

Essential PL/SQL for Oracle 11g 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-01005:null password given; logon denied	50
	– ORA-12154:TNS:could not resolve the connect identifier	51
	– ORA-01017:invalid username/password	52
	– Exiting an SQL Plus Session	53
	– Using the DOS Window	54
	– Copying and Pasting	55
	– Using the Function Keys	58
	– Using the Line Editor in SQL Plus	59
	– Using the Editor in SQL Plus	60
	– SQL Plus Environment Settings	61
	– File Manipulation in SQL Plus	62
	– Spooling Results in SQL Plus	63
	– Changing Passwords/Clearing the Screen in SQL	64
	– <i>Exercise One</i>	65
Four	Performing Simple DML in PLSQL	67
	– Introduction	68
	– Using Local Variables	69
	– Declaring Variables Using %Type	72
	– Using Substitution Values in PLSQL	76
	– <i>Exercise Two</i>	79
Five	Performing Conditional Statements in PLSQL	81
	– If .. Then Statements	82
	– If .. Then Else Statements	85
	– If .. Then Elself Statements	87

Essential PL/SQL for Oracle 11g Index

	– Combining Tests	88
	– Nesting Conditions	89
	– Boolean Conditions	90
Six	Communicating from PLSQL	91
	– Messaging Via PLSQL	92
	– <i>Exercise Three</i>	97
Seven	Exception Handling	99
	– Introduction	100
	– The When Clause	103
	– The When Others Clause	106
	– Raise_Application_Error	108
	– Oracle Defined Exceptions	112
	– Raising User Defined Exceptions	113
	– Pragma Exceptions in PLSQL	116
	– Grouping Exceptions in PLSQL	120
	– Alternative Way to Handle SQL Errors in PLSQL	121
	– Handling SQL Errors in PLSQL	122
	– Advanced SQLErrm	124
	– <i>Exercise Four</i>	125
Eight	Implicit Cursors	128
	– Using Implicit Cursors in PLSQL	129
	– Using Implicit Cursors to Select Records	131
	– Exceptions in PLSQL	132
	– Attributes of Implicit Cursors	134
	– SQL%FOUND	135
	– SQL%NOTFOUND	136
	– SQL%ROWCOUNT	137
Nine	Sub-Blocking in PLSQL	138
	– Introduction	139
	– Defining	140
	– Re-Raising Exceptions in PLSQL	142
	– <i>Exercise Five</i>	145
Ten	Explicit Cursors	149
	– Using Explicit Cursors in PLSQL	150
	– How Explicit Cursors Work	152
	– Attributes of an Explicit Cursor	155
	– Passing Parameters to Explicit Cursors	158
	– Explicit Cursors Versus Implicit Cursors	161
	– <i>Exercise Six</i>	162
Eleven	Using Sequences in PLSQL 11g	165
Twelve	Loop Processing	168
	– Iterative Processing in PLSQL	169
	– Basic Looping in PLSQL	170
	– While Looping in PLSQL	174
	– For Looping in PLSQL	177
	– Using Dates in For Loops in PLSQL	181
	– Using Characters in For Loops in PLSQL	182
	– Implicit Cursor Looping in PLSQL	183
	– Explicit Cursor Looping in PLSQL	186
	– Using other Loops with Explicit Cursors	188
	– Loop Labels in PLSQL	191
	– Loop Continue and Continue When	193
	– <i>Exercise Seven</i>	197

