

Index

• *Symbols and Numerics* •

@ (at) sign
 EmailValidator, 206
 XML data, 166
@Embed syntax, 150
@font-face, 358, 370
{ } (curly braces) in MXML data binding
 expression, 286–287, 291
3D engines for ActionScript, 388
100% setting for chart, 259, 261–262
360|Flex conference (Web site), 395

• *A* •

absolute compared to relative layout
 containers, 108–110
accessibility enabled application, 67
Accordion navigator control, 242–245
Action Message Format (AMF) binary
 transfer, 320
ActionScript
 3D libraries, 388
 Array data structure, 159
 ArrayCollection, 161, 298–300
 audio controls, 151–153
 black box aspect of, 34–35
 classes in, 31–33, 35–36
 code blocks in MXML file structure,
 75–78
 code hinting, 80, 81
 component creation decisions, 341
 container elements, 221
 in data binding expression, 78, 288–289
 definition, 2
 effect triggers, 354
 event listeners, adding, 45–47
 getters and setters, 33–34
 historical development, 10–11
 import statements, 82–84
 inheritance concept, 36–37
 interface overview and definition, 37–38
 introduction, 27
 JavaScript, compared to, 13–14, 30, 40
 Menu controls, 175–176
 MXML, relationship to, 40–42, 75–78
 objects in, 31–33
 overview, 10
 packages in, 35–36
 physics engines, 388
 pop-up control, 137
 renaming classes, 99
 sizing properties for container
 components, 223
 skinning with, 364
 static methods and variables, 38–40, 235
 styles, 79, 368–369
 XML objects, 159
 XMLList objects, 160
 XMLListCollection, 162, 301–302
ActionScript Physics Engine (APE), 389
ActionScript Project type, 59, 63–65
addChild method, 221
addEventListener method, 45
addItem method, 306
addItemAt method, 306–307
addPopUp method, 39
Adobe CS3 skin extensions (Web site), 372
Adobe Developer Connection, 392
Adobe Flash
 Flex, relationship to, 1, 10, 12–13
 historical development, 11
 loading of external XML data, 10
 programmatic skinning, 364
 XML objects, 159
Adobe Flash Player
 advantages of, 14
 HTML support, 149
 lack of 3D support, 388
 overview, 11
 remote data access restrictions, 315–316
 Silverlight, compared to, 14–15

- Adobe Flex
 - advantages of, 9
 - AJAX, relationship to, 13–14
 - application-building process, 17–25
 - benefits of, 14
 - components of, 10–11
 - CSS support, 78
 - data binding. *See* data binding
 - data collections. *See* data collections
 - definition, 10–11
 - development tool. *See* Flex Builder
 - Flash, relationship to, 1, 10, 12–13
 - framework for. *See* framework, Flex
 - history, 10–11
 - introduction, 1–5
 - manager tools, 323–332
 - new developments, 12
 - open-source materials, 10–11, 383–389, 396
 - remote data. *See* remote data
 - resources, 391–396
 - as RIA, 9–10
 - Silverlight, relationship to, 14–15
 - version differences, 55
 - Web site, 54
- Adobe Integrated Runtime (AIR)
 - (Web site), 11, 15, 61
- Adobe Labs (Web site), 55
- Adobe Web site, 54
- AdvancedDataGrid control, 171
- AIR (Adobe Integrated Runtime) (Web site), 11, 15, 61
- AJAX (Asynchronous JavaScript and XML), 13–14, 27
- Alert control, 235–236
- Alert.show function, 39, 235
- alignment controls, Design mode, 110–112
- alignSymbol property, 204, 212
- allowedFormatChars property, 205–206
- allowMultipleSelection property, 177
- Alphabetical properties inspector view, 120
- AMF (Action Message Format) binary transfer, 320
- animation
 - in charts, 274–276
 - effect classes, 354–361
 - transitions, 362
- APE (ActionScript Physics Engine), 389
- API (application programming interface), 313, 316
- Apollo (AIR), 11, 15, 61
- application programming interface (API), 313, 316
- application server, accessing data through.
See remote data
- Application tag
 - default, 22–23
 - as default start for MXML file, 28, 75
 - introduction, 21
 - SystemManager, relationship to, 332
- Application.application variable, 39
- ApplicationControlBar container, 237–238
- applications (projects), Flex Builder
 - build phase, 25, 71
 - deleting, 68
 - editing settings, 67
 - Flex SDK version targeting, 68–69
 - importing and exporting, 69–71
 - organizing and editing, 65–71
 - overview, 18–19
 - running and releasing, 10, 25, 71–74
 - types, 59–65
- AreaChart, 259, 261–262
- areaCodeFormat property, 214
- AreaSeries, 260
- Array data structure
 - in charts, 255
 - as source for collections, 298–300
 - user interface controls, 158–159, 178
- ArrayCollection, 161, 298–300, 306–307
- AS file format, 31
- as operator, 44
- asynchronous data loading, 9–10, 13
- Asynchronous JavaScript and XML (AJAX), 13–14, 27
- @ (at) sign
 - EmailValidator, 206
 - XML data, 166
- @Embed syntax, 150
- @font-face, 358, 370
- attributes (properties)
 - attribute declaration, 21
 - attribute listener, 43
 - bindable, 289–290

- casting to classes, 44
 - `commitProperties` method, 334–336
 - data binding, 285–292
 - data collection, 298–303
 - defining, 342
 - definition and function, 31
 - of fields in charts, 254
 - formatter, 210
 - getters and setters, relationship to, 33–34
 - `NumberFormatter`, 211–212
 - Rotate effect, 357–358
 - styles, compared to, 364
 - `TabNavigator`, 245–246
 - `text`, 21–22, 147, 149, 210
 - `ToolTip`, 331–332
 - transition, 362
 - validator controls, 197–199
 - Zoom effect, 359
 - audio controls, 149, 151–153
 - `autoLoad` property, 150
 - automatic builds, 82
 - Average Self Time CPU performance measure, 96
 - Away 3D (Web site), 388
 - axes options in charts, 269–271
 - AXNA (Adobe XML News Aggregator) (Web site), 394
- **B** ●
- background, skin as, 376
 - `BarChart`, 256–259
 - base class, choosing, 338–340
 - base state, definition, 348
 - behavior, definition, 355
 - best practices guidelines, Adobe (Web site), 43
 - bidirectional data binding expression, 292
 - binary compression for data transfer, 320
 - Bindable metadata, 293–294
 - binding, data
 - in ActionScript, 78, 288–289
 - bidirectional expression, 292
 - bindable property, 289–290
 - `ComboBox` control, 140
 - complexity of `DataGrid` controls, 169
 - debugging expressions, 292–293
 - deferred instantiation, relationship to, 247
 - definition, 285
 - destination property, 285–288, 290–292
 - expression structure, 285–286
 - formatter controls, 209–211
 - interactive form example, 294–296
 - introduction, 285
 - List controls, 164
 - metadata, 293–294
 - multiple destinations or sources, 290–292
 - in MXML, 41, 286–289, 291
 - source property, 285–292
 - in video display example, 156
 - Blaze `DataSet` (Web site), 320
 - blogs, Flex-related (Web site), 393–394
 - `borderStyle` property, 222
 - `Box 2D`, 389
 - `Box` container, 226
 - box layout containers, 225–228
 - branch nodes in `Tree` control, 173
 - breakpoints, adding to code, 84–85
 - browsers
 - cross-browser support, 14
 - WebKit, 15
 - bubble phase of event propagation, 47
 - `BubbleChart`, 267
 - bugbase, Adobe Flex, 396
 - Build Automatically option, Flex Builder, 71–72
 - build path, 61–62, 64
 - build phase, project, 25, 71
 - Burd, Barry (author)
 - Eclipse For Dummies*, 54
 - button-based user interface controls, 130–139
 - `Button` control
 - in `Canvas` container, 225
 - event handling, 42–46
 - `measure` method, 336
 - nesting of containers, 29
 - skinning, 373–376
 - workings of, 131–133
 - `ButtonBar` control, 240, 242

