TextStream object, 219

TextWriterTraceListener, 333

Thread object

Abort method, 915

ApartmentState method, 915

Join method, 915

Priority method, 915

Resume method, 915

Sleep method, 915

Suspend method, 915

thread pool, 909–910

BackgroundWorker control, 910

BeginXYZ() methods, 910

delegates, 910–912

Thread.CurrentThread.CurrentCulture.ToSt ring() call, 235

threading

Abort() method, 915

ApartmentState() method, 915

data copies, transferring, 916–917

data ownership, transferring, 917–919

- implementing, 906–909
 - manually creating, 914–915
 - manually queuing work, 912–914
 - thread pool, 909–912
- interactive applications, 905
- Join() method, 915
- options
 - manually queuing work, 912–914
 - thread pool, 909–912
- preemptive multithreading, 898, 901
- Priority() method, 915
- Resume() method, 915
- shared data and, 915–916
 - avoiding shared data, 916–919
 - synchronization and, 919–920
- Sleep() method, 915
- Suspend() method, 915
- synchronization and, 919–920
 - synchronization objects, 920–927
- threads, 897–898**
 - cultures, 233–236
 - manually creating, 914–915
 - primary thread, 898
 - quantums, 901
 - scheduling, 900–902
 - suspending, 902
 - thread affinity, 903
 - thread safety, 903
 - when to use, 903–904
- Throw activity, 943**
- Throw keyword, 317, 319–320**
- throwing new exceptions, 320–321**
- time sharing, 900**
- time slicing, 900**
- Timer control, 642**
- TibExp, 896**
- TibImp, 880–881**
 - default interop assembly, 880
- toolbar, elements**
 - adding, 631–632
 - creating, 632
 - moving, 632
- Toolbar control, 597**
- Toolbars control, 629–632**
- toolbox, icons, controls, 674–675**
- ToolStrip control, 597, 629–632**
- ToolStripButton control, 630**
- ToolStripComboBox control, 630**
- ToolStripControlHost control, 630**
- ToolStripDropDownButton control, 630**
- ToolStripDropDownItem control, 630**
- ToolStripDropDownMenuItem control, 630**
- ToolStripDropSplitButton control, 630**
- ToolStripItem base class**
 - ToolStripButton control, 630
 - ToolStripComboBox control, 630
 - ToolStripControlHost control, 630
 - ToolStripDropDownButton control, 630
 - ToolStripDropDownItem control, 630
 - ToolStripLabel control, 630
 - ToolStripMenuItem control, 630
 - ToolStripSeparator control, 630
 - ToolStripSplitButton control, 630
 - ToolStripTextBox control, 630
- ToolStripLabel control, 630**
- ToolStripSeparator control, 630**
- ToolStripTextBox control, 630**
- ToolTip control, 622–623**
- TopMost property, 605**
- ToString method, 316, 452**
 - permission objects, 458
 - System.Object class, 142–143
- ToXml method, 452**
- Trace class, 335–339**
- trace files, writing to, 333–335**
- TraceSwitch, 335–339**
 - levels, 336
 - TraceError property, 336
 - TraceInfo property, 336
 - TraceVerbose property, 336
 - TraceWarning property, 336

