

<i>Chapter 1 : The Visual Basic Background</i>	1.1-17
1.1 : Windows	1.1-17
1.2 : Object Oriented Programming	1.2-18
1.3 : What can OOP do for you?	1.3-19
1.4 : Overview of the definitions:.....	1.4-19
1.5 : Visual Basic.NET: A different breed	1.5-20
<i>Chapter 2 : Exploring the Visual Basic Environment</i>	1.5-22
2.1 : Starting a Visual Basic project.....	2.1-22
2.2 : The programming environment.....	2.2-25
<i>Chapter 3 : The Basic Objects and Controls</i>	2.2-31
3.1 : The Form.....	3.1-31
3.2 : The Controls	3.2-31
3.3 : The Standard controls inside Visual Basic 5.0 and 6.0	3.3-33
3.4 : Common Controls from COMCTRL in VB 5.0 and 6.0	3.4-35
3.5 : Common Dialog Control from CMDLG in VB 5.0 and 6.0	3.5-36
3.6 : Additional Controls only available in the NET framework	3.6-36
3.7 : Serial Communication Control MSCOMM.....	3.7-39
3.8 : Menu's	3.8-40
3.9 : Properties in detail	3.9-43
<i>Chapter 4 : Events and Methods</i>	3.9-47
4.1 : Tapping into Events	4.1-47
4.2 : Methods	4.2-51
<i>Chapter 5 : The Visual Basic Language</i>	4.2-53
5.1 : Variables.....	5.1-54
5.2 : Arrays.....	5.2-58
5.3 : Types.....	5.3-64

5.4 : Constants	5.4-65
5.5 : Enumerations	5.5-66
5.6 : Collections	5.6-67
5.7 : Scope of Variables.....	5.7-68
5.8 : Scope levels.....	5.8-71
5.9 : Subroutines and Functions	5.9-73
5.10 : Scope of procedures.....	5.10-75
5.11 : Numerical Operators.....	5.11-75
5.12 : Base conversion.....	5.12-77
5.13 : Logical Operators	5.13-77
5.14 : Shift Operators (NET only)	5.14-78
5.15 : Flow Control	5.15-78
5.16 : Loop Constructions	5.16-81
5.17 : String manipulation Left\$ - Right\$ - Ltrim\$ - Rtrim\$.....	5.17-84
5.18 : File Manipulation under Visual Basic Classic	5.18-89
5.19 : Using the FileSystemObject	5.19-103
5.20 : File I/O under the NET framework	5.20-108
<i>Chapter 6 : The NET platform in more detail.....</i>	<i>5.20-128</i>
6.1 : Namespaces	6.1-128
6.2 : Threads.....	6.2-129
<i>Chapter 7 : Creating a user interface</i>	<i>6.2-137</i>
7.1 : Creating the Form	7.1-137
7.2 : Arrays of Objects and Controls.....	7.2-139
7.3 : Console applications (NET)	7.3-144
<i>Chapter 8 : Attaching code to handle events.....</i>	<i>7.3-145</i>
8.1 : Attaching code to events in VB Classic.....	8.1-145
8.2 : Attaching event handlers in NET	8.2-147

Chapter 9 : Running and debugging a program.	8.2-150
9.1 : Running a program	9.1-150
9.2 : Debugging a program	9.2-151
9.3 : Examining Variables	9.3-152
9.4 : Advanced Debugging: The Watch Window.....	9.4-152
9.5 : Using Breakpoints	9.5-155
9.6 : The Debug Object.....	9.6-156
9.7 : Debugging NET style.....	9.7-157
Chapter 10 : Distributing a program.....	9.7-159
10.1 : The First steps	10.1-159
10.2 : Specifying the Media	10.2-160
Chapter 11 : Multi-module projects	10.2-163
11.1 : Multiple Forms	11.1-163
11.2 : Modules	11.2-164
11.3 : Accessing items from other parts of the program	11.3-165
11.4 : Root structure analogy of a project	11.4-166
Chapter 12 : A couple of case studies	11.4-167
12.1 : Case Study 1: A small Text Editor.....	12.1-167
12.2 : Case Study 2: A Calculator	12.2-174
12.3 : The Calculator NET style	12.3-182
Chapter 13 : One step beyond.....	12.3-186
13.1 : Advanced Form manipulations	13.1-186
13.2 : Additional Form properties in NET	13.2-189
13.3 : Menu's	13.3-192
13.4 : Modifying menus from code	13.4-196
13.5 : Special Menu features	13.5-200
13.6 : Option Selectors.....	13.6-201
13.7 : Timer objects	13.7-204