• C •

- Cairngorm (Web site), 387
- calendar controls, 140–142
- CandleStickChart, 269
- Canvas container, 219, 223–224
- capture phase of event propagation, 47
- cardNumberProperty property, 203
- cardNumberSource property, 203
- cardTypeProperty property, 203
- cardTypeSource property, 203
- Cascading Style Sheets (CSS)
 - Accordion control, 244
 - external style sheet, 78, 368
 - Flex’s support for, 78
 - font styles, 370
 - graphical skins, 373–377, 379–380
 - opening, 123
 - style block, 75–77, 123–125, 365–368
 - styles introduction, 363
- caseInsensitive property, 304
- casting of properties to classes, 44
- Category properties inspector view, 119
- CategoryAxis, 269
- categoryField property, 269
- <! [CDATA[portion of Script block, 77
- centerPopUp method, 39, 330
- change event
 - ComboBox control, 139
 - MenuBar control, 177
 - overview, 50
 - RadioButtonGroup control, 134–135
 - slider control, 145
- charting components
 - animation, 274–276
 - AreaChart, 259, 261–262
 - axes, 269–271
 - BarChart, 256–259
 - BubbleChart, 267
 - CandleStickChart, 269
 - ColumnChart, 256–259
 - data rendering, 253–256
 - example listing, 276–281
 - HLOCChart, 269
 - interactivity, 273–274
 - introduction, 253
 - legends, 272
 - LineChart, 259–261
 - PieChart, 262–266
 - PlotChart, 267
- ChartItemEvent, 273
- CheckBox control, 133, 228–229
- child components
 - Accordion container, 241–242
 - adding, 220–221, 340–341
 - child nodes in Tree control, 173
 - control bars in Panel containers, 237
 - deferred instantiation of, 246
 - navigator controls, 239–240, 243
 - Panel container, 231–232
 - positioning, 223–225
 - removing from containers, 220–221
 - sizing within container, 222–223, 227–228
 - tiling of container, 229
- circular loop from complex data binding
 - expressions, 292
- Class column in Live Objects panel, 91
- classes
 - Alert, 236
 - choosing base for component, 338–340
 - collection-related, 160–163, 298
 - container-related, 220, 226
 - controls-related, 158
 - effect, 354–361
 - HTTPService, 309–316
 - inheritance concept, 36–37, 130–131, 158, 220
 - mx.core.UIComponent, 130–131, 196, 333, 339
 - naming, 97–99
 - overview and definition, 31–35
 - packages, relationship to, 35–36, 100
 - PopUpManager, 39
 - sound-related, 151–153
 - Transition, 362
 - WeatherForecast, 317–320
- Clean dialog box, 72
- cleaning projects, 72
- clearing validation errors, 197
- click event
 - Button control, 131–132
 - CheckBox control, 133
 - LinkButton control, 135
 - overview, 42–46
 - RadioButton control, 133

- clickable user interface controls. *See also*
 - Button control
 - button-based, 130–139
 - ColorPicker, 140
 - ComboBox, 139–140
 - date-based, 140–143
 - introduction, 130
 - scrolling, 143–144
 - slider controls, 144–145
- Close button for TitleWindow container, 233
- closing tag, 21
- clustering in charts, 257
- code blocks in MXML file structure, 75–78
- code hinting, 22, 79–81
- collection classes, 160–163, 298
- collections, data
 - accessing data items in, 306–307
 - ArrayCollection, 161, 298–300, 306–307
 - filtering, 305–306
 - introduction, 297–298
 - methods, 302, 305–307
 - properties, 298–303
 - sorting, 303–304
 - XMLListCollection, 300–302
- color style, 193
- ColorPicker control, 140
- ColumnChart, 256–259
- ComboBox control, 130, 139–140
- compile-time type checking feature, 40
- compiling (running) projects, 10, 25, 72–73
- component life cycle architecture
 - commitProperties method, 334–336
 - introduction, 333–334
 - measure method, 336–337
 - updateDisplayList method, 337
- Components view, Design mode,
 - 103, 113–115
- conferences, Flex, 394–395
- constraint-based layout, 110, 121, 224–225
- Constraints control, 121
- constructor, definition, 32
- containers
 - Alert control, 235–236
 - box type, 225–228
 - Canvas, 219, 223–224
 - constraint-based layout, 224–225
 - control bar types, 236–238
 - definition, 219
 - form layout
 - default action, 195
 - e-commerce example, 215–217
 - FormHeading element, 192–193
 - FormItem element, 193–194
 - introduction, 189
 - MXML hierarchy of elements, 191–192
 - overview, 190–191
 - Grid, 229–231
 - introduction, 29–30
 - layout, 108–110
 - multipart form example, 248–251
 - nesting of, 29, 105–106
 - overview, 219–223
 - Panel, 231–233, 235–237, 376
 - Tile, 228–229
 - TitleWindow, 233–235, 328
- Containers components folder, 114
- content assistance (code hinting),
 - 22, 79–81
- control bar types, 236–238
- ControlBar container, 237
- controls, user interface. *See also* data-aware user interface controls
 - clickable category. *See* clickable user interface controls
 - focus management, 326
 - formatter controls, 189, 209–214
 - inheritance hierarchy, 130–131
 - introduction, 129
 - media display, 149–156
 - MVC framework, 386
 - navigation bar, 240–241
 - overview, 21–22
 - text-related, 140, 145–149, 166–168, 170–171
- Controls components folder, 114
- CPU performance, profiling in Flex Builder,
 - 95–97
- createMyMenu method, 176
- createPopUp method, 137–138, 328
- createToolTip method, 330–331
- creationComplete event, 50, 138, 310
- creationPolicy property, 247–248
- CreditCardValidator, 202–203
- cross-browser runtime. *See* Flash Player
- cross-browser support capabilities, 14
- cross-domain policy file, definition,
 - 315–316
- CSS (Cascading Style Sheets)

