

Essential PL/SQL for Oracle 9i Index

One	PLSQL Introduction	2
	– Procedural Language for SQL	3
Two	PLSQL Structure	5
	– Basic Structure of PLSQL	6
	– The Declaration Section in PLSQL	7
	– Local Variables in PLSQL	8
	– Naming Local Variables in PLSQL	10
	– Quoted Identifier Variables	12
	– Variable Datatypes (varchar2)	16
	– Variable Datatypes (numbers)	17
	– Variable Datatypes (number)	18
	– Variable Datatypes (decimal)	21
	– Variable Datatypes (integer)	22
	– Variable Datatypes (pls_integer)	23
	– Variable Datatypes (binary_integer)	24
	– Variable Datatypes (natural)	25
	– Variable Datatypes (naturaln)	26
	– Variable Datatypes (positive)	27
	– Variable Datatypes (positiven)	28
	– Variable Datatypes (signtype)	29
	– Variable Datatypes (simple_integer)	30
	– Variable Datatypes (boolean)	31
	– Variable Datatypes - Constants	32
	– Running PLSQL in SQL*Plus	34
	– Compiling PLSQL in SQL*Plus	36
	– Common Compilation Problems	39
	– Commenting PLSQL	41
	– Documenting PLSQL	43
Three	The SQL Plus Interface	44
	– Introduction	45
	– Anatomy of SQL Plus	49
	– ORA-12154:TNS:could not resolve the connect identifier	51
	– ORA-01017:invalid username/password; logon denied	52
	– Exiting an SQL Plus Session	53
	– Using the DOS Window	53
	– Using the Line Editor in SQL Plus	54
	– Using the Editor in SQL Plus	55
	– SQL Plus Environment Settings	56
	– File Manipulation in SQL Plus	58
	– Spooling Results in SQL Plus	59
	– Changing Passwords/Clearing the Screen in SQL	60
	– <i>Exercise One</i>	61
Four	Performing Simple DML in PLSQL	63
	– Introduction	64
	– Using Local Variables	65
	– Declaring Variables Using %Type	68
	– Using Substitution Values in PLSQL	72
	– <i>Exercise Two</i>	75
Five	Performing Conditional Statements in PLSQL	77
	– If .. Then Statements	78
	– If .. Then Else Statements	81
	– If .. Then Elself Statements	83
	– Combining Tests	84
	– Nesting Conditions	85
	– Boolean Conditions	86

Essential PL/SQL for Oracle 9i Index

Six	Communicating from PLSQL	87
	– Messaging Via PLSQL	88
	– <i>Exercise Three</i>	93
Seven	Exception Handling	95
	– Introduction	96
	– The When Clause	99
	– The When Others Clause	102
	– Raise_Application_Error	104
	– Oracle Defined Exceptions	108
	– Raising User Defined Exceptions	109
	– Pragma Exceptions in PLSQL	112
	– Grouping Exceptions in PLSQL	116
	– Alternative Way to Handle SQL Errors in PLSQL	117
	– Handling SQL Errors in PLSQL	118
	– Advanced SQLErrm	120
	– <i>Exercise Four</i>	121
Eight	Implicit Cursors	124
	– Using Implicit Cursors in PLSQL	125
	– Using Implicit Cursors to Select Records	127
	– Exceptions in PLSQL	128
	– Attributes of Implicit Cursors	130
	– SQL%FOUND	131
	– SQL%NOTFOUND	132
	– SQL%ROWCOUNT	133
Nine	Sub-Blocking in PLSQL	134
	– Introduction	135
	– Defining	136
	– Re-Raising Exceptions in PLSQL	138
	– <i>Exercise Five</i>	141
Ten	Explicit Cursors	145
	– Using Explicit Cursors in PLSQL	146
	– How Explicit Cursors Work	148
	– Attributes of an Explicit Cursor	151
	– Passing Parameters to Explicit Cursors	154
	– Explicit Cursors Versus Implicit Cursors	157
	– <i>Exercise Six</i>	158
Eleven	Loop Processing	161
	– Iterative Processing in PLSQL	162
	– Basic Looping in PLSQL	163
	– While Looping in PLSQL	167
	– For Looping in PLSQL	170
	– Using Dates in For Loops in PLSQL	174
	– Using Characters in For Loops in PLSQL	175
	– Implicit Cursor Looping in PLSQL	176
	– Explicit Cursor Looping in PLSQL	179
	– Using other Loops with Explicit Cursors	181
	– Loop Labels in PLSQL	184
	– <i>Exercise Seven</i>	186
Twelve	PL/SQL Database Objects	190
	– PLSQL Objects	191
	– Compiling PLSQL Objects	192
	– Metadata For PLSQL Objects	193
	– Re-Compiling PLSQL Objects	194
	– Dropping PLSQL Objects	196
	– Passing Parameters in PLSQL	197