13.8 : User entry objects	13.8-207
13.9 : Printing	13.9-209
13.10 : Taking Advantage of the Windows 95 Look	13.10-212
13.11 : The XP look	13.11-214
<i>Chapter 14 : Graphics</i>	<i>13.11-217</i>
14.1 : Basic coordinate operations	14.1-217
14.2 : Drawing setup	14.2-217
14.3 : Drawing primitives	14.3-220
14.4 : Saving and loading graphics	14.4-223
14.5 : Coordinate systems	14.5-225
14.6 : The graphics environment in.NET	14.6-227
<i>Chapter 15 : Creating console applications (NET)</i>	<i>14.6-240</i>
<i>Chapter 16 : Communicating to the world around us</i>	<i>14.6-242</i>
16.1 : SendKeys: a simple way of communicating	16.1-242
16.2 : DDE: another means of inter-program communication	16.2-246
16.3 : Serial IO: Talking to world beyond the port	16.3-248
16.4 : Serial IO under NET	16.4-256
16.5 : Serial IO under Visual Basic 2005 (NET2.0)	16.5-261
16.6 : TCP/IP for VB Classic: Windows Sockets with Winsock	16.6-261
16.7 : TCP/IP Net style	16.7-266
<i>Chapter 17 : Some more case studies</i>	<i>16.7-270</i>
17.1 : Case Study 3: Doodle, A graphics program	17.1-270
17.2 : Case Study 4: The data terminal	17.2-275
17.3 : Case Study 5: AlphaServer, a Telnet server	17.3-279
17.4 : Case Study 6: AlphaServer under NET	17.4-286
17.5 : Case Study 7: LoanCalc: Using Excel in your applications	17.5-286
<i>Chapter 18 : Digging into Windows</i>	<i>17.5-290</i>

18.1 : DLL's.....	18.1-290
18.2 : On Passing parameters to procedures and functions.....	18.2-292
18.3 : API programming	18.3-294
18.4 : API programming under NET	18.4-296
Chapter 19 : ActiveX Control Creation.....	18.4-298
19.1 : Creating an ActiveX Object	19.1-299
19.2 : Adding properties and events.....	19.2-302
19.3 : What the wizard came up with	19.3-308
19.4 : A closer look at the final code.....	19.4-309
19.5 : A custom control in the NET framework.....	19.5-311
Chapter 20 : Building better programs	19.5-316
20.1 : The KISS Way	20.1-316
20.2 : Atomic Programming.....	20.2-319
20.3 : Naming objects	20.3-320
20.4 : Error handling in Visual Basic Classic.....	20.4-321
20.5 : Error handling in the NET framework	20.5-327
Chapter 21 : The Windows registry.....	20.5-329
21.1 : Digging into the registry	21.1-329
21.2 : Data mining in the registry.....	21.2-331
21.3 : Make use of the registry.....	21.3-334
21.4 : The Registry and NET	21.4-335
Chapter 22 : Scripting interpreters.....	21.4-336
22.1 : Building a simple script interpreter.....	22.1-336
22.2 : MSScript: A real script interpreter.	22.2-341
Chapter 23 : Visual Basic for Applications	22.2-344
23.1 : What is Visual Basic for Applications?	23.1-344
23.2 : Using VBA from Word or Excel to develop code	23.2-344
Chapter 24 : Classes.....	23.2-345