- Accordion control, 244
 - external style sheet, 78, 368
 - Flex's support for, 78
 - font styles, 370
 - graphical skins, 373–377, 379–380
 - opening, 123
 - style block, 75–77, 123–125, 365–368
 - styles introduction, 363
- CSS Design mode, 123–125, 373–377, 379–380
- CSS Script blocks (style blocks), 75–78, 123–125, 365–366
- Cumulative Instances column in Live Objects panel, 91–92
- Cumulative Memory column in Live Objects panel, 91
- { } (curly braces) in MXML data binding expression, 286–287, 291
- CurrencyFormatter, 212
- currencySymbol property, 205, 212
- CurrencyValidator, 204
- currentState property, 348, 352, 354
- currentTarget property, 44
- custom code libraries, 59, 65
- custom component, creating, 337–346
- Custom components folder, 114

• D •

- data, remote access
 - AMF binary transfer, 320
 - HTTP connection, 309–316
 - introduction, 309
 - Web services connection, 316–320
- data-aware user interface controls
 - Array, 158–159, 178
 - charts as, 254–256
 - creating data objects, 160–162
 - DataGrid controls, 168–172, 183–187, 311
 - dataProvider property's role, 158, 162–163
 - display customization, 183–185
 - drag-and-drop functionality, 181–182, 324
 - example use of, 185–187
 - hierarchical controls, 173–179

- introduction, 157
- List controls
 - data collections, use of, 297
 - dataProvider property, 162–163
 - drag-and-drop functionality, 181–182, 324
 - editable, 179
 - introduction, 163
 - item renderers, 183–187
 - row height controls, 182–183
 - scrolling behavior, 164–166, 180
 - selection methods, 177–179
 - text display, 166–168
- row height adjustment variables, 182–183
- scrolling behavior, 180
- XML, 159–160, 166–168
- XMLList, 160
- data binding
 - in ActionScript, 78, 288–289
 - bidirectional expression, 292
 - bindable property, 289–290
 - ComboBox control, 140
 - complexity of DataGrid controls, 169
 - debugging expressions, 292–293
 - deferred instantiation, relationship to, 247
 - definition, 285
 - destination property, 285–292
 - expression structure, 285–286
 - formatter controls, 209–211
 - interactive form example, 294–296
 - introduction, 285
 - List controls, 164
 - metadata, 293–294
 - multiple destinations or sources, 290–292
 - in MXML, 41, 286–289, 291
 - source property, 285–292
 - in video display example, 156
- data collections
 - accessing data items in, 306–307
 - ArrayCollection, 161, 298–300, 306–307
 - filtering, 305–306
 - introduction, 297–298
 - methods, 302, 305–307
 - properties, 298–299, 301–303
 - sorting, 303–304
 - XMLListCollection, 300–302

- data diagrams, 385
- data source in data collections, 298, 306
- databases
 - accessing remote, 309
 - AIR access to, 15
 - fetching data from, 162
- dataField property, 170–171, 183–184
- DataGrid controls, 168–172, 183–187, 311
- DataGridColumn control, 170
- dataProvider property
 - in charts, 254–256, 272
 - in data binding, 289–290
 - DataGrid controls, 169
 - in hierarchical data controls, 173
 - List controls, 162–163
 - in navigation bars, 242
 - pop-up controls, 137, 139–140
 - user interface control role, 158
- date-based user interface controls, 140–143
- DateFormatter, 213–214
- DateTimeAxis, 270–271
- DateValidator, 205
- dayProperty property, 205
- daySource property, 205
- debugging
 - breakpoints, adding, 84–85
 - bugbase from Adobe Flex, 396
 - data binding expressions, 292–293
 - event, 48–49
 - Flex Builder process, 84–87
 - Flex-Spy, 387–388
 - Problems view, 71–72, 293
 - variable inspection, 86–87
- debugging control bar, 85–86
- Debugging perspective, 56–57, 84–85
- decimalSeparator property, 205
- Declarative Graphics Framework (Degrafa)
 - (Web site), 386
- default action, form layouts, 195
- default code, deciphering, 21
- defaultButton property, 195
- defaultLeafIcon style, 173
- deferred instantiation, 246–248
- Degrafa (Declarative Graphics Framework)
 - (Web site), 386
- descending property, 304
- Design mode, Flex Builder
 - aligning controls, 110–112
 - in application introduction, 23–24
 - Components view, 103, 113–115
 - coordination with Source mode, 24
 - CSS Design mode, 123–125
 - deleting components, 108
 - inserting components, 113–115
 - introduction, 101–103
 - navigating in, 104–106
 - positioning controls, 108–110
 - properties inspector, 118–122
 - selecting controls, 106–108
 - sizing/resizing controls, 104, 112–115
 - snapping controls, 110
 - States view, 103, 116–118
 - tracking application changes in, 122
 - viewing application contents, 115–116, 349
- Design stage area, 102, 107–110, 113
- Design toolbar, 102, 104
- desktop application, Flex as, 11, 15, 61
- destination property in data binding, 285–288, 290–292
- destroyToolTip method, 330–331
- Development perspective, 56, 349
- development tool. *See* Flex Builder
- dimensions, form container settings, 191–192
- direction property, 165, 226, 228, 272
- dirty flags, 334
- disabledDays property, 141
- disabledRanges property, 141
- dispatchEvent function, 342
- dispatching of events, definition, 42
- display controls
 - customizing, 183–185
 - date-related, 141
 - media, 149–156
 - scrolling, 164–168
 - text, 145–149
- displayedMonth property, 141
- displayedYear property, 141
- displayName property, 272
- distortion of skins, 377–379
- divided box containers, 227–228

dock property, 237–238
 domain property, 208
 donut-shaped pie charts, 264–265
 drag-and-drop functionality, 181–182, 324–325
 drag proxy, 181, 324–325
 dragComplete event, 325
 dragDrop event, 325
 dragEnabled property, 181
 dragEnter event, 325
 DragManager, 324–325
 dragMoveEnabled property, 181
 dragStart event, 325
 Dreamweaver, Adobe, 10
 drop-in item renderer, 183
 dropEnabled property, 181
 dynamically resizable layout, 227

