

Forms 6i

Section	Title	Page
One	Introduction to Forms 6i	2
Two	Running Forms 6i	5
	– Introduction	6
	– Runtime Dialog	7
	– Ifrun60.exe	8
	– Simplifying Access	9
Three	Using Forms 6i at Runtime	13
	– Interface	14
	– Normal and Enter Query Mode	16
	– Query Criteria	17
	– Counting Query Hits	20
	– List of Values	21
	– Manipulating Records	22
	– Shortcut Keys	23
	– <i>Exercise One</i>	24
Four	Forms 6i Interface	31
	– Ifbld60.exe	32
	– Welcome to the Form Builder	34
	– Object Navigator	35
	– PL/SQL Libraries	38
	– Object Libraries	39
	– Built In Packages	40
	– Database Objects	41
Five	Forms 6i Wizards	42
	– Data Block Wizard in Forms 6i	44
	– Layout Wizard in Forms 6i	51
	– <i>Exercise Two</i>	60
Six	Layouts in Forms 6i	62
	– Types of Layouts	63
	– Form Layout in Forms 6i	64
	– Tabular Layout in Forms 6i	65
Seven	The Layout Editor in Forms 6i	67
	– Introduction	68
	– Anatomy	69
	– Toolbar	70
	– Tool Palette	73
	– Rulers	75
	– Marker and Ruler Guides	77
	– Grid	78
	– Functionality	79
Eight	Compiling Forms in Forms 6i	80
	– Introduction	81
	– Errors Opening Modules	84
	– Forms Builder	86
	– Compiler Errors	89
	– Clean Compilation	95
	– Ifcmp60.exe	96
Nine	Forms 6i Objects	100
	– Introduction to Windows	101
	– MDI Application Windows	102
	– Document Windows	103
	– Dialog Windows	104
	– SDI Windows	105
	– Canvases in Forms 6i	106
	– Content Canvas in Forms 6i	107

Forms 6i

Section	Title	Page
	– Stacked Canvas in Forms 6i	108
	– Tab Canvas in Forms 6i	109
	– Toolbar Canvas in Forms 6i	110
	– Views in Forms 6i	111
	– Blocks in Forms 6i	113
	– Data Blocks in Forms 6i	114
	– Control Blocks in Forms 6i	115
	– Canvas Items in Forms 6i	116
	– Boiler Plate Objects in Forms 6i	117
	– Program Units in Forms 6i	118
	– Procedures in Forms 6i	119
	– Functions in Forms 6i	120
	– Packages in Forms 6i	121
	– Package Body in Forms 6i	122
Ten	Property Palette in Forms 6i	124
	– Introduction	125
	– Anatomy of the Palette	127
	– Palette Toolbar	130
Eleven	Master-Detail Relations in Forms 6i	133
	– Introduction	134
	– Creating Relations	135
	– <i>Exercise Three</i>	148
Twelve	PL/SQL in Forms 6i	153
	– Introduction	154
	– Referencing Forms Items	155
	– Referencing Stored Programs	156
	– Stored Programs	157
	– Local Variables	158
	– Referencing Local Variables	161
	– Performing DML	162
	– Forms Packages	163
	– Database Packages	164
Twelve	The PL/SQL Editor in Forms 6i	165
	– Creating Programs	167
	– Anatomy of the Editor	168
	– Syntax	169
	– Colour Coding	170
	– Compiling	171
	– Compilation Errors	172
	– Commenting Code	175
	– Changing Program Names	176
	– Navigation of Programs	177
Fourteen	Triggers in Forms 6i	179
	– Introduction	180
	– Positioning Triggers within Forms	181
	– Purpose of Form Level Triggers	182
	– Purpose of Block Level Triggers	183
	– Purpose of Item Level Triggers	184
	– Execution Hierarchy of Triggers	185
	– Disabling Triggers in Forms 6i	188
	– Creating Triggers in Forms 6i	189
	– Key Triggers in Forms 6i	191
	– Using Key-Others in Forms 6i	193
	– When-Validate-Item Trigger	196
	– When-Validate-Record Trigger	198