TrackBar control

TrackBar control, 642

TransactionAttribute, 1043–1044

TransactionOption, 1043–1044

transactions

ACID test, 1030

business logic, 1035–1039

components, registering, 1039–1040

databases

 creating, 1033–1034

 populating, 1035

invalid data, 1045

JIT (Just-In-Time) activation, 1045–1046

object pooling, 1046

test application, 1042–1043

tiers, 1031–1032

Transact-SQL, OPENXML extension, 435

Transform method, XslTransform class, 428–429

Transform() method, 427

TransparencyKey property, 607

Transport Security Layer (TSL), 497

TransportWithMessageCredential option, 1102

TreeView control, 642, 787–790

Try keyword, 317–319

Try structures, nested, 322–324

TryCast function, 72

TryCast method, 54

Try...Catch block, 329

TryParse method, 53

TSL (Transport Security Layer), 497

T-SQL (Transact-SQL), 563

 data sets and, 582

 Visual Basic comparison, 564–565

type constraints, generic, 279–281

Type object, 216

types, 208–209

 fields, 208

 methods, 208

 properties, 208

U

UBound function, 40–41

UDDI (Universal Description, Discovery, and Integration), 957

uiCulture attribute, 237

UInt16 integer type, 29

UInt32 integer type, 29

UInt64 integer type, 29

UIPermission class, 451

UIPermissionAttribute class, 451

UML (Unified Modeling Language), 115

Uninstall event, 855

Union method, 452

Unload event, 737

unsigned types, 30

UpdateCommand attribute, 781

UpdateCommand property, 357

Updater Application Block, 871–872

updates, ClickOnce deployment, 867

URI (Uniform Resource Identifier), 1153

Url property, SecurityException class, 476

URL (Uniform Resource Locator), 1153

UrlEncode method, 1064

URLIdentityPermission, 468

user controls, 748

User Interface Editor, 851–852

 dialog boxes

 adding, 853–854

 order, 853

 properties, 854

 installation modes

 End stage, 852

 Progress stage, 852

 Start stage, 852

UserControl class, 660

UserControl composite control, 660–661

 creating, 661–662

 example, 663–667

 properties, 663

 resizing, 662–663

user-defined functions, 579–581**user-defined types**

creating, 565–581

functions

creating, 572–579

user-defined, 579–581

Parse method, 567

UseWaitCursor property, Windows Forms, 599**Using command, 222****Using keyword, streaming XML, 402****V****Validating event, 628****validation, PrinciplePermission class, 453****validation controls, 748****ValidationFlags property,****XmlReaderSettings, 409****ValidationType property,****XmlReaderSettings, 409****Value property, XmlAttributes class, 424****value types, 22–26**

Boolean, 26–28

byte, 32–33

char, 32–33

DateTime, 33

decimal types, 30–32

integer, 29–30

unsigned, 30

value-of command, XSLT, 425

populating tables, 427

ValueType, 270**variables**

declaring, 18

Dim statement, 18

delegate, 107–108

global, 47

instance variables, 65–66

member variables, 65

protected, 153–154

scope, 47

shared, 98–99

VB, T-SQL comparison, 564–565**vbc.exe.config file, 1189–1190**

/baseaddress, 1200

/codepage, 1200

compiler output

/nologo, 1192

/utf8output, 1192

/verbose, 1192

configuration, 1190–1192

debugging

/bugreport, 1196

/debug, 1196

error-checking

/nowarn, 1196

/quiet, 1197

/removeintchecks, 1197

/warnaserror, 1197

Help

/?, 1198

/help, 1198

language

/optioncompare, 1198

/optionexplicit, 1198

/optionstrict, 1198

/main, 1200

.NET assemblies

/addmodules, 1194

/delaysign, 1194–1195

/imports, 1195

/keycontainer, 1195

/keyfile, 1195

/libpath, 1195

/reference, 1196

/noconfig, 1201

optimization

/filealign, 1193

/optimize, 1193

output files

/doc, 1193

vbc.exe.config file (continued)

vbc.exe.config file (continued)

- /netcf, 1193
- /out, 1193
- /target, 1193
- preprocessor, /define, 1198–1199
- /recurse, 1201
- resources
 - /linkresource, 1199
 - /resource, 1199
 - /win32icon, 1199
 - /win32resource, 1199
- /rootnamespace, 1201
- /sdkpath, 1201
- vbc.rsp, 1201–1202**
- vector graphics, WPF, 682**
- .Ver directive, referenced assemblies, 815**
- versioning**
 - assemblies
 - application isolation and, 818
 - self-describing, 818–819
 - side-by-side execution and, 818
 - version policies, 819–820
 - support, 209–210
- virtual methods, 128–130**
- Visual Basic 2005 Express Edition, 503**
- Visual Studio, calculating required permissions, 471–474**
- Visual Studio 2005, 501–502**
 - applications
 - enhancing, 533–536
 - running in debugger, 541–546
 - Assembly Information screen, 511
 - Assembly Version attribute, 512
 - Com Visible attribute, 512
 - Company attribute, 512
 - Copyright attribute, 512
 - Description attribute, 512
 - File Version attribute, 512
 - Guid attribute, 512
 - Product attribute, 512