● E ●

Eclipse For Dummies (Burd), 54
 Eclipse IDE, 53–55
 ECMA International, 13–14
 ECMAScript, 13–14
 editable property, 179
 effect classes, 354–361
 EmailValidator, 206
 embedded SQLite database, AIR, 15
 embedding fonts, 370–371
 employment for Flex coders, 396
 Enable Memory Profiling check box, 89
 enabled property, 334–335
 encapsulation of objects, definition, 31
 error alerts, Flex Builder, 71
 error handling
 formatter controls, 211–214
 validation process, 196–198, 202, 207
 error property, 211
 errorColor style, 196
 errorString property, 197
 Event class, 44–45
 event listeners
 adding, 43–47
 in Button controls, 131, 139
 definition, 42–43
 in propagation process, 47–48
 validator controls, 199, 201–202

event mode, 154
 event parameter, 44
 eventPhase property, 48
 events. *See also individual events*
 in component creation, 342–343
 debugging, 48–49
 definition, 42
 drag, 325
 Menu controls, 176
 overview, 42–50
 propagation of, 47–48
 triggers, compared to, 355
 validation, 200–202
 exploded wedges in pie charts, 265
 explodeRadius property, 265
 Export Release Build Wizard, 73–74
 Export Wizard, 70–71
 exporting Flex Builder projects, 69–71
 expression property, 207
 extending classes, 36–37, 130–131, 158, 220
 external style sheet, 78, 368. *See also* CSS (Cascading Style Sheets)

● F ●

faceless property of controls in Flex, 134
 field properties in charts, 254
 field property, charts, 263
 fields property, Sort object, 303
 FIG (Flex Interface Guidelines) (Web site), 393
 filter method, 305
 filterFunction property, 302, 305
 filtering data collections, 302, 305–306
 firing of data binding expression,
 definition, 286
 flags property, 207
 Flash, Adobe
 Flex, relationship to, 1, 10, 12–13
 historical development, 11
 loading of external XML data, 10
 programmatic skinning, 364
 XML objects, 159
 Flash Authoring Tool, 13
 Flash Player
 advantages of, 14
 HTML support, 149

- lack of 3D support, 388
- overview, 11
- remote data access restrictions, 315–316
- Silverlight, compared to, 14–15
- Flash security sandbox, 315
- Flash Video (FLV), 151
- Flex, Adobe
 - advantages of, 9
 - AJAX, relationship to, 13–14
 - application-building process, 17–25
 - benefits of, 14
 - components of, 10–11
 - CSS support, 78
 - data binding. *See* data binding
 - data collections. *See* data collections
 - definition, 10–11
 - development tool. *See* Flex Builder
 - Flash, relationship to, 1, 10, 12–13
 - framework for. *See* framework, Flex
 - history, 10–11
 - introduction, 1–5
 - manager tools, 323–332
 - new developments, 12
 - open-source materials, 10–11, 383–389, 396
 - remote data. *See* remote data
 - resources, 391–396
 - as RIA, 9–10
 - Silverlight, relationship to, 14–15
 - version differences, 55
 - Web site, 54
- Flex Builder
 - application-building process, 17–25
 - Design mode. *See* Design mode, Flex Builder
 - Eclipse, relationship to, 54
 - features, 53–54
 - Flash Authoring Tool, compared to, 13
 - in Flex development history, 10
 - help resources, 74
 - importing and exporting projects, 69–71
 - installing, 54–55
 - opening, 18
 - organizing and editing projects, 65–68
 - overview, 11, 53–54
 - perspectives overview, 56–59
 - project types, 59–65
 - running and releasing projects, 71–74
 - Source mode. *See* Source mode, Flex Builder
 - targeting versions of Flex SDK, 68–69
 - Web site, 18
- Flex Builder Plug-In, 55
- Flex Builder Professional, 55, 87, 171, 253
- Flex Builder Stand-Alone, 55
- Flex Builder Standard, 55
- Flex Cookbook, 392
- Flex Developer Center (Web site), 392
- Flex Interface Guidelines (FIG) (Web site), 393
- Flex Library Project type, 59, 65
- Flex Profiling feature
 - CPU performance, 95–97
 - Garbage Collector, 87–88
 - launching session, 88–89
 - memory use, 88–95
 - Web site, 87
- Flex Project type, 59–62. *See also* projects, Flex Builder
- Flex SDK, 10, 68–69, 81. *See also* framework, Flex
- Flex-Spy (Web site), 387
- Flex Start Page option, 74
- Flex User Groups (UGs) (Web site), 392–393
- flexcoders Yahoo! group (Web site), 391–392
- flexjobs Yahoo! group (Web site), 396
- FlexLib (Web site), 383–384
- Flex.org Web site, 395
- FlexUnit (Web site), 386
- FLV (Flash Video), 151
- focus-aware controls, 325–327
- focusIn event, 327
- FocusManager, 325–327
- focusOut event, 327
- folder structure
 - component, 114–115
 - creating new folder, 65–66
 - for new projects, 61
 - package structure, 36
 - project organization, 65
 - styles, 173
- folderClosedIcon style, 173

- folderOpenIcon style, 173
 - font-family style, 370
 - font-style style, 371
 - font-weight style, 371
 - fonts, 146, 193, 370–371
 - fontSize style, 146, 193
 - fontStyle style, 146
 - fontWeight style, 146, 193
 - form style, 260
 - format method, 210–211
 - formatString property, 210, 213–214
 - formatter controls, 189, 209–214
 - FormHeading element, 192–193
 - FormItem element, 193–194
 - forms
 - form layout containers
 - default action, 195
 - e-commerce example, 215–217
 - FormHeading element, 192–193
 - FormItem element, 193–194
 - introduction, 189
 - MXML hierarchy of elements, 191–192
 - overview, 190–191
 - interactive data binding example, 294–296
 - multipart form example, 248–251
 - Tab key navigation through, 326
 - framework, Flex
 - charts. *See* charting components
 - containers. *See* containers
 - DragManager, 324–325
 - event model overview, 42–50
 - Flex, compared to, 13
 - FocusManager, 325–327
 - formatter controls, 189, 209–214
 - forms. *See* forms
 - navigator controls. *See* navigator controls
 - overview, 11
 - PopUpManager, 327–330
 - SystemManager, 332
 - ToolTipManager, 330–332
 - user interface controls. *See* user interface controls
 - validator controls. *See* validator controls
 - functions (methods). *See also* event listeners
 - Button controls, 136
 - chart item selection, 273
 - component life cycle, 333–337
 - container-related, 221
 - CPU performance, effect on, 96–97
 - data collection, 302, 305–307
 - definition and function, 31
 - event-related, 48–49, 342
 - formatter controls, 210–211
 - interface, relationship to, 37–38
 - List item selection, 177–179
 - media player, 151–152, 354
 - Menu controls, 176
 - pop-up, 39, 137–138, 328–330
 - renaming, 99–100
 - static, 38–40, 235
 - style, 368–369
 - ToolTip, 330–331
 - triggering, 200–201, 354–357, 359
 - FutureSplash Animator, 11
 - FutureWave Software, 11
- **G** ●
- Garbage Collector, 87–88, 92–93
 - Generate Object Allocation Stack Traces
 - option, 89–90, 94
 - getItemIndex method, 307
 - getStyle function, 368–369
 - getters, 33–34, 38
 - graphic images, 149–151, 183–184, 373
 - graphical skins, 364, 372–380
 - Grid container, 229–231
 - GridItem container, 229–231
 - GridRow container, 229–231
 - grouping property, 171
 - GroupingCollection, 171
 - groupName property, 134
 - groups, radio button control, 134
 - Gumbo (Flex 4) development, 12
- **H** ●
- handleChange event handler, 176
 - handler, definition, 43. *See also* event listeners
 - HBox container, 29, 225–226
 - HDividedBox container, 227–228
 - headerColors property, 233
 - headerHeight property, 233