24.1 : The Class concept	24.1-345
24.2 : Creating a Class	24.2-345
24.3 : Instantiating objects from a class	24.3-346
24.4 : A practical example	24.4-347
24.5 : Creating a class in NET.....	24.5-348
<i>Chapter 25 : Yet More Case studies.....</i>	<i>24.5-349</i>
25.1 : Case Study 7: Shutdown Windows via an API call	25.1-349
25.2 : Case Study 8: The LED ActiveX control.....	25.2-350
25.3 : Case Study 9: MiniBasic: A program environment for MSScript	25.3-357
25.4 : Case Study 10: Additional notes on the use of Classes.....	25.4-360
<i>Chapter 26 : The Computer.....</i>	<i>25.4-364</i>
26.1 : The PC: A Historical Overview	26.1-364
26.2 : The PC: A Hardware Description	26.2-365
26.3 : The PC's Input and Output Components.....	26.3-367
26.4 : The internal buses.....	26.4-371
<i>Chapter 27 : Controlling External PC ports.....</i>	<i>26.4-375</i>
27.1 : Finding the IO ports	27.1-375
27.2 : Hardware Access	27.2-378
<i>Chapter 28 : The Printer port In Detail.....</i>	<i>27.2-380</i>
28.1 : Functional diagram	28.1-380
28.2 : Register level description	28.2-381
28.3 : Basic operations	28.3-382
28.4 : Bit-Banging interfaces	28.4-383
28.5 : Printer port Control Using ClassWork	28.5-387
28.6 : Special printer port modes.....	28.6-387
28.7 : Enhanced Parallel Port	28.7-390
28.8 : Extended Capabilities Port	28.8-395

Chapter 29 : The Serial Port In Detail.....	28.8-396
29.1 : System description.....	29.1-396
29.2 : Port interface	29.2-398
29.3 : The UART.....	29.3-401
29.4 : RS-232 and Other Serial Conventions.....	29.4-401
29.5 : Tips and tricks	29.5-402
29.6 : Basic Serial Operations using MSCOMM	29.6-403
Chapter 30 : The ISA bus in detail.....	29.6-404
30.1 : The ISA bus.....	30.1-404
30.2 : Selecting an address for our card.....	30.2-411
30.3 : PC104.....	30.3-413
Chapter 31 : USB.....	30.3-415
31.1 : The USB port in detail	31.1-415
31.2 : USB from a hardware point of view.	31.2-418
31.3 : AN USB to rs232 translator.....	31.3-420
31.4 : An USB to GPIO translator using the FTDI245.....	31.4-422
31.5 : An USB to GPIO translator using the FTDI2232.....	31.5-422
Chapter 32 : Ethernet	31.5-423
32.1 : Wiring up a network	32.1-423
32.2 : Configuring the network.....	32.2-424
32.3 : Basic networking housekeeping	32.3-426
32.4 : Data transport sockets and ports	32.4-427
32.5 : The Xport Device.....	32.5-428
32.6 : Sample System using the Xport.....	32.6-429
Chapter 33 : GPIB.	32.6-430
33.1 : The GPIB bus structure.....	33.1-430
33.2 : IEEE488.2	33.2-430
33.3 : SCPI.....	33.3-431

Chapter 34 : Vision	33.3-433
34.1 : GPIBcore	34.1-434
34.2 : GPIBcore programming guide	34.2-435
34.3 : GPIBcore I/O functions.....	34.3-440
34.4 : GPIBcore Miscellaneous support functions	34.4-441
34.5 : ClassWork	34.5-443
34.6 : General Rules for ClassWork module development.....	34.6-450
34.7 : TestBench	34.7-453
Chapter 35 : Designing Test Programs	34.7-455
35.1 : Clean code	35.1-455
35.2 : Accessing instruments and hardware	35.2-456
35.3 : Collecting data versus Analyzing	35.3-457
35.4 : Creating log files	35.4-457
35.5 : Anatomy of a well structured test-program	35.5-457
Chapter 36 : Special Programming techniques	35.5-460
36.1 : Stream Interpreting	36.1-460
Chapter 37 : Building user interfaces	36.1-464
37.1 : Build a splash screen and design a logo and icon.....	37.1-464
37.2 : Constructing the Main form.	37.2-465
37.3 : Organizing Objects and controls.....	37.3-468
37.4 : Configuration and tool forms	37.4-468
37.5 : Help files	37.5-469
Chapter 38 : And yet more case studies	37.5-470
38.1 : Case Study 11: SPI stack on LPT.....	38.1-470
38.2 : Case Study 12: Data export to file.....	38.2-473
38.3 : Generating CSV files.	38.3-475
38.4 : Case 13: A U/I plotter using GPIBcore operations.....	38.4-476

38.5 : Case 16: A U/I plotter using ClassWork operations	38.5-477
38.6 : Case 13: A U/I plotter using TestBench operations.....	38.6-478
<i>Chapter 39 : Closing thoughts.....</i>	<i>38.6-480</i>