- Title attribute, 512
- Trademark attribute, 512
- build configurations, 546–549
- class diagrams, 553–554
- Class View window, 74
- Command window, 550
- Compile settings, 512–513
- components, additional, 533
- debugging, 514–515
 - Autos window, 546
 - breakpoints, 542–544
 - Call Stack window, 545
 - Immediate windows, 545
 - Locals window, 545
 - Output window, 544–545
 - Watch windows, 545
- deployment projects
 - ASPNET Web application, 839–840
 - creating, 833–840
 - File System Editor, 843–848
 - primary output properties, 838
 - project output, 835–836
 - project templates, 831–833
 - properties, 841–843
 - root setup node properties, 836–838
 - walk-through, 834–839
- event handler, customization, 537–538
- Expression Suite, 703
- macros, recording, 551–553
- My Project, properties, 510–511
- Orcas, 703
- performance tools, 558–559
- project templates
 - CAB Project template, 832–833
 - Merge Module Project template, 833
 - Setup Project template, 833
 - Setup Wizard, 833
 - Smart Device CAB Project template, 833
 - Web Setup Project template, 833

- projects
 - Database, 508
 - Office, 508
 - Smart Device, 508
 - Starter Kits, 508
 - templates, 505–508
 - Test, 508
 - Web, 508
 - Windows, 508
 - ProVB.NET project, 522–525
 - form properties, 525–533
 - references, 516–517
 - resources, 517–518
 - Server Explorer, 550–551
 - settings, 518–521
 - Solution Explorer, 508–510
 - Task List, 549–550
 - Team Edition for Developers, 557–558
 - Team System
 - Team Editions, 556–557
 - TFS (Team Foundation Server), 555–556
 - unit tests, 559–562
 - Visual Basic 2005 Express Edition, 503
 - Visual Studio 2005 Professional Edition, 503
 - Visual Studio 2005 Standard Edition, 503
 - Visual Studio 2005 Team Edition for *, 504
 - Visual Studio 2005 Team Suite, 504
 - Visual Studio 2005 Tools for Office, 503
 - Visual Web Developer 2005 Express Edition, 503
 - Web Services
 - consuming, 976
 - typed datasets, 972–975
 - Web references, 976–977
 - XAML and, 698–703
 - XML comments, 563
 - Visual Studio IDE**
 - control properties, reset method, 653–654
 - inheritance, controls and, 651–652
 - Visual Web Developer 2005 Express Edition, 503**
 - VScrollBar control, 642**
- ## W
- Walk() method, 76**
 - WAN (wide area network), 960**
 - WCF (Windows Communication Foundation), 3, 5, 13–14, 994, 1091**
 - capabilities, 1093–1094
 - consumer
 - building, 1105–1113
 - configuration file changes, 1109–1111
 - consumption code, 1111–1113
 - data contracts, 1116–1118
 - service reference, 1106–1109
 - data contracts, 1113–1114
 - consumer, 1116–1118
 - host, 1116
 - services, 1114–1116
 - namespaces, 1120
 - .NET Framework and, 1093
 - overview, 1093–1095
 - remoting and, 1001
 - security, 1120–1122
 - services
 - building, 1095–1105
 - components of, 1097
 - console application, 1098
 - console application as host, 1101–1103
 - contract, 1097–1098
 - data contracts, 1114–1116
 - interface, creating, 1098–1099
 - interface, utilizing, 1099–1100
 - WSDL document, 1103–1105
 - WCF_WithDataContract, 1114**