headerHeight style, 244
 headerStyleName style, 244
 headerText property, 170–171
 height property, 192
 help resources, 74
 hide event, 49
 hideDataEffect property, 274–276
 hierarchical data

- form elements in MXML, 191–192
- user interface controls, 130–131, 171, 173–179
- XML objects, 159

 HitData objects, 273
 hitData property, 273
 hitSet property, 273
 HLOCChart, 269
 horizontalGap property, 226–227
 horizontalScrollPolicy property, 180, 192
 HSlider control, 225
 HTML (HyperText Markup Language)

- CSS in compared to Flex, 78
- Flash Player-supported, 149
- Flex, relationship to, 2
- MXML, compared to, 29
- transition to RIA, 11

 htmlText property, 148–149
 HTTP connection for remote data access, 309–316
 HTTPService class, 309–316

• **I** •

icon style, 131–132
 id property, 195, 210
 IDE (Integrated Development Environment), 10. *See also* Flex Builder
 Image control, 149–151, 183–184
 image formats for skins, 373
 import statements in Flex Builder, 82–84
 Import Wizard, 69–70
 importing

- Flex Builder projects, 69–70
- WSDL, 316–320

 in-line data binding expression, 287

in-line item renderer, 184–187
 inheritance from classes, 36–37, 130–131, 158, 220
 initialize event, 50
 innerRadius property, 264–265
 installation, Flex Builder, 54–55
 Instances column in Live Objects panel, 91
 Integrated Development Environment (IDE), 10. *See also* Flex Builder
 interactive charts, 273–274
 interactive imagery, working with, 150
 interface, 34, 37–38. *See also* user interface controls
 invalid event, 201
 invalidateProperties method, 335
 invalidateSize method, 336
 invalidation pattern, 333–337
 invalidNumberError property, 202
 item rendering, 183–187
 itemClick event listener, 139
 itemEditBegin event, 179
 itemEditEnd event, 179
 itemRenderer property, 183
 IUIComponent interface, 136

• **J** •

J2EE server, 61
 Java, Sun Microsystems, refactoring support for, 100
 JavaFX, Sun Microsystems, 12
 JavaScript, Sun Microsystems, compared to ActionScript, 13–14, 27, 30, 40
 JIRA technology, 396
 jobs for Flex coders, 396

• **K** •

keyboard shortcuts

- code hinting, 80
- multiple item selection, 182
- source code access, 81
- undoing application changes, 122
- zooming in Design mode, 105

• L •

Label control, 21–23, 145–146, 334–336
 label property, 131–132
 labelField property, 166–167, 173, 263
 labelFunction property, 167–168, 173
 labelPlacement property, 131–132
 labelPosition property, 264
 labels
 chart, 272
 form, 193
 languages, 10. *See also* ActionScript; MXML
 lastResult property, 312
 layout
 absolute compared to relative, 108–110
 basic container, 108–110
 box containers, 225–228
 constraint-based, 110, 121, 224–225
 form layout containers
 default action, 195
 e-commerce example, 215–217
 FormHeading element, 192–193
 FormItem element, 193–194
 introduction, 189
 MXML hierarchy of elements, 191–192
 overview, 190–191
 layout property, 108, 110
 leaf node
 in Tree control, 173
 in XML objects, 159
 Legend control, 272
 length property, 302
 LinearAxis, 270
 LineChart, 259–261
 LineSeries, 260
 LinkBar control, 136, 240
 LinkButton control, 135–136
 Linux compatibility, 55
 List controls
 data collections, use of, 297
 dataProvider property, 162–163
 drag-and-drop functionality, 181–182, 324
 editable, 179
 introduction, 163
 item renderers, 183–187

 row height controls, 182–183
 scrolling behavior, 164–166, 180
 selection methods, 177–179
 text display, 166–168
 listener property, 199
 Live Memory chart, 94–95
 Live Objects list, 90–91
 LiveCycle Data Services, 61
 liveDragging property, 145, 227
 load method, 151
 local file-system access, AIR, 15
 LogAxis, 270
 loitering objects, finding, 92–93
 Luhn mod10 algorithm, 203

• M •

Macintosh compatibility, 54
 Magnification drop-down list, 105
 main.mxml file, 20–21
 manual builds, 82
 manual mode, 154
 masking effects, definition, 359–360
 Math class, 39
 MAX conference (Web site), 395
 maximum property, 144
 maxLength property, 208
 maxScrollPosition property, 143
 McCune, Doug (blog for), 394
 media display user interface controls, 149–156
 memory
 Garbage Collector, relationship to, 87–88
 snapshots, taking, 92–93
 tracking down leaks, 88–89, 93
 usage profiling in Flex Builder, 88–95
 Memory column in Live Objects panel, 91
 Memory Usage chart, 90
 Menu control, 174–176
 MenuBar control, 174, 177
 MenuEvent class, 176
 menus
 PopUpMenuButton control, 138–139
 project editing, 67
 Rename, 98–100
 metadata, bindable, 293–294

