

Essential MariaDB 10

Section	Title	Page
One	Introduction to MySql	2
	– Definition of SQL	3
	– Definition of a Database	4
Two	Database Tables	5
	– Database Views	10
Three	The MySQL Interface	11
	– Introduction	12
	– Interface Keys	13
	– Copying and Pasting	14
	– Help	17
	– Exiting MySQL	18
Four	Simple Queries	19
	– Introduction	20
	– Show Tables	21
	– Show Columns	24
	– Basic interrogation of a Table	26
	– Running existing SQL	31
	– Saving output to a file	32
	– <i>Exercise One</i>	38
	– SQL Syntax	42
	– Displaying Literals in a Select statement	45
	– Displaying Current Date in a Select statement	48
	– Column Aliases	50
	– Ordering Data	54
	– Ordering more than One Column	57
	– Performing Calculations	58
	– Commenting	59
	– <i>Exercise Two</i>	60
Five	Using Functions	66
	– Counting Records in a Table	67
	– Summing Records in a Table	69
	– Highest/Lowest/Average Records in a Table	70
	– Distinct Records in a Table	71
	– Row Functions	72
	– Changing Case	73
	– Length	74
	– Rounding Values	75
	– Substring	77
	– Coalesce	79
	– Ifnull	81
	– Format	82
	– Concat	83
	– Concat_ws	84
– Nesting Functions	85	
– Manipulating Dates using date_add	86	
– Displaying Dates using date_format	88	
– <i>Exercise Three</i>	90	

Essential MariaDB 10

Section	Title	Page
Six	Limiting Data Selected with a Where Clause	95
	– Limiting Data	96
	– Equals	97
	– Not Equals	98
	– Less than / Greater than	99
	– IN	100
	– Between	101
	– Wildcards (Like)	103
	– Column comparison	111
	– Handling Nulls	112
	– Case Restrictions	113
	– Using Functions	114
	– Joining Where Clauses	116
	– Sub-queries using IN	118
	– Sub-queries using more than one column	120
	– Sub-queries using Exists	123
	– Sub-queries using Not Exists	125
	– Sub-queries using other where clauses	126
	– Using Limit	127
	– <i>Exercise Four</i>	130
Seven	Aggregating Values in MySQL	136
	– Introduction	137
	– Group By	138
	– Having	141
	– Using With Rollup to Total Grouping	143
	– <i>Exercise Five</i>	144
Eight	Regular Expressions	148
	– Introduction	149
	– Testing for 'Contains' within a String	150
	– Starts or Ends using Line Anchors	152
	– Starts and Ends using Line Anchors (or)	154
	– Using the Dot (Any Character)	155
	– Using {Intervals}	157
	– Using Character Lists []	159
	– Using Character Lists to exclude matches	162
	– POSIX	163
	– Using the Question Mark (Optional)	165
	– Using the Plus sign (Mandatory)	167
	– Using the Star sign (Optional)	168
	– <i>Exercise Six</i>	169
Nine	Joining Tables in an SQL Statement	171
	– Introduction	172
	– Identifying Columns and its Table	173
	– Cartesian products	175
	– Linking Tables	176
	– Methods of joining tables	178
	– ANSI SQL86	179
	– ANSI SQL99	181
	– ANSI SQL99 (Natural Joins)	182
	– ANSI SQL99 (Cross Joins)	183

Essential MariaDB 10

Section	Title	Page
	- ANSI SQL99 (Using)	184
	- ANSI SQL99 (On)	185
	- ANSI SQL99 (Multiple On)	186
	- ANSI SQL99 Outer Joins	187
	- ANSI SQL99 (Left Outer Joins)	190
	- ANSI SQL99 (Right Outer Joins)	191
	- ANSI SQL99 (Full Outer Joins)	192
	- Merging Tables	193
	- Using Union to Merge Tables	194
	- Using Union All to Merge Tables	195
	- Using Intersect to Merge Tables	196
	- Using Minus to Merge Tables	197
	- Knowledge Check	198
	- Knowledge Check - Union	199
	- Knowledge Check - Union All	200
	- Knowledge Check - Intersect	201
	- Knowledge Check - Minus	202
	- Using the Merge Syntax	203
	- Intersect Syntax	204
	- Minus Syntax	205
	- <i>Exercise Seven</i>	206
Ten	More MySql Query Techniques	211
	- Using If	212
	- Using Ifnull	213
	- Using Nullif	214
	- Using Case Function	215
	- Using Inline SQL	220
	- Using Inline SQL with Select	221
	- Using Correlated Inline SQL with Select	222
	- Using Inline SQL with From	223
	- Using Set to create variables	224
	- Populating a Variable from a Query	225
	- Clearing a User Variable	227
	- <i>Exercise Eight</i>	228
Eleven	MySQL Datatypes	233
	- Introduction	234
	- Numeric Datatypes (Integer)	235
	- Numeric Datatypes (Decimal)	236
	- String Text Datatypes	237
	- String Blob Datatypes	238
	- String List Datatypes	239
	- Date Datatypes	240
Twelve	Creating Database Objects	241
	- Creating Tables	242
	- Mandatory Columns Tables	244
	- Creation Syntax for Tables	245
	- Column Creation	249
	- AUTO_INCREMENT	251
	- Last_insert_id	252
	- Drop Table Syntax	253