Forms 6i

Section	Title	Page
	– Block Triggers in Forms 6i	199
	– Post-Block Trigger	200
	– Pre-Block Trigger	201
	– When-Clear-Block Trigger	202
	– When-New-Block-Instance Trigger	203
	– Record Triggers in Forms 6i	204
	– Post-Record Triggers	205
	– Pre-Record Triggers	206
	– When-Create-Record Trigger	207
	– When-Database-Record Trigger	208
	– When-New-Record-Instance Trigger	209
	– When-Remove-Record Trigger	210
	– When-Validate-Record Trigger	211
	– Query Triggers in Forms 6i	212
	– Pre-Query Trigger	213
	– Post-Query Trigger	214
Fifteen	Built-in Packages in Forms 6i	216
	– Introduction	217
	– Accessing Packages	220
	– The Message Function	221
	– The Pause Function	222
	– Form_Trigger_Failure	223
	– Bell	227
	– Using Synchronize in Forms	228
	– Navigation Functions	230
	– Using Go_Block	231
	– Using Go_Item	233
	– Navigation Restrictions	236
	– Navigation Function	237
	– Next and Previous_Record	238
	– Next and Previous_Block	239
	– Next and Previous_Item	240
	– Next and Previous_Field	241
	– Using Form_Success	242
	– DML Commands	244
	– Record Selection	245
	– Using Do_Key	246
	– Logon and Logout	247
	– Changing the Cursor	250
	– <i>Exercise Four</i>	251
Sixteen	Smart Triggers in Forms 6i	257
	– Introduction	258
	– Using Smart Triggers	259
Seventeen	Manipulating Objects in Forms 6i	260
	– Introduction	261
	– Built Ins	263
	– Get and Set_Property	264
Eighteen	Syntax Palette in Forms 6i	267
	– Introduction	268
	– Anatomy of the Palette	269
	– Using the Syntax Palette	271
Nineteen	Text and Display Items in Forms 6i	274
	– Text Items	275
	– Display Items	276
	– Creating	277

Forms 6i

Section	Title	Page
	– Format Masks	278
	– Calculated Value	279
	– Summary Calculation	280
	– Layout Editor	282
	– Initial Values	283
	– Control Items	285
	– <i>Exercise Five</i>	287
Twenty	Record Groups	295
	– Introduction	296
	– Creating Dynamic Record Groups	297
	– SQL Style in Record Groups	298
	– Creating Static Record Groups	299
Twenty One	List of Values	303
	– Introduction	304
	– Creating LOVs in Forms 6i	306
	– Using the LOV Wizard	307
	– Entering an SQL Query	308
	– Query Builder	309
	– Selecting Columns for the LOV	318
	– Naming the Column Titles in the LOV	319
	– Positioning the LOV	320
	– Returning LOV Items into Forms 6i	321
	– Completing Creation	322
	– Creating LOVs Manually in Forms 6i	323
	– Amending LOVs in Forms 6i	324
	– Assigning LOVs to Items in Forms 6i	325
	– Attributes of an LOV	327
	– Displaying LOVs Programmatically	329
	– Triggers for LOVs in Forms 6i	330
	– <i>Exercise Six</i>	331
Twenty Two	GUI Items in Forms 6i	336
	– Introduction	337
	– Check Box	338
	– Triggers for Check Boxes	339
	– Built-ins for Check Boxes	340
	– Radio Group	341
	– Problems with Radio Groups	345
	– Radio Group Triggers	346
	– Radio Group Built-ins	347
	– List Item	348
	– Drop down Lists	350
	– Text Lists	351
	– Combo Box	352
	– List Item	353
	– List Item Built-ins	355
	– Triggers for List Items	356
	– When-List-Activated	357
	– When-List-Changed	358
	– Push Button	359
	– Triggers for Button Items	361
Twenty Three	Mouse Event Triggers in Forms 6i	362
	– When-Mouse-Down	365
	– Mouse Movements	366
	– <i>Exercise Seven</i>	367