- Method Statistic panel, 96–97
- methods (functions). *See also* event listeners
 - Button controls, 136
 - chart item selection, 273
 - component life cycle, 333–337
 - container-related, 221
 - CPU performance, effect on, 96–97
 - data collection, 302, 305–307
 - definition and function, 31
 - event-related, 48–49, 342
 - formatter controls, 210–211
 - interface, relationship to, 37–38
 - List item selection, 177–179
 - media player, 151–152, 354
 - Menu controls, 176
 - pop-up, 39, 137–138, 328–330
 - renaming, 99–100
 - static, 38–40, 235
 - style, 368–369
 - ToolTip, 330–331
 - triggering, 200–201, 354–357, 359
- micro-architecture framework, 387
- minimum property, 144
- minlength property, 208
- modal pop-up, 327
- mode property, 154
- Model tag, 256
- Model View Controller (MVC) framework, 386–387
- monthProperty property, 205
- monthSource property, 205
- mouse handlers, 273
- MouseEvent class, 46
- MouseEvent.CLICK variable, 46
- MouseEvents, 273
- Move effect, 355–357
- move event, 49
- moveEffect trigger, 356
- MPEG-4 videos, 151
- multimedia capabilities of Flex, 14
- multiple components, selecting in Design mode, 107
- MVC (Model View Controller) framework, 386–387
- mx package, 35
 - <mx:AdvancedDataGrid /> tag, 171
 - <mx:Application> tag
 - default, 22–23
 - as default start for MXML file, 28, 75
 - introduction, 21
 - SystemManager, relationship to, 332
 - <mx:ArrayCollection /> tag, 298
 - <mx:Binding /> tag, 286–288, 291–292
 - <mx:Button> tag, 131
 - <mx:CheckBox> tag, 133
 - mx.collections class, 298
 - <mx:ColorPicker /> tag, 140
 - <mx:ComboBox /> tag, 138–139
 - <mx:Component /> tag, 184
 - mx.containers.Box class, 226
 - mx.controls.DataGrid control, 169
 - mx.controls.HorizontalList control, 164–165
 - mx.controls.Image control, 183–184
 - mx.controls.List control, 164
 - mx.controls.listClasses.ListBase class, 158
 - mx.controls.TileList control, 164–166
 - mx.core.Container class, 220
 - mx.core.IUIComponent interface, 136
 - mx.core.IUIComponent class, 130–131, 196, 333, 339
 - <mx>DataGrid /> tag, 169
 - <mx>DataGridColumn /> tag, 169
 - <mx:DateChooser> tag, 140–142
 - <mx:Form /> tag, 191
 - <mx:FormHeading /> tag, 192–193
 - <mx:FormItem /> tag, 193–194
 - <mx:HBox /> tag, 29
 - <mx:HScrollBar> tag, 143–144
 - <mx:HSlider> tag, 144–145
 - <mx:Image> tag, 150
 - <mx:Label /> tag, 21–22, 146
 - <mx:Legend /> tag, 272
 - <mx:LinkButton> tag, 135
 - <mx>List /> tag, 164
 - <mx:MenuBar /> tag, 177
 - <mx:Metadata> tag, 177

MXML

- ActionScript, relationship to, 40–42, 75–78
- Array data structure, 158–159
- ArrayCollection, 161, 298–299
- code hinting, 80
- component creation decisions, 341
- container elements, 220–221
- data binding, 41, 286–289, 291
- event listeners, adding, 43–45
- file anatomy, 75–79
- Flex, compared to, 13
- form element hierarchy, 191–192
- form layout with, 190–191
- formatter tags, 209
- introduction, 27–30
- new project defaults, 62
- overview, 10
- renaming classes, 99
- source code access through tags, 81
- styles in, 364–367
- triggering methods, 354–357
- view states, 349, 352
- XML objects, 159
- XMLList objects, 160
- XMLListCollection in, 161, 300–301
- `<mx:Model />` tag, 256
- `<mx:Move />` effect, 355–357
- `<mx:Parallel />` tag, 361
- `<mx:PopUpButton>` tag, 136–137
- `<mx:PopUpMenuButton>` tag, 138–139
- `<mx:ProgressBar>` tag, 153
- `<mx:RadioButton>` tag, 133–134
- `<mx:RadioGroup>` tag, 134–135
- `<mx:RichTextEditor>` tag, 148
- `<mx:Rotate />` effect, 357–358
- `<mx:Script>` block, 77–78
- `<mx:Sequence />` tag, 360–361
- `<mx:series>` tag, 255
- `<mx:Style />` tag, 78, 358, 368
- `<mx:Style>` block, 365–368
- `<mx:SWFLoader>` tag, 150
- `<mx:Text>` tag, 146
- `<mx:TextArea>` tag, 148
- `<mx:TextInput>` tag, 147
- `<mx:Transition />` tag, 362
- `<mx:transitions>` block, 362
- `<mx:Tree />` tag, 173
- `<mx:VideoDisplay>` tag, 151

- `<mx:VScrollBar>` tag, 143, 144
- `<mx:VSlider>` tag, 144–145
- `<mx:WebService />` tag, 316–317
- `<mx:XMLList />` tag, 301

• N •

naming

- classes, 97–99
- effect triggers, 355
- root MXML file, 62
- styles, 244, 366–367
- view states, 348
- `navigateToURL` method, 136
- navigation bar controls, 240–242
- navigator controls
 - Accordion, 242–245
 - deferred instantiation, 246–248
 - definition, 219
 - multipart form example, 248–251
 - navigation bar controls, 240–242
 - TabNavigator, 245–246
 - ViewStack, 239–242
- Navigator view, Flex Builder, 20, 62, 66–67, 102
- Navigators components folder, 115
- nesting of containers, 29, 105–106
- New ActionScript Project Wizard, 63–65
- New Flex Project Wizard, 60–62
- New Project Wizard, 19
- New State button, 117
- New Style dialog box, 123
- `noMatchError` property, 207
- non-modal pop-up, 327
- notifications to users (Alert control), 235–236
- NumberFormatter, 211–212
- NumberValidator, 204
- numeric property, 304

• O •

- Object References panel, 93–94
- objects. *See also* properties; *individual objects*
 - creating data objects, 160–162
 - Live Objects panel, 91–92
 - loitering, 92–93
 - overview, 31–33

- OOOP (object-oriented programming), 31–35
 - open-source Adobe Web site, 394
 - open-source material, Flex, 10–11, 383–389, 396
 - OpenFlux (Web site), 386
 - operating systems, AIR-supported, 15
 - Outline view, Design mode, 103, 115–116