Web forms

Web forms, 12

Web pages, downloading, 1153

Web references, Web Services, 976–977

Web resources, 1203–1204

Web Services, 957–959

architecting with, 994–995

architecture

 application development, 959

 ORBs, 959

building, 966–970

connectivity, 998

consuming

 building consumer, 978–982

 SOAP headers, 987–989

DCOM, 960–961

responses, caching, 985

security, 997

 directory-level, 996–997

 SSL (Secure Sockets Layer), 996

SOAP 1.2 and, 989–990

SOAP headers and, 986–987

speed, 998

state, 997

System.Web.Services namespace,
 990–991

System.Web.Services.Description name-
 space, 992

System.Web.Services.Discovery name-
 space, 992–993

System.Web.Services.Protocols name-
 space, 993–994

transactions, 997–998

Visual Studio, Web references, 976–977

WSDL (Web Services Description
 Language), 964–966

Web services, exposing, SQL Server and, 588–595

web services, 13–14

Web Services Enhancements (WSE), 994

WebBrowser control, Windows Forms, 600

WebClient class, 1061, 1078

 BaseAddress, 1079

 Credentials, 1079

 DownloadData, 1079

 DownloadFile, 1079

 DownloadString, 1079

 Headers, 1079

 OpenRead, 1079

 OpenWrite, 1079

 Proxy, 1079

 QueryString, 1079

 ResponseHeaders, 1079

 UploadData, 1079

 UploadFile, 1079

 UploadString, 1079

 UploadValues, 1079

web.config.comments file, cultures, 237

WebMethodAttribute class,

**System.Web.Services namespace,
 991**

WebMethods, overloading, 982–983

WebRequest class, 1154

 Create method, 1061

 Credentials method, 1061

 FileWebRequest, 1062

 GetRequestStream method, 1061

 GetResponse method, 1061, 1155

 Headers method, 1061

 HttpWebRequest, 1062

 Method method, 1061

 Proxy method, 1061

 Timeout method, 1061

WebRequestMethods.Ftp

 AppendFile field, 1068

 DeleteFile field, 1068

 DownloadFile field, 1068

 GetDateTimeStamp field, 1068

 GetFileSize field, 1068

 ListDirectory field, 1068

 ListDirectoryDetails field, 1068

- MakeDirectory field, 1068
- PrintWorkingDirectory field, 1069
- RemoveDirectory field, 1069
- UploadFile field, 1069
- UploadFileWithUniqueName field, 1069
- WebResponse class, 1061**
- Webservice attribute, 968**
- Webservice class, System.Web.Services namespace, 990–991**
- Webservice directive**
 - Class attribute, 967
 - CodeBehind attribute, 968
 - Debug attribute, 968
 - Language attribute, 968
- WebserviceAttribute class, System.Web.Services namespace, 991**
- WebserviceBinding attribute, 968**
- WebserviceFault activity, 941**
- WebserviceInput activity, 941**
- WebserviceOutput activity, 941**
- Webservices, Visual Studio**
 - consuming, 976
 - typed datasets, 972–975
- WebservicesBindingAttribute class, System.Web.Services namespace, 991**
- well-formed XML, 391**
- WF (Windows Workflow), 3**
 - activities
 - CallExternalMethod, 940
 - Code, 943
 - CompensatableSequence, 942
 - Compensate, 943
 - ConditionedActivityGroup, 942
 - custom, 944–950
 - Delay, 943
 - EventDriven, 942
 - FaultHandler, 942
 - HandleExternalEvent, 940
 - IfElse, 941
 - InvokeWebService, 941
 - InvokeWorkflow, 941
 - Listen, 941
 - Parallel, 942
 - Policy, 941
 - Replicator, 942
 - Sequence, 942
 - State, 943
 - StateFinalization, 943
 - StateInitialization, 943
 - Suspend, 943
 - Terminate, 943
 - Throw, 943
 - WebserviceFault, 941
 - WebserviceInput, 941
 - WebserviceOutput, 941
 - While, 942
 - activity library, 932
 - applications, 929–930
 - ASP.NET and, 952–956
 - Code activities, 936
 - custom activities, 932
 - host process, 932
 - IfElse activities, 938
 - rule definitions, 931
 - sequential workflows, 932
 - state machine workflows, 932
 - WF runtime services, 932
 - Windows Forms and, 950–952
 - Windows Workflow Foundation, 932–934
 - workflow, 932
 - workflow runtime engine, 932
 - XML files, 930
- While activity, 942**
- While statement, 59**
- Windows Forms, 5**
 - AutoCompletion, 598
 - autocompletion, 625–626
 - borders, 605

Windows Forms (continued)

Windows Forms (continued)

