

# Contents

<i>About the Author</i> .....	<i>xiii</i>
<i>About the Technical Reviewer</i> .....	<i>xv</i>
<i>Acknowledgments</i> .....	<i>xvii</i>
<i>Introduction</i> .....	<i>xix</i>
<i>What Does This Book Cover?</i> .....	<i>xix</i>
<i>What Makes This Book Unique?</i> .....	<i>xx</i>
<i>Why Read This Book?</i> .....	<i>xxi</i>
<i>Who Should Read This Book?</i> .....	<i>xxi</i>
<i>A Note About the Examples</i> .....	<i>xxii</i>
 <i>Part One Theory</i> .....	 <i>1</i>
 <i>Chapter 1 .NET Primer</i> .....	 <i>3</i>
<i>Constructing Your Class</i> .....	<i>3</i>
<i>Overloading Functions</i> .....	<i>5</i>
<i>Collecting the Garbage</i> .....	<i>6</i>
<i>Cleaning Up After Yourself</i> .....	<i>7</i>
<i>Exception Handling</i> .....	<i>7</i>
<i>Special Case Try Blocks</i> .....	<i>10</i>
<i>Delegating Events</i> .....	<i>12</i>
<i>The Proper Delegate Calling Chain</i> .....	<i>18</i>
<i>Everything Is an Object</i> .....	<i>22</i>
<i>Integer vs. Long</i> .....	<i>25</i>
<i>Using Reflection</i> .....	<i>26</i>
<i>Turn On Strict Type Checking</i> .....	<i>27</i>
<i>Summary</i> .....	<i>28</i>

<b>Chapter 2 GDI Explained</b>	<b>31</b>
<i>Some Cool New Features</i>	32
<i>Unmanaged Code</i>	32
<i>Is There an Unmanaged GDI+?</i>	34
<i>Managed Code</i>	35
<i>The Device Context vs. the Graphics Object</i>	36
Using a Device Context	36
Using the Graphics Object	37
<i>The Main Features of GDI+</i>	43
2D Vector Graphics	43
GDI+ Imaging	44
Displaying Text	45
<i>Important Objects in GDI+ Drawing</i>	46
The Pen Object	46
The Brush Object	47
The Graphics Object	47
<i>Summary</i>	48
 <b>Chapter 3 GDI and VB 6.0 Drawing Example</b>	 <b>49</b>
<i>Constructing a Fishbowl</i>	49
Using the VB 6.0 Drawing Tools	50
Making the VB 6.0 Project	52
Adding GDI Calls to the Main Program	64
<i>Graphics in C++</i>	72
<i>Summary</i>	77
 <b>Chapter 4 Vector Graphics</b>	 <b>79</b>
<i>Coordinate Systems and Transformations</i>	79
Transforming World Coordinates	79
Transforming Device Coordinates	80
<i>Using the System.Drawing Namespace</i>	81
<i>The System.Drawing Classes</i>	82
Using the Pen Class	82
The Pens Class	95
The SolidBrush Class and the TextureBrush Class	97
The Brushes Class	97
Using the Graphics Class	98
<i>Summary</i>	162

<b>Chapter 5</b>	<b>Advanced Graphics</b>	165
<i>More About Pens, Lines, and Brushes</i>		165
Using the Hatch Brush		171
<i>Blending Colors</i>		176
Alpha Blending		177
My Friend Flicker		187
Blending		191
More Transforms		228
Miscellaneous Extras		239
<i>Summary</i>		244
<b>Chapter 6</b>	<b>Working with Images</b>	247
<i>Images Files Explained</i>		247
Storing Bitmaps As BMP Files		249
Storing Bitmaps As Other File Types		250
<i>Working with Image Classes</i>		252
The Bitmap Class		253
The Icon Class		291
<i>Vector-Based Images</i>		292
Creating Metafiles		292
Enumerating Metafiles		296
<i>Simple Animation</i>		303
<i>Using Controls to Draw Images</i>		312
<i>Summary</i>		315
<b>Chapter 7</b>	<b>Drawing Text</b>	317
<i>Font Characteristics</i>		318
Using the Correct Vernacular		318
Specifying the FontFamily		319
Specifying the Font		322
Using FontFamily Members		322
Showing Font Metrics		323
Enumerating Fonts		330
Other Font Properties		337
<i>Collections of Fonts</i>		338
<i>Changing Perspective on Text</i>		346
<i>Formatting Text</i>		355
Typing Text in a Rectangle		357
<i>Summary</i>		372

<b>Chapter 8 Printing</b>	375
<i>How Printing Is Handled in .NET</i>	376
The BeginPrint and EndPrint Events	376
The PagePrint Event	377
<i>Creating a Standard Print Job</i>	401
<i>Printing Graphics</i>	415
<i>Dialog Box-Based Printing</i>	423
<i>Summary</i>	432
 <b>Part Two Application Notes</b>	 433
 <b>Chapter 9 GDI+ Projects</b>	 435
<i>The Truth About GDI+</i>	435
<i>The Screen Capture Program</i>	436
Designing the Program	436
Drawing the Rectangle	438
Start the Project	445
Changing the Resolution	449
Entering Code for the Main Screen	453
Getting the Desktop Image	460
Showing the DeskTop Image	463
<i>Summary</i>	490
 <b>Chapter 10 GDI+ with Forms</b>	 493
<i>What's the Point?</i>	494
<i>The Project Design</i>	494
The Main Screen's Layout	495
Start the Project	496
<i>Drawing the Shape</i>	498
Smoothing the Path	512
<i>Generating the Custom Form</i>	518
<i>Adding a Tree View of the Saved Paths</i>	533
<i>Dropping Names</i>	537
<i>One Last Thing</i>	544
<i>The Final Part</i>	546
<i>Summary</i>	548

<i>Appendix</i>	<i>The Enumerations</i> .....	551
<i>Index</i> .....		567