



Using SQL with SQL Developer 20.4 Part I

Section	Title	Page
One	Introduction to SQL	2
	- Usage of SQL	3
	- Definition of a Database	5
	- What is SQL Developer ?	6
Two	The SQL Developer Interface	7
	- Introduction	8
	- SQL Developer Connections	10
	- Connections	12
	- Worksheet	13
Three	- Toolbar and Menus	14
	Connections	15
	- Viewing Objects	16
	- Viewing Object Structure	17
	- Table Structure	18
	- Column Structure	20
	- Mandatory Columns	24
	- Data Default	25
	- The Number Datatype	26
	- The Varchar2 Datatype	27
	- The Date Datatype	28
	- Large Objects	29
	- The BLOB Datatype	32
	- The CLOB Datatype	31
- Object Details Dialog	32	
Four	Object Details Dialog	33
	- Introduction	34
	- Columns Tab	35
	- Columns Tab (Resizing columns)	36
	- Columns Tab (Moving columns)	37
	- Columns Tab (Sorting columns)	38
	- Columns Tab (Filter)	39
	- Columns Tab (Icons)	40
	- Columns Tab (Right Click)	41
	- Data Tab	42
	- Data Tab (Single Record View)	43
	- Data Tab (Count Rows)	45
	- Data Tab (Viewing Blobs and Clobs)	46
	- Data Tab (Viewing Blobs)	47
	- Model Tab	49
	- Constraints Tab	52
	- Grants Tab	53
- Statistics Tab	54	
- Triggers Tab	55	
- Flashback Tab	56	
- Dependencies Tab	57	
- Details Tab	58	
- Partitions Tab	59	



Using SQL with SQL Developer 20.4 Part I

Section	Title	Page
	- Indexes Tab	60
	- SQL Tab	61
	- <i>Exercise One</i>	62
Five	Limiting Records in the Data Tab	73
	- Introduction	74
	- Usage	75
	- Using Varchar2 and Dates	76
	- Case Sensitivity	77
	- Limiting Dates	78
	- Invalid Identifier	79
	- Invalid Number	80
	- Direct Comparison	81
	- Value Comparison	83
	- Column Comparison	85
	- Range Comparison	86
	- List Comparison	89
	- Wildcard Comparison	92
	- Null Values	96
	- Combining Filters	97
	- AND Filters	98
	- OR Filters	99
	- Complex Filters	100
	- <i>Exercise Two</i>	101
Six	Ordering Records in the Data Tab	111
	- Ordering Records in the Data Tab – Introduction	112
	- Ordering Records in the Data Tab – Examples	113
Seven	SQL Worksheet	114
	- Introduction	115
	- Opening in SQL Developer	116
	- Creating an SQL Statement	117
	- Executing an SQL Statement	119
	- Formatting the SQL Statement	120
	- SQL Syntax	121
	- Labelling Selected Columns (Column Aliases)	127
	- Using Literals	130
	- Database Variables and Sys.DUAL	128
	- Saving the SQL to a File	130
	- Opening and Executing a File	132
	- Commenting Out Lines	133
	- Identifying Amended Files	135
	- SQL History	136
	- Miscellaneous Commands	137
	- Query Result Buttons	138
	- Find / Highlight	143
	- Searching the Output	144
	- <i>Exercise Three</i>	146



Using SQL with SQL Developer 20.4 Part I

Section	Title	Page
Eight	Manipulating SQL Output	151
	- Introduction	152
	- Functions	153
	- Upper and Lower	156
	- Round	157
	- Ceil and Floor	159
	- Count	160
	- Using '*' in Selections	161
	- Sum	162
	- To_Char	163
	- To_Char (Number Examples)	164
	- To_Char (Date Examples)	166
	- Substr	168
	- Substr Examples	169
	- Decode	170
	- Combining Functions	172
	- Concatenating Columns	173
	- Performing Mathematics	175
Nine	Snippets	177
	- Introduction	178
	- Topography	179
	- Using Snippets with the SQL Worksheet	180
	- Adding User Defined Snippets	183
	- Editing User Defined Category	185
	- Editing User Defined Snippets	187
	- <i>Exercise Four</i>	188
Ten	Limiting Data in the SQL Worksheet	197
	- The Where Clause	198
	- Using Functions within the Where Clause	200
	- Using Lower with a Where Clause	201
	- Using Substr with a Where Clause	202
	- Using NVL with a Where Clause	203
	- Using To_Date with a Where Clause	204
	- Using Trunc with a Where Clause	207
	- Using Trunc with a Number	208
	- Using Trunc with a Date	209
	- Sub-Queries with a Where Clause	210
	- Exists with a Where Clause	212
	- Correlated Sub-Queries	214
	- Table Aliases	215
	- Advanced IN Sub-Queries	216
Eleven	Ordering Data in the SQL Worksheet	218
	- Introduction	219
	- Advanced Techniques	220
	- Using Decode in Order By	222
	- <i>Exercise Five</i>	224