- browser-based applications and, 11–12
- CenterParent, 604
- CenterScreen, 604
- client applications and, 11–12
- control arrays, 643–645
- Control class, properties, 598–599
- controls
 - anchoring, 617
 - Button, 639
 - CheckBox, 639
 - CheckedListBox, 639
 - ColorDialog, 635–636
 - ComboBox, 640
 - containers, 617, 645
 - control tab order, 615
 - DateTimePicker, 640
 - docking, 615–616
 - DomainUpDown, 640
 - FlowLayoutPanel control, 618–620
 - FontDialog, 636
 - GroupBox container control, 621–622
 - HScrollBar, 640
 - ImageList, 640
 - Label, 640
 - LinkLabel, 640
 - ListBox, 640
 - ListView, 641
 - MaskedTextBox, 626–628
 - MonthCalendar, 641
 - NotifyIcon, 641
 - NumericUpDown, 641
 - OpenFileDialog, 634–635
 - PageSetupDialog, 636
 - Panel container control, 621–622
 - PictureBox, 641
 - positioning, 615–618
 - PrintDialog, 636
 - PrintPreviewDialog, 636
 - ProgressBar, 641
 - RadioButton, 641
 - replacements for older, 600–601
 - retired, 642–643
 - RichTextBox, 641
 - SaveFileDialog, 634–635
 - sizing, 615–618
 - TabControl, 642
 - TableLayoutPanel, 620–621
 - TextBox, 642
 - Timer, 642
 - Toolbars, 629–632
 - ToolStrip, 629–632
 - TrackBar, 642
 - TreeView, 642
 - VScrollBar, 642
- coordinates, 645
- default instances of forms, 601–602
- dialog forms, 611–613
- DialogResult property, 612–613
- dialogs
 - ColorDialog control, 635–636
 - FontDialog control, 636
 - OpenFileDialog control, 634–635
 - PageSetupDialog control, 636
 - PrintDialog control, 636
 - PrintPreviewDialog control, 636
 - SaveFileDialog control, 634–635
- drag and drop, 637–639
- extender providers
 - ErrorProvider, 624
 - HelpProvider, 623–624
 - properties, 624
 - ToolTip, 622–623
- FlowLayoutPanel control, 600
- focus, 645
- FormBorderStyle property, 605
- GDI+ and, 669–674
- HTML and
 - IE, launching from application, 1179–1180

- page titles, updating, 1180–1181
- toolbars, creating, 1181–1185
- URLs, updating, 1180–1181
- Web browsing in applications, 1178–1179
- WebBrowser control, 1185–1186
- importance of, 597–598
- inheritance, 608
- libraries, 692
- Manual, 604
- MaskedTextBox control, 600
- MaximumSize property, 599
- MDI forms
 - child forms, 610
 - child windows, 611
 - parent forms, 609
 - VB 2005 example, 610–611
 - VB6 and VB 2005, 609
- menus
 - adding items, 633
 - checkmarks, 633
 - context menus, 633
 - icons, 633
 - manipulating at runtime, 634
- MinimumSize property, 599
- modal forms, 611
- Opacity property, 606–607
- owned forms, 605
 - AddOwnedForm() method, 606
- OwnedForms collection, 606
- Owner property, 606
- Region property, 607–608
- resource files in, 255–259
- runtime and, 613–614
- scrollable forms, 608–609
- Smart Tags, 598
- startup form, 603–604
- startup location, 604
- Sub Main and, 602–603
- System.Windows.Forms namespace, 294
- tab order, 645
- TableLayoutPanel control, 600
- toolbar
 - creating with ToolStrip control, 631–632
 - elements, standard set, 632
 - moving elements, 632
- TopMost property, 605
- TranparencyKey property, 607
- translucent forms, 606–608
- transparent forms, 606–608
- UseWaitCursor property, 599
- validating data entry
 - CausesValidation property, 629
 - Validating event, 628–629
- WebBrowser control, 600
- WindowsDefaultBounds, 604
- WindowsDefaultLocation, 604
- WPF and, 705
 - integration limitations, 719–720
- WPF controls in, 708–714
- Windows Forms programming**
 - code access permissions, 455–460
 - permissions, 449–451
- Windows Installer, deployment, 831**
- Windows Services**
 - characteristics of, 1124
 - commands, custom, 1143–1145
 - communication with, 1139–1143
 - counter monitor services, creating, 1131–1136
 - creating, 1130–1131
 - debugging, 1149–1152
 - examples, 1123–1124
 - executables, multiple services within, 1129
 - file watcher
 - creating, 1145–1149
 - Event Log, 1145–146
 - FileSystemWatcher, 1146–1147

Windows Services (continued)

Windows Services (continued)

- Created event, 1148–1149
- EnableRaisingEvents property, 1147
- EventLog, 1148
- Filter property, 1147
- IncludeSubdirectories property, 1147
- NotifyFilter property, 1147
- OnStart, 1148
- OnStop, 1148
- Path property, 1147
- interacting with, 1125
- .NET Framework classes and, 1126–1129
 - installation-oriented classes, 1128–1129
- passing strings to service, 1145
- performance counter
 - changing value, 1138–1139
 - creating, 1136–1137
 - integrating into service, 1138
- ServiceBase class, 1129
 - OnContinue event, 1127
 - OnCustomCommand event, 1127
 - OnPause event, 1127
 - OnPowerEvent event, 1127
 - OnSessionChange event, 1127
 - OnShutdown event, 1127
 - OnStart event, 1127
 - OnStop event, 1127
- ServiceController class, 1129, 1140
- System.Configuration.Install.Installer, 1126
- System.ServiceProcess.ServiceBase, 1126
- System.ServiceProcess.ServiceInstaller, 1126
- System.ServiceProcess.ServiceProcessInstaller, 1126

