

Developing GIS Solutions with MapObjects™ and Visual Basic®



Bruce A. Ralston

Learn to Program GIS Applications from the Ground Up

Contents

Chapter 1: Entering the VB/MO Culture	1
Introduction	1
An Introduction to OOP Implementations	1
Working in Visual Basic	5
Forms and Controls	13
The VB Controls Sample Program	16
Check Boxes, Radio Buttons, and List and Combo Boxes	19
Summary	24
Chapter 2: Using ActiveX Controls	25
Introduction	25
A Data Access Application	25
Adding DLL Controls	29
A Closer Look at VB Projects	32
Summary	32
Chapter 3: Programming Basics	33
Introduction	33
Types of Code Modules in VB	33
The Mechanics of Editing Code	35
Variables	37
Variable Scope	39
Data Types	40
Procedures	45
Control Structures and Message Boxes	48
Summary	54
Chapter 4: The MapObjects ActiveX Control	55
Introduction	55
ActiveX Components and DLLs	55
The MapObjects ActiveX Control	57
Working with Layers	63
Summary	66

Chapter 5: Managing Map Layers	67
Introduction	67
VB's Common Dialog	68
Data Connections, GeoData Sets, and Adding Layers and Images	69
Using the CommonDialog Object with GeoData Sets	72
MoView2: A Helpful Reference	73
Adding Layers Interactively	73
Synchronizing the Map and the Add Layer Form	80
Summary	80
Chapter 6: Toolbars and Layer Management	81
Introduction	81
Adding a Remove Button	81
Image Lists and Toolbars	84
The Map Toolbar	89
Zoom Methods	91
Summary	92
Chapter 7: Geometry, Coordinates, and Identifying Features	93
Introduction	93
Distance Methods	93
Resizing the Main Form	95
The MapObjects Recordset Object	96
Managing the Identify Button	99
Retrieving a Selection	103
Displaying Selected Records	106
Summary	110
Chapter 8: Rendering, Part 1: Single Symbols	111
Introduction	111
The Tab Strip Control	111
Setting Drawing Properties	115
Summary	120
Chapter 9: Rendering, Part 2: The Unique-value Map Renderer	121
Introduction	121
VB and Classes	123
Editing the frmDrawProps Code Page	125
Creating the Value Map Renderer	128
Summary	136
Chapter 10: The Unique-value Map Renderer Continued	137
Introduction	137
Changing the Symbol in a Flex Grid Cell	138
Initializing frmDrawProps	143

Displaying the Current Renderer Page	144
Summary	147
Chapter 11: The Quantile Renderer	149
Introduction	149
Building the Quantile Renderer	149
Restoring the Quantile Renderer	158
Summary	160
Chapter 12: Collections, Classes, and Advanced Selections	161
Introduction	161
The Collection Object and the Selection Button	162
Enabling Selections	163
The Need for a Class	167
Using the Class	168
Saving the Selected Set	172
Selecting by Theme	180
Summary	186
Chapter 13: Web Basics	187
Introduction	187
GIS and the Web	187
HTML Basics	191
Form Basics	199
Web Page Data Input Devices	200
Summary	208
Chapter 14: Serving Maps on the Web: Method 1	209
Introduction	209
Modifying Form Units: From Twips to Pixels	211
Getting Input File Values	212
Translation Functions	216
MakeBatchMap: Part 1	218
MakeBatchMap: Part2	222
MakeBatchMap: Part 3	227
Writing the Web Page	228
Putting It All Together	233
Summary	237
Chapter 15: Serving Maps on the Web: Method 2	239
Introduction	239
An Overview of the MOIMS	240
Working with the WebLink Control	241
Configuring the IMS	251
A Setup Form	254
Server Maintenance	255

Comments on the MOIMS	255
Summary.....	256
Chapter 16: Buffering and Overlay: Part 1.....	257
Introduction.....	257
Setting Up the Project.....	258
Point Buffers and Coordinate Systems.....	260
The BufferPoints Sub	263
Drawing the Buffers.....	265
Specifying Overlay Parameters	267
The Intersect Function	272
Summary.....	274
Chapter 17: On-the-Fly Projections.....	277
Introduction.....	277
Datums and Geographic Coordinates	277
Projection and Geographic Coordinate Systems.....	283
Using Coordinate Systems.....	284
Summary.....	288
Chapter 18: Buffering and Overlay: Part2	289
Introduction.....	289
Allowing Buffers of Any Shape Type	290
Buffering	293
Reporting the Results	296
Tying Up Some Loose Ends	301
Summary.....	308