

Contents

Acknowledgments. xxxix

Introduction xli

Part I: Access Building Blocks **1**

Chapter 1: An Introduction to Database Development. 3

 The Database Terminology of Access4

 Databases4

 Tables5

 Records and fields6

 Values.....6

 Relational Databases7

 Working with multiple tables7

 Knowing why you should create multiple tables.....7

 Access Database Objects and Views8

 Datasheets8

 Queries.....9

 Data-entry and display forms9

 Reports.....10

 Designing the system's objects10

 A Five-Step Design Method10

 Step 1: The overall design — from concept to reality11

 Step 2: Report design13

 Step 3: Data design: What fields are required?14

 Step 4: Table design17

 Step 5: Form design: Input21

 Summary22

Chapter 2: Creating Access Tables 23

 Getting Started with Access 200723

 The Templates section24

 The File menu25

 Creating a Database26

Contents

The Access 2007 Environment	29
The Navigation Pane.....	30
The ribbon	32
Other relevant features of the Access environment	33
Creating a New Table	35
The importance of naming conventions	36
The table design process.....	37
Using the Design ribbon tab	42
Working with fields	43
Creating tblContacts.....	51
AutoNumber fields and Access	51
Completing tblContacts	52
Changing a Table Design	52
Inserting a new field	52
Deleting a field	53
Changing a field location	53
Changing a field name	53
Changing a field size.....	54
Data conversion issues	54
Assigning field properties	55
Understanding tblContacts Field Properties	71
Understanding the Lookup Property window	71
Setting the Primary Key	72
Understanding unique values	73
Choosing a primary key	73
Creating the primary key	74
Creating composite primary keys	74
Indexing Access Tables.....	75
The importance of indexes	76
Multiple-field indexes.....	78
When to index tables	80
Indexing tblContacts	80
Printing a Table Design.....	81
Saving the Completed Table	82
Manipulating Tables in a Database Window	82
Renaming tables	82
Deleting tables	83
Copying tables in a database.....	83
Copying a table to another database	84
Adding Records to a Database Table	85
Understanding the Attachment Data Type	85
Summary	86

Chapter 3: Designing Bulletproof Databases.	87
Data Normalization	89
First normal form	90
Second normal form	92
Third normal form	96
More on anomalies	96
Denormalization	97
Table Relationships.....	98
Connecting the data	99
One-to-one	101
One-to-many	102
Many-to-many	104
Pass-through.....	105
Integrity Rules	106
Understanding Keys	110
Deciding on a primary key	110
Recognizing the benefits of a primary key.....	112
Designating a primary key	113
Creating relationships and enforcing referential integrity	115
Viewing all relationships.....	120
Deleting relationships	121
Application-specific integrity rules	121
Summary	122
Chapter 4: Selecting Data with Queries	123
Understanding Queries	123
What is a query?.....	124
Types of queries	126
Query capabilities.....	127
How recordsets work	128
Creating a Query	128
Using the Query window	130
Navigating the Query Design window	130
Using the Query Design ribbon	130
Using the QBE grid of the Query Design window	131
Selecting Fields	131
Adding a single field	131
Adding multiple fields	132
Displaying the Recordset	134
Working with Fields.....	135
Selecting a field in the QBE grid	135
Changing field order.....	136
Resizing columns in the QBE grid	136
Removing a field.....	137

Contents

Inserting a field.....	137
Providing an alias for the field name.....	137
Showing a field.....	138
Changing the Sort Order	139
Displaying Only Selected Records	141
Understanding selection criteria	141
Entering simple string criteria.....	141
Entering other simple criteria	143
Printing a Query's Recordset.....	144
Saving a Query.....	145
Adding More Than One Table to a Query.....	145
Working with the Table/Query Pane.....	146
The join line	146
Manipulating the Field List window	147
Moving a table	147
Removing a table	147
Adding more tables	147
Adding Fields from More Than One Table	148
Viewing the table names.....	148
Adding multiple fields	149
Understanding Multi-Table Query Limitations	149
Updating limitations.....	150
Overcoming query limitations	151
Creating and Working with Query Joins.....	151
Joining tables	153
Specify the type of join	153
Deleting joins	155
Understanding Table Join Types	156
Inner joins (equi-joins).....	156
Changing join properties	157
Inner and outer joins	158
Creating a Cartesian product	159
Summary	160

Chapter 5: Using Operators and Expressions in Access 161

What Are Operators?	161
Types of operators.....	162
Operator precedence	173
Moving beyond Simple Queries	175
Using query comparison operators.....	176
Understanding complex criteria selection.....	177
Using functions in select queries.....	181
Referencing fields in select queries	181
Entering Single-Value Field Criteria	181
Entering character (Text or Memo) criteria	182
The Like operator and wildcards	183

Specifying non-matching values187
 Entering numeric (Number, Currency, or Counter) criteria.....188
 Entering Yes/No (logic) criteria189
 Entering a criterion for an OLE object190
 Entering Multiple Criteria in One Field190
 Understanding an Or operation190
 Specifying multiple values for a field using the Or operator191
 Using the Or: cell of the QBE pane192
 Using a list of values with the In operator192
 Understanding an And query193
 Specifying a range using the And operator193
 Using the Between...And operator194
 Searching for Null data195
 Entering Criteria in Multiple Fields196
 Using And and Or across fields in a query196
 Specifying And criteria across fields of a query197
 Specifying Or criteria across fields of a query198
 Using And and Or together in different fields199
 A complex query on different lines199
 Creating a New Calculated Field in a Query200
 Summary201

Chapter 6: Working with Datasheet View. 203

Understanding Datasheets203
 The Datasheet Window205
 Moving within a datasheet206
 The Navigation buttons206
 The Datasheet ribbon207
 Opening a Datasheet208
 Entering New Data208
 Saving the record210
 Understanding automatic data-type validation211
 Understanding how properties affect data entry212
 Navigating Records in a Datasheet214
 Moving between records.....214
 Finding a specific value215
 Changing Values in a Datasheet217
 Replacing an existing value manually217
 Changing an existing value217
 Fields that you can't edit.....218
 Using the Undo Feature219
 Copying and Pasting Values219
 Replacing Values.....220
 Adding New Records221
 Deleting Records221

Contents

Displaying Records	222
Changing the field order	222
Changing the field display width	223
Changing the record display height	224
Changing display fonts	225
Displaying cell gridlines and alternate row colors	226
Aligning data in columns	228
Hiding and unhiding columns	228
Freezing columns	229
Saving the changed layout	229
Saving a record	229
Sorting and Filtering Records in a Datasheet	229
Using the QuickSort feature	230