Essential PL/SQL for Oracle 11g Index

Thirteen	PL/SQL Database Objects	203
	– PLSQL Objects	204
	– Compiling PLSQL Objects	205
	– Metadata For PLSQL Objects	206
	– Re-Compiling PLSQL Objects	207
	– Dropping PLSQL Objects	209
	– Passing Parameters in PLSQL	210
	– Passing Parameters in PLSQL using Positional Notation	211
	– Passing Parameters in PLSQL using Named Notation	213
	– Using Mixed Notation in SQL	214
	– Metadata (User Source)	216
	– Describing PLSQL Objects in SQL*Plus	217
Fourteen	Programmer Defined Functions	218
	– Syntax of Functions in Oracle	219
	– Suggested Naming Convention of Functions in Oracle	222
	– Function Example in PLSQL	222
	– Running Functions in SQL and PLSQL	225
	– Running Functions in Oracle	226
	– <i>Exercise Eight</i>	227
Fifteen	Programmer Defined Procedures	231
	– Syntax of Procedures in Oracle	232
	– Example of Procedures in Oracle	234
	– Executing Procedures in Oracle within SQL Plus	235
	– Executing Procedures in Oracle within PLSQL	236
Sixteen	Sub-programming Techniques	237
	– Introduction	238
	– Example	239
	– <i>Exercise Nine</i>	241
Seventeen	Packaging Programmer Defined Programs	244
	– Syntax of Packages in Oracle	245
	– Compiling of Packages in Oracle	250
	– Private Processes in PLSQL Packages	251
	– Executing Packages in Oracle	253
	– Handling Exceptions in Packages in PLSQL	254
	– <i>Exercise Ten</i>	256
Eighteen	DML Triggers in Oracle	257
	– Oracle Triggers Introduction	258
	– DML Triggers Introduction	259
	– DML Triggers Timing Points	261
	– DML Triggers When Conditions	262
	– DML Triggers When Conditions Examples	263
	– DML Triggers Suggested Naming Conventions	265
	– Syntax of DML Triggers in PLSQL	267
	– Referencing Values within Triggers	268
	– Checking the Event which fired the DML Trigger	272
	– Using the Follows syntax to dictate Trigger Firing	274
	– ORA-25022: cannot reference a trigger of a different type	278
	– Using the Disable syntax when Compiling Triggers	279
	– Enabling/Disabling Triggers in an Oracle Database	280
	– Metadata for Triggers (User_Triggers)	282
	– Mutating DML Triggers in Oracle	283

Essential PL/SQL for Oracle 11g Index

	– Exercise Eleven	287
Nineteen	Rowtypes in PLSQL	294
	– Using %Rowtype in PLSQL	295
	– Declaring a Variable as a %Rowtype	296
	– Referencing a %Rowtype Variable	297
	– Populating a Variable which is a %Rowtype	298
	– Passing a %Rowtype between Processes	301
	– Declaring a Cursor %Rowtype	303
Twenty	Advanced Cursors in Oracle 11g	306
	– For Update with Explicit Cursors	307
	– Where Current of Explicit Cursors	308
	– Example of Updating with Explicit Cursors	309
	– Using Nowait with Explicit Cursors	310
	– Using Skip Locked with Explicit Cursors	311
	– Using Wait with an Explicit Cursor	312
	– Using Rowid with Explicit Cursors	313
	– Using Returning Into in PLSQL	314
	– Using Rowtype for DML	317
Twenty One	Savepoints in PLSQL	319
	– Using Savepoints in a PLSQL process	320
	– Example of Savepoints in PLSQL process	321
Twenty Two	Case Statements and Case Expressions	322
	– Introduction	323
	– Using Searched Case in PLSQL	324
	– Using Case in PLSQL	325
	– Using Nested Case in PLSQL	326
	– Using Case Expressions in PLSQL	328
	– Using Nullif in PLSQL	332
	– Using Coalesce in PLSQL	333
	– Exercise Twelve	334
Twenty Three	File I/O	337
	– Reading and Writing Files in PLSQL	338
	– Accessing the File System using Directories	339
	– Creating Directories	340
	– Simple Write using UTL_FILE.PUT_LINE	342
	– Simple Read Using UTL_FILE.GET_LINE	343
	– Additional Functions in the UTL_FILE Package	344
	– Using UTL_FILE.PUTF in PLSQL	345
	– UTL_FILE Exceptions	347
	– Using UTL_FILE to perform Operating System Commands	349
	– Using UTL_FILE.Fcopy in PLSQL	350
	– Using UTL_FILE.Fgetattr in PLSQL	351
	– Using UTL_FILE.Fremove in PLSQL	352
	– Using UTL_FILE.Frename in PLSQL	353
Twenty Four	Dynamic SQL	354
	– Introduction to Dynamic SQL	355
	– Native Dynamic SQL (NDS) with Execute Immediate	356
	– NDS Error Handling	359
	– NDS with Inputs	360
	– NDS with Output	362
	– Dynamic Cursors and Sys_Refcursor	363
	– NDS with Outputs	365

Essential PL/SQL for Oracle 11g Index

- Introduction to DBMS_SQL	366
- DBMS_SQL Example	367
- <i>Exercise Thirteen</i>	368

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