Forms 6i

Section	Title	Page
Twenty Four	ID's in Forms 6i	376
	– Introduction	377
	– Find_	378
	– Using Find_Item	379
	– Using ID_NULL	380
Twenty Five	Error and Message Handling in Forms 6i	381
	– Introduction	382
	– User Exceptions	385
	– Forms Errors	388
	– Database Errors	390
	– SQL Errors	393
	– Triggers	395
	– On-Error Trigger	396
– On-Message	398	
Twenty Six	Alerts in Forms 6i	400
	– Introduction	401
	– Different Alert Styles	403
	– Attributes of Alerts	404
	– Displaying Alerts	405
	– Alert Built-ins	406
	– Set_Alert_Property	407
	– Set_Alert_Button_Property	408
	– Triggers for Alerts	409
	–	410
Twenty Seven	Timers in Forms 6i	410
	– Introduction	411
	– Create_Timer	413
	– Amending Timers in Forms 6i	414
	– When-Timer-Expired	415
	– Get_Application_Property	416
	– <i>Exercise Eight</i>	417
Twenty Eight	System Variables in Forms 6i	423
	– Introduction	424
	– Accessing Variables	425
	– Displaying Variables	427
	– Date and Time	429
	– Application Properties	430
Twenty Nine	Sub-Classing in Forms 6i	431
	– Introduction	432
	– Pathnames	434
	– Creating Sub Classes	435
	– Identifying Sub Classes	437
	– Updating Sub-Classed Objects	438
	– Removing Sub Classes	439
	–	440
Thirty	Parameters in Forms 6i	440
	– Description	441
	– Pre-Defined	442
	– Referencing Parameters	444
	– Dynamic Parameters	445
	– Creating Parameters	448
	– Built-ins for Parameters	450
Thirty One	Global Variables in Forms 6i	451
	– Introduction	452
	– Declaring and Referencing	454
	– Erasing Globals	456

Forms 6i

Section	Title	Page
Thirty Two	Calling Modules in Forms 6i	457
	– Introduction	458
	– Types of Calls	460
	– Using Open_Form	461
	– Using Open_Form Arguments	462
	– Open_Form Arguments	463
	– Using Call_Form	464
	– Call_Form Arguments	465
	– Using New_Form	467
	– New_Form Arguments	468
	– Using Run_Product	470
	– Run_Product Arguments	471
	– Run_Product for Reports	474
	– Run_Product for Forms	475
	– Run_Product for Graphics	476
	– Closing Called Forms Modules	477
	– Exit_Form	478
	– Close_Form	481
	– When-Window-Activated	482
	– <i>Exercise Nine</i>	483
Thirty Three	PL/SQL Libraries in Forms 6i	492
	– Introduction	493
	– Creating PLSQL Libraries	494
	– Populating Libraries	495
	– Attaching Libraries	496
	– Paths in Libraries	500
	– Updating Libraries	501
	– Opening Forms Modules	503
	– Removing Libraries	505
	Thirty Four	Generic Coding in Forms 6i
– Introduction		507
– Name_in		509
– Copy		511
Thirty Five	Sound and Visual Items in Forms 6i	512
	– Image Item	513
	– Read_Image_File	514
	– Image Palette	515
	– Image Item Built-ins	516
	– Image Item Triggers	518
	– Chart Items	519
	– Chart Item Types	520
	– Creating Chart Items	523
	– Chart Item Built-ins	528
	– Sound Items	529
	– Sount Item Built-ins	531
	– Sound Item Triggers	532
	– Oracle Graphics	533
	– Static Oracle Graphics	534
	– Dynamic Charts	536
– OG.PLL	538	
Thirty Six	LOBS in Forms 6i	539
	– What are LOBS?	540
	– LOBS vs Long Datatype	541
	– Using LOBs in Forms 6i	542
	– LOB Restrictions in Forms 6i	544