Essential PL/SQL for Oracle 9i Index

	- Passing Parameters in PLSQL using Positional Notation	198
	- Passing Parameters in PLSQL using Named Notation	200
	- Using Mixed Notation in SQL	201
	- Metadata (User Source)	203
	- Describing PLSQL Objects in SQL*Plus	204
Thirteen	Programmer Defined Functions	205
	- Syntax of Functions in Oracle	206
	- Suggested Naming Convention of Functions in Oracle	209
	- Function Example in PLSQL	210
	- Running Functions in SQL and PLSQL	212
	- Running Functions in Oracle	213
	- <i>Exercise Eight</i>	214
Fourteen	Programmer Defined Procedures	218
	- Syntax of Procedures in Oracle	219
	- Example of Procedures in Oracle	221
	- Executing Procedures in Oracle within SQL Plus	222
	- Executing Procedures in Oracle within PLSQL	223
Fifteen	Sub-programming Techniques	224
	- Introduction	225
	- Example	226
	- <i>Exercise Nine</i>	228
Sixteen	Packaging Programmer Defined Programs	231
	- Syntax of Packages in Oracle	232
	- Compiling of Packages in Oracle	237
	- Private Processes in PLSQL Packages	238
	- Executing Packages in Oracle	240
	- Handling Exceptions in Packages in PLSQL	241
	- <i>Exercise Ten</i>	243
Seventeen	DML Triggers in Oracle	244
	- Oracle Triggers Introduction	245
	- DML Triggers Introduction	246
	- DML Triggers Timing Points	248
	- DML Triggers When Conditions	249
	- DML Triggers When Conditions Examples	250
	- DML Triggers Suggested Naming Conventions	252
	- Syntax of DML Triggers in PLSQL	254
	- Referencing Values within Triggers	255
	- Checking the Event which fired the DML Trigger	259
	- Enabling/Disabling Triggers in an Oracle Database	261
	- Metadata for Triggers (User_Triggers)	263
	- Mutating DML Triggers in Oracle	264
	- <i>Exercise Eleven</i>	268
Eighteen	Rowtypes in PLSQL	275
	- Using %Rowtype in PLSQL	276
	- Declaring a Variable as a %Rowtype	277
	- Referencing a %Rowtype Variable	278
	- Populating a Variable which is a %Rowtype	279
	- Passing a %Rowtype between Processes	282
	- Declaring a Cursor %Rowtype	284

Essential PL/SQL for Oracle 9i Index

Nineteen	Advanced Cursors in Oracle 9i	287
	– For Update with Explicit Cursors	288
	– Where Current of Explicit Cursors	289
	– Example of Updating with Explicit Cursors	290
	– Using Nowait with Explicit Cursors	291
	– Using Skip Locked with Explicit Cursors	292
	– Using Wait with an Explicit Cursor	293
	– Using Rowid with Explicit Cursors	294
	– Using Returning Into in PLSQL	295
	– Using Rowtype for DML	298
Twenty	Savepoints in PLSQL	300
	– Using Savepoints in a PLSQL process	301
	– Example of Savepoints in PLSQL process	302
Twenty One	Case Statements and Case Expressions	303
	– Introduction	304
	– Using Searched Case in PLSQL	305
	– Using Case in PLSQL	306
	– Using Nested Case in PLSQL	307
	– Using Case Expressions in PLSQL	310
	– Using Nullif in PLSQL	313
	– Using Coalesce in PLSQL	314
	– <i>Exercise Twelve</i>	315
Twenty Two	File I/O	318
	– Reading and Writing Files in PLSQL	319
	– Simple Write using UTL_FILE.PUT_LINE	321
	– Simple Read Using UTL_FILE.GET_LINE	322
	– Additional Functions in the UTL_FILE Package	323
	– Using UTL_FILE.PUTF in PLSQL	324
	– UTL_FILE Exceptions	326
Twenty Three	Dynamic SQL	328
	– Introduction to Dynamic SQL	329
	– Native Dynamic SQL (NDS) with Execute Immediate	330
	– NDS Error Handling	333
	– NDS with Inputs	334
	– NDS with Output	336
	– Dynamic Cursors and Sys_Refcursor	337
	– NDS with Outputs	339
	– Introduction to DBMS_SQL	340
	– DBMS_SQL Example	341
	– <i>Exercise Thirteen</i>	342
Appendices :		
	Appendix PL1	– SQL Functions
	Appendix PL2	– SQL Line Editor Commands
	Appendix PL3	– SQL Environment Settings
	Appendix PL4	– SQL Column Formats
	Appendix PL5	– SQL Number Formats
	Appendix PL6	– SQL Date Formats
	Appendix PL7	– Compute Formats
	Appendix PL8	– System Exceptions

Delegate Questionnaire