Using SQL with SQL Developer 20.4 Part I

Section	Title	Page
Twelve	Aggregating Values in SQL Worksheet	229
	- Introduction	230
	- ORA-00937: Not a single-group function	231
	- Using Group By	232
	- Using Where with Group By	234
	- Using Having with Group By	236
	- Using Rollup to Total Grouping	238
	- <i>Exercise Six</i>	243
Thirteen	Joining Tables in an SQL Statement	246
	- Introduction	247
	- Linking Tables in an SQL Statement	249
	- Linking Tables using ANSI SQL/86	253
	- Linking Tables in an SQL Statement	254
	- Cartesian Products in an SQL Statement	255
	- Problems with Joining Tables in SQL	257
	- Linking Tables using ANSI SQL/99	260
	- Natural Join using ANSI SQL/99	261
	- Cross Join using ANSI SQL/99	263
	- Join using ANSI SQL/99	264
	- Join On using ANSI SQL/99	265
	- Outer Joins using ANSI SQL/99	266
	- Left Outer Join using ANSI SQL/99	267
	- Right Outer Join using ANSI SQL/99	268
- Full Outer Join using ANSI SQL/99	269	
- Multiple Joins using ANSI SQL/99	270	
	- <i>Exercise Seven</i>	271
Fourteen	Query Builder in the SQL Worksheet	274
	- Introduction	275
	- Invoking Query Builder	276
	- Query Builder Topography	278
	- Selecting Tables	282
	- Checking Links	283
Fifteen	Using Views	284
	- Using Views – Database Views	285
	- Using Views – Materialized Views	286
Sixteen	Merging Tables in an SQL Statement	287
	- Creating Table Sets in SQL	288
	- Using the Merge / Set Syntax in SQL	289
	- Using Union to Merge Tables in SQL	291
	- Using Union All to Merge Tables in SQL	292
	- Using Intersect to Merge Tables in SQL	293
	- Using Intersect All to Merge Tables in SQL	294
	- Using Minus to Merge Tables in SQL	295
	- Using Minus All to Merge Tables in SQL	296
	- Using Except to Merge Tables in SQL	297
	- Using Except All to Merge Tables in SQL	298
	- Using the Merge Syntax in SQL	299



Using SQL with SQL Developer 20.4 Part I

Section	Title	Page
Seventeen	Regular Expressions in Oracle SQL	300
	- Introduction	301
	- Using REGEXP_LIKE in Where Clauses	304
	- Case Sensitivity	306
	- Line Anchors	308
	- Using the Dot (Any Character)	310
	- Counting Characters {Intervals}	314
	- Character Lists	318
	- Excluding Character Lists	324
	- Alternatives to Character Lists	325
	- Class Shorthands	328
	- Or Patterns (Alternatives)	329
	- Or Patterns with Character Lists	330
	- Using the Question Mark (Optional)	331
	- Using the Plus sign (Mandatory)	334
	- Using the Star sign (Optional)	337
	- Backreferencing	338
	- POSIX	340
	- Using POSIX in Oracle - [:upper] example	342
	- Using POSIX in Oracle - [:digit] example	343
	- Using POSIX in Oracle – Character equivalents	344
	- Using Regexp_count in SQL	345
	- Using Regexp_replace in SQL	349
	- Using Regexp_instr in SQL	351
	- Using Regexp_substr in SQL	353
	- Using Regular Expressions in Oracle	355
Eighteen	Exporting Data in SQL Developer	356
	- Introduction	357
	- File Types	359
	- Exporting to CSV	360
	- Exporting to Delimited	362
	- Exporting to Excel	363
	- Exporting to Excel.xml	365
	- Exporting to Fixed	367
	- Exporting to HTML	369
	- Insert	372
	- Json	374
	- Insert	375
	- Loader	376
	- Loader (ldr)	377
	- Loader (ctl)	378
	- PDF	379
	- Text	381
	- XML	383



Using SQL with SQL Developer 20.4 Part I

Section	Title	Page
Nineteen	SQL Developer Help Facility	385
	- Introduction	386
	- Search and Table of Contents	387
	- Start Page	388
	- Data Miner	389
	- Check for Updates	390
	- About	391
	- <i>Exercise Eight</i>	392
Appendices		
	Appendix S1 – SQL Functions	
	Appendix S2 – SQL Number Formats	
	Appendix S3 – SQL Date Formats	
Delegate Questionnaire		