WindowsFormsHost class, 707

- AutoSizing property, 707
- Docking property, 707

- Location property, 707

- Margin property, 707

Windows.Forms.Integration namespace

- ChildChangedEventArgs class, 706
- ElementHost class, 706
- IntegrationExceptionEventArgs class, 706
- LayoutExceptionEventArgs class, 706
- PropertyMap class, 707
- PropertyMappingExceptionEventArgs class, 707
- PropertyTranslator class, 707
- WindowsFormsHost class, 707

WithEvents keyword, 85

WPF (Windows Presentation Foundation),

2, 5, 12–13, 679–681

- applications, creating, 683–686
- configuration, 682–683
- controls in Windows Forms, 708–714
- installation, 682–683
- raster graphics, 682
- vector graphics, 682
- Windows Forms and, 705
 - hosting, 715–719
 - integration limitations, 719–720
- XAML, XAML namespace, 686–690

Write method, 334

WriteEntry method, 332

WriteExceptionEntry method, 304

Writelf method, 334

WriteLine method, 334

WriteLinelf method, 334

WriteOnly keyword, 83

write-only properties, 83

WriteToLog method, 219

WriteXml() method, DataSet (ADO.NET), 433

WriteXmlSchema() method, DataSet (ADO.NET), 433

writing to trace files, 333–335

WS-* protocols, 1094–1095

WS-AtomicTransaction, 1095**WS-Coordination, 1095****WSDL (Web Services Description Language), 964–966, 1094****WSE (Web Services Enhancements), 994, 1091****WS-ReliableMessaging, 1095****WS-SecureConversation, 1095****WS-Security, 1095****X****X.509 certificates, security, 495–497****XAML**

application code, 691–694

attributes

x:Class, 687

x:ClassModifier, 687

x:FieldModifier, 687

x:Key, 687

x:Name, 688

x:Shared, 688

x:Subclass, 688

x:TypeArguments, 688

controls, 694–695

directives

x:Code, 690

x:XData, 690

extensions

x:Array, 689

x:Null, 689

x:Static, 689

x:Type, 689

layout, 697

resources, 695–696

styles, 696–697

Visual Studio and, 698–703

XAML namespace, 686–690

XCOPY deployment, 830–831**XML (Extensible Markup Language), 4, 14–15, 963**

attributes, 397–398

classes, 389

compared to HTML, 391

documents

creating programmatically, 400–404

generating with ADO.NET, 433–437

reading streams, 404–418

elements (nodes), 391

empty tags, 391

exception handling, 413–415

hierarchy, 391

nodes

Element, 405

Whitespace, 405

overview, 390–392

reports, generating, 426

retrieving from file, 423–425

SQL Server and, 437

streaming email, 415–418

tables, displaying, 426–427

tags, 391

transforming between standards,
430–432**XML serialization**

definition, 392

examples, 392–397

Xml server control, ASP.NET, 442–444**XmlAttribute class**

DOM and, 419–420

traversing XML attributes, 423

**XmlDataSource control, ASP.NET,
437–442**

namespace issues, 442

XmlDocument class, 417

DOM and, 419

XmlDocument instance variable, 371**XmlElement class, DOM and, 419****XmlException class, properties, 413****XmlNode class, DOM and, 419**

XmlNodeList class

XmlNodeList class, traversing XML documents, 421

XmlReader class, 400
opening streams, 405

XmlReaderSettings class, properties, 409–410

XmlResolver property, 428
XmlReaderSettings, 409

XmlSerializer class, 392–394

XmlTextReader class, traversing XML, 410–413

XmlTransform class, 400

XmlWriter class, 400

XmlWriterSettings object, configuring, 401–402

XPathNavigator parameter, XsltTransform method, 428

Xsl namespace, classes, 432–433

XslCompiledTransform object, displaying XML documents, 429

XSLT

commands, 425

definition, 425

principles of operation, 425

reports, generating, 426–427

tables, displaying, 426–427

transforming XML between standards, 430–432

XsltArgumentList object, displaying XML documents

XsltTransform class

methods, 428

properties, 428

XML documents, displaying, 427

Z

Zone property, SecurityException class, 476

ZonIdentityPermission, 468