Essential MariaDB 10

Section	Title	Page
	- Temporary Tables	254
	- Creating Indexes	256
	- Primary Key Creation	259
	- Primary Key Removal	261
	- Unique Key Creation	262
	- Foreign Key Creation	265
	- On Delete / On Update	267
	- CASCADE	270
	- SET NULL	271
	- NO ACTION	272
	- RESTRICT	273
	- SET DEFAULT	274
	- Creating Views	275
	- Dropping Views	278
	- Renaming Views and Tables	279
	- Listing Views	280
	- <i>Exercise Nine</i>	281
Thirteen	Altering Elements	283
	- Altering Tables	284
Fourteen	Inserting and Altering Data	287
	- Rules	288
	- Syntax for Populating Tables	289
	- Inserting using the Set syntax	295
	- Multiple Inserts	296
	- On Duplicate Key Update	297
	- Using Replace for Inserting Records	298
	- General Comments	301
	- Updating Records Rules	302
	- Updating Data Tables	303
	- Deleting Data	306
	- Truncate	307
	- Inserting Large Objects	308
	- Extracting Large Objects	309
	- Views	310
	- <i>Exercise Ten</i>	314
Fifteen	Prepared Statements	321
	- Introduction	322
	- Preparing the Statement	323
	- Removing Prepared Statements	324
	- Using Parameters	325
Sixteen	Committing Records	327
	- DDL and DML	328
	- Autocommit	330
	- Commit and Rollback	331
	- Transactions	333
	- What happens if disconnected ?	335
	- Savepoints	336

Essential MariaDB 10

Section	Title	Page
Seventeen	Importing and Exporting	340
	– Saving output to a file	341
	– Saving output to Variables	347
	– Importing Data using Infile	348
	– Ignoring Lines using Infile	350
	– Using the Set command with Infile	351
	– Using the Lines option with Infile	354
	– Loading comma separated files	355
	– Loading XML files	357
	– Loading XML files using Ignore	359
	– Loading XML file naming Columns	360
	– Loading XML file using Set	361
	– <i>Exercise Eleven</i>	362
Eighteen	MySQL User Defined Processes	364
	– Delimiter	367
Nineteen	Procedures	369
	– Introduction	370
	– Dropping	371
	– Viewing	372
	– Calling	375
	– Syntax	376
	– Body	377
	– Variables	378
	– Messaging	383
	– Signal	385
	– DML and DDL	389
	– Passing Parameters	392
	– <i>Exercise Twelve</i>	399
	– Conditional Statements	403
	– <i>Exercise Thirteen</i>	413
	– Explicit Cursors	415
	– Looping	422
	– While Looping	423
	– Loop Labels	425
	– Repeat Looping	427
	– Repeat Looping with leave	429
	– Loop	430
	– Loop with Iterate	431
	– Looping Tables	432
	– <i>Exercise Fourteen</i>	436
Twenty	Handler	441
	– Introduction	442
	– Handler Types	443
	– MySQL Error Code	444
	– Error Types	449
	– SQLState	450
	– SQLWarning	452
	– Not Found	453
	– SQLException	454
	– Condition Name	455

Essential MariaDB 10

Section	Title	Page
Twenty One	Functions	456
	– Introduction	457
	– Dropping	458
	– Viewing	459
	– Calling	462
	– Syntax	464
	– Parameters	466
	– Functions without Bodies	467
	– <i>Exercise Fifteen</i>	468
	Twenty Two	Advanced Declaration
– Introduction		473
– Comment		474
– Deterministic		476
– SQL		478
– SQL Security		480
– Language		482
Twenty Three	Triggers	483
	– Introduction	484
	– Dropping	485
	– Viewing	486
	– Suggested Naming Conventions	489
	– Basic Syntax	490
	– Referencing Values	493
	– Follows / Precedes	498
	– Enabling / Disabling	501
	– Problems	504
Twenty Four	Miscellaneous MySQL	508
	– Sleep	509
	– Do	510
	– Events	511
	– Changing Database	523
	– Creating a new Database	525
	– Dropping a Database	526
	– Software Version	527
	– <i>Exercise Sixteen</i>	528

Appendices :

Appendix SQL1	– Date Formats
Appendix SQL2	– String Formats
Appendix SQL3	– Number Functions
Appendix SQL4	– Date Functions

Delegate Questionnaire