- *p* ●
- Package column in Live Objects panel, 91
 - packages, 35–36, 100, 339
 - Pan & Zoom in Design mode, 104–105
 - Panel container, 231–233, 235–236, 376
 - Panel tag, 29
 - PaperVision 3D (Web site), 388–389
 - Parallel tag, 361
 - parameters property, 312–313
 - parent/child relationship of controls in design, 108. *See also* child components
 - parent nodes in Tree control, 173
 - parseFunction property, 271
 - Pause effect, 361
 - PDF (Portable Document File) format in WebKit browser, 15
 - percentage-based stacked column chart, 259
 - Performance Profile panel, 95–96
 - perspectives, Flex Builder, 56–59, 84–85, 90
 - perWedgeExplodeRadius property, 265–266
 - PhoneFormatter, 214
 - PhoneNumberValidator, 206
 - PieChart, 254–255, 262–266, 272
 - PieSeries, 254, 262–263
 - play method, 151–152, 354
 - PlotChart, 267
 - PlotSeries, 267
 - polled mode, 154
 - pop-ups
 - ColorPicker control, 140
 - ComboBox control, 130, 139–140
 - methods, 39, 137–138, 328–330
 - modal compared to non-modal, 327
 - TitleWindow, 234–235
 - popUp property, 136–138
 - popUp variable, 329–330
 - PopUpButton control, 136–138
 - PopUpManager, 327–330
 - PopUpManager class, 39
 - PopUpMenuButton control, 138–139
 - positioning
 - controls in Design Mode, 108–110
 - items in containers, 223–225
 - labels, 264
 - Problems view, Flex Builder, 71–72, 293
 - Profiling perspective, 56–57, 90
 - profiling projects
 - CPU performance, 95–97
 - Garbage Collector, 87–88
 - launching session, 88–89
 - memory use, 88–95
 - Web site, 87
 - programmatically skins, 364
 - programmatic validation, 201
 - programming concepts, 27
 - ProgressBar control, 153–154
 - projects, Flex Builder
 - build phase, 25, 71
 - deleting, 68
 - editing settings, 67
 - Flex SDK version targeting, 68–69
 - importing and exporting, 69–71
 - organizing and editing, 65–71
 - overview, 18–19
 - running and releasing, 10, 25, 71–74
 - types, 59–65
 - PromptingTextInput control, 384
 - propagation, event, 47–49
 - properties. *See also individual properties*
 - attribute declaration, 21
 - attribute listener, 43
 - bindable, 289–290
 - casting to classes, 44
 - commitProperties method, 334–336
 - data binding, 285–292
 - data collection, 298–299, 301–303
 - defining, 342
 - definition and function, 31
 - of fields in charts, 254
 - formatter, 210
 - getters and setters, relationship to, 33–34
 - NumberFormatter, 211–212
 - Rotate effect, 357–358
 - styles, compared to, 364
 - TabNavigator, 245–246
 - text, 21–22, 147, 149, 210
 - ToolTip, 331–332
 - transition, 362

properties (*continued*)
 validator controls, 197–199
 Zoom effect, 359

properties inspector
 configuring controls with, 118–122
 Flex-Spy, 387–388
 overview, 103
 positioning options for items in, 109–110
 resizing controls with, 113
 viewing options, 118–120

property property, 198

• R •

RadioButton control, 133–134
 RadioButtonGroup control, 134–135
 radiusField property, 267
 rangeEnd property, 141
 rangeStart property, 141
 refactoring of code, 97–100
 references, inspecting object, 93–94
 RegExpValidator, 207
 relative compared to absolute layout
 containers, 108–110
 release version of project, setting up, 73–74
 remote data, accessing
 AMF binary transfer, 320
 HTTP connection, 309–316
 introduction, 309
 Web services connection, 316–320
 removeAll method, 307
 removeChild method, 221
 removeEventListener method, 47
 removeItemAt method, 307
 removePopUp method, 39, 329–330
 Rename menu, 98–100
 Rename Textual Matches in Strings check
 box, 98
 Report a Bug feature, 74
 required property, 194, 198
 requiredFieldError property, 198
 resize event, 49
 resizing/sizing
 Canvas container, 225
 child container elements, 222–223,
 227–228
 controls in Design mode, 104, 112–113,
 114–115

Grid container elements, 230–231
 perspective views, 58
 result event, 312
 resultFormat property, 310–311
 reverse domain name syntax, 35
 revision control software, definition, 69
 Rich Internet Applications (RIAs), 1, 9–11
 RichTextEditor control, 148
 ROLL_OVER event, 46
 rolloverColor style, 135
 root application, 20, 62
 root node
 Tree control, 174
 XML objects, 159
 Rotate effect, 357–358
 rotation property, text, 370
 row height adjustment variables, 182–183
 RPC libraries, 61
 Run icon, 72
 running (compiling) projects, 10, 25, 72–73

• S •

Sandy 3D (Web site), 388
 Scalable Vector Graphics (SVG) file
 format, 150
 scale-nine grid, definition, 377–379
 scaleContent property, 150
 Scheduling framework (Web site), 384–385
 Script blocks in MXML file structure,
 75–78
 scroll event, 143
 scroll thumb, 143
 scrolling behavior, 143–144, 164–168,
 180, 192
 Search feature, Flex Builder, 74
 security restrictions on remote data
 access, 315–316
 selectable property, 146
 selected property, 132–134
 selectedChild property, 239–240, 243
 selectedDate property, 142–143
 selectedIndex property, 139–140, 178,
 239–240, 243
 selectedIndices property, 178
 selectedItem property, 139, 178
 selectedItems property, 178
 selectedRanges property, 142–143

- selecting objects
 - chart items, 273
 - controls in Design mode, 106–108
 - List controls, 177–179
 - style types, 123–124
- selectionColor property, 140
- Self Time CPU performance measure, 96
- Sequence tag, 360–361
- series, data, in charting, 254
- series property, 255
- seriesFilters property, 261
- SeriesInterpolate animation effect, 274, 276
- SeriesSlide animation effect, 274–276
- SeriesZoom animation effect, 274–276
- server-side languages, 11
- setItemAt method, 307
- setStyle function, 368–369
- setters, 33–34, 38
- show event, 49
- show method, 235
- Show Surrounding Containers button, 106
- showDataEffect property, 274–276
- showRoot property, 174
- showTextField property, 140
- Silverlight, Microsoft, 14–15
- Simple Object Access Protocol (SOAP), 316
- sizing/resizing
 - Canvas container, 225
 - child container elements, 222–223, 227–228
 - controls in Design mode, 104, 112–115
 - Grid container elements, 230–231
 - perspective views, 58
- skins, graphical, 364, 372–380
- sliding
 - SeriesSlide animation effect, 274–276
 - user interface controls, 144–145
- snapping controls in Design mode, 110
- snapshots
 - CPU performance, 95–96
 - memory, 92–93
- SOAP (Simple Object Access Protocol), 316
- SocialSecurityValidator, 207–208
- sort object, 303
- sort property, 302–303
- SortField object, 303–304
- sorting data collections, 302–304
- Sound class, 151
- sound controls, 149, 151–153
- SoundChannel class, 152
- SoundTransform class, 153
- soundTransform property, 153
- source code, accessing, 74, 81
- source control repository, definition, 69
- Source mode, Flex Builder
 - in application introduction, 20–23
 - automatic builds, 82
 - code hinting, 22, 79–81
 - coordination with Design mode, 24
 - debugging, 84–87
 - import statements, 82–84
 - introduction, 20, 101
 - MXML file anatomy, 75–79
 - profiling projects, 87–97
 - refactoring of code, 97–100
 - source code, accessing, 81
- source property, 198, 298–299, 301
- source property in data binding, 285–292
- SQLite database, AIR, 15
- stacked setting for chart, 258–259, 261–262
- stacking in charts, 257–259, 261–262
- Standard properties inspector view, 119
- stateful client, definition, 10
- states
 - creating new, 116–117
 - deleting, 118
 - editing, 118
 - view, 347–354, 362
- States panel, 349
- States view, 103, 116–118
- static methods and variables, 38–40, 235
- status property, 232
- Step Into button, 86
- Step Over button, 86
- Step Return button, 86
- stopImmediatePropagation function, 49
- stopPropagation function, 49
- strict-typing property of ActionScript 3, 40
- StringValidator, 208
- style blocks (CSS Script), 75–78, 123–125, 365–368
- styleName property, 369