Forms 6i

Section	Title	Page
Thirty Seven	Custom Items in Forms 6i	545
	– OLE Container	547
	– Active X Control	552
	– VBX Control	553
	– Bean Area	554
	– Built-ins for Custom Items	555
	– When-Custom-Item-Event	556
	– <i>Exercise Ten</i>	557
Thirty Eight	Visual Attributes in Forms 6i	561
	– Introduction	562
	– Using Visual Attributes	563
Thirty Nine	Hierarchical Tree Items in Forms 6i	564
	– Introduction	565
	– Using	568
	– Populating Trees	569
	– Data Structure	571
	– Initialising	572
	– Using	573
	– Get_Tree_Node_Property	574
	– Triggers	575
	– When-Tree-Node-Activated	576
	– When-Tree-Node-Expanded	577
	– When-Tree-Node-Selected	578
	– <i>Exercise Eleven</i>	579
Forty	Forms 6i Standards	585
	– Introduction	586
	– Module Naming Conventions	588
	– Object Naming Conventions	589
	– Blocks and Items	590
	– Version Control	592
Forty One	Forms 6i Object Groups	593
Forty Two	Forms 6i Object Libraries	596
	– Introduction	597
	– Creating Object Libraries	598
	– Populating Object Libraries	599
	– Referencing Object Libraries	600
	– Maintaining Object Libraries	601
	– Conclusion	602
	– SmartClasses	603
	– Creating SmartClasses	604
	– Modifying SmartClasses	606
Forty Three	Forms 6i Property Classes	607
	– Introduction	608
	– Creating Property Classes	610
	– Populating Property Classes	611
	– Referencing Property Classes	613
	– Removing Property Classes	617
Forty Four	Forms 6i Templates	618
	– Using Form Templates	620
Forty Five	Forms 6i Editors	621
	– Introduction	622
	– Default Editor	623
	– System Editor	624
	– User-Named Editor	625
	– Triggers	626

Forms 6i

Section	Title	Page
Forty Six	Menus in Forms 6i	627
	– Introduction	628
	– Structure of Menus in Oracle	631
	– Anatomy with Object Navigator	634
	– Libraries in Forms Menus	635
	– Program Units and Triggers in Menus	636
	– Editing Menu Codes	637
	– Menu Editor in Forms 6i	638
	– Anatomy of the Menu Editor	639
	– Menu Editor Toolbar	640
	– Menu Labels	642
	– Using Visual Attributes in Oracle Menus	643
	– Menu Command Types	644
	– Menu Item Types	645
	– Menu Security in Oracle Forms	647
	– Smartbars in Oracle Menus	648
	– Menu Built-ins	650
	– Menu Built-ins Example	651
	– Parameters	652
	– Menudefs.mmb	655
	– Navwiz.mmb	656
	– Stndrd20.mmb	657
	– Popup Menus in Oracle Forms	658
	– Editing Popups	659
	– Editing Popups	659
	– Triggers for Popup Menus	661
	– <i>Exercise Twelve</i>	662
Forty Seven	Database Objects in Forms 6i	667
	– Introduction	668
	– Database Triggers	669
	– Stored Program Units	674
Forty Eight	Forms 6i Builder Preferences	675
	– Introduction	676
	– General Preferences	677
	– Access Preferences	679
	– Wizards Preferences	681
	– Runtime Preferences	683
Forty Nine	Using Forms 6i on the Web	686
	– Introduction	687
	– Web vs Client	690
	– Limitations	692
	– Developing	695
	– Running	696
	– Utilities	697
Fifty	Converting and Saving Forms 6i	699
	– Introduction	700
	– Converting Forms	703
	– Saving to the Database	704
Fifty One	Forms 6i Debugger	714
	– Introduction	715
	– Breakpoints	717
	– Triggers	718
	– Running	719
	– Source Pane	720

Forms 6i

Section	Title	Page
	– Navigator Pane	721
	– Interpreter Pane	722
	– Toolbar	723
	– Creating Breakpoints	725
	– Creating Triggers	727
	– Modifying Debug Actions	732
	– Stack	733
	– Step	735
	– Debug Package	737
Fifty Two	Security in Forms 6i	740
	– Introduction	741
	– Access to the Module	742
	– Ability to Run the Module	743
	– Access to the Data	746
	– Granting Module Access	747
	– Query Mode	748
	– Triggers	749
Fifty Three	Forms 6i Help Facility	750
	– <i>Exercise Thirteen</i>	759