styles

- with ActionScript, 79, 368–369
- container, 221–222, 224–225
- CSS
 - Accordion control, 244
 - external style sheet, 78, 368
 - Flex’s support for, 78
 - font styles, 370
 - graphical skins, 373–377, 379–380
 - opening, 123
 - style block, 75–77, 123–125, 365–368
 - styles introduction, 363
- folder structure, 173
- font, 146, 193, 370–371
- form, 193, 260
- icon, 131–132
- introduction, 363–364
- limitations of, 372
- line and area charts, 260
- LinkButton control, 135
- with MXML, 364–367
- naming, 244, 366–367
- properties, compared to, 364
- selector types, 123–124
- TabNavigator, 245–246
- text, 131, 135, 146
- title bar in Panel container, 232
- Subramaniam, Deepa (blog for), 394
- summary rows in DataGrid controls, 171
- SuperTabNavigator, 384
- SVG (Scalable Vector Graphics) file
 - format, 150
- SWF file format, 82, 150
- SWFLoader component, 150–151
- SystemManager, 332
- System.setClipboard function, 39

• T •

- Tab key navigation through forms, 326
- tab loop, management of, 326
- TabBar control, 240, 245
- tabIndex property, 326–327
- TabNavigator, 245–246
- Take Memory Snapshot button, 92–93
- target phase of event propagation, 47

- target property, 44
- targeting versions of Flex SDK, 68–69
- Test-Driven Development (TDD), 386
- Text control, 146
- text property, 21–22, 147, 149, 210
- text-related user interface controls, 140, 145–149, 166–168, 170–171
- textAlign style, 131
- TextArea control, 148
- TextInput control, 147–148, 384
- textRollOverColor style, 135
- Thermo (Flex development product), 12
- thousandsSeparator property, 205
- 360|Flex conference (Web site), 395
- 3D engines for ActionScript, 388
- tickInterval property, 144
- Tile container, 228–229
- tileHeight property, 229
- TileList control, 164–166, 229
- tileWidth property, 229
- title bar, Panel container, 232
- title property, 232
- titleIcon property, 232–233
- TitleWindow container, 233–235, 328
- toggle property, 132–133
- ToggleButtonBar control, 240–241
- ToolTipManager, 330–332
- ToolTips, 144, 196–197
- trace function, 48–49, 84
- Transition class, 362
- transitions for effects, 362
- Tree control, 173–174
- trigger property, 200
- triggerEvent property, 200
- triggering methods, 200–201, 354–357, 359
- troubleshooting (debugging)
 - breakpoints, adding, 84–85
 - bugbase from Adobe Flex, 396
 - data binding expressions, 292–293
 - event, 48–49
 - Flex Builder process, 84–87
 - Flex-Spy, 387–388
 - Problems view, 71–72, 293
 - variable inspection, 86–87
- TrueType Font (TTF) file, 370
- truncateToFit property, 146

• **U** •

UIComponent control class, 130–131, 196, 333, 339

unit-testing framework, 386

url property, 310

URL (Uniform Resource Locator), absolute compared to relative, 150

URLRequest object, 136

user groups, Flex (Web site), 392–393

user interface controls. *See also* data-aware user interface controls

clickable category. *See* clickable user interface controls

focus management, 326

formatter controls, 189, 209–214

inheritance hierarchy, 130–131

introduction, 129

media display, 149–156

MVC framework, 386

navigation bar, 240–241

overview, 21–22

text-related, 140, 145–149, 166–168, 170–171

• **V** •

valid event, 201

validate method, 201

ValidationResultEvent objects, 202

validator controls

event listeners, 199, 201–202

introduction, 189

properties settings, 197–199

triggering methods, 200–201

types, 203–209

visual cues for errors, customizing, 196–197

validPatternChars property, 214

valueCommit event, 200

variableRowHeight property, 182

variables

Alert class, 236

declaring, 77–78

inspecting, 86–87

MouseEvent.CLICK, 46

popUp, 329, 330

renaming, 99–100

row height adjustment variables, 182–183

static, 38–40, 235

Variables panel, 86–87

VBox container, 225–226

VBox tag, 29

VDividedBox container, 227–228

vertical list controls, 164

verticalGap property, 226–227

verticalScrollPolicy property, 180, 192

verticalScrollPosition property, 180

VideoDisplay control, 151

view states, 347–354, 362

views

Components, 103, 113–115

Navigator, 20, 62, 66–67, 102

Outline, 103, 115–116

perspective views, customizing, 58–59

Problems, 71–72, 293

properties inspector, 118–120

States, 103, 116–118

ViewStack navigator control, 239–242

visible property, 49

visual compared to sound controls, 149.

See also skins; styles

visual cues for validation errors, customizing, 196–197

Visual Graph Library (Web site), 385

volume property, 153

VScrollBar tag, 143–144

• **W** •

Watch Live Memory Data box, 89–90

WeatherForecast class, 317–320

Web applications. *See* Flex, Adobe

Web server, accessing data from

AMF binary transfer, 320

HTTP connection, 309–316

introduction, 309

Web services connection, 316–320

Web services, connecting to, 316–320

Web Services Definition Language (WSDL)
 document, 316–320

Web sites, book's companion, 4. *See also*
 individual Web sites

WebKit browser, 15

width property, 170, 192

Windows compatibility, 54

Wipe effects, 359–360

wordWrap property, 182

workspace, definition, 20

wrongLengthError property, 202

WSDL Import Wizard, 316–320

wsdl property, 316

WSDL (Web Services Definition Language)
 document, 316–320

• X •

xField property, 254, 267

XML control, 159–160, 166–168

XML declaration, 21

XML (eXtensible Markup Language)
 as format for remote data transfer, 309

RIAs, relationship to, 10

SOAP, 316
 uploading files, 310

XMLList control, 160

XMLListCollection, 161–162, 298, 300–302

• Y •

Yahoo! groups (Web site), 391–392, 396

yearProperty property, 205

yearSource property, 205

yField property, 254, 267

• Z •

zero-based indexing, definition, 239

ZipCodeFormatter, 214

ZipCodeValidator, 198, 202, 208–209

Zoom effect, 358–359

zooming
 in Design mode screen, 105

 SeriesZoom animation effect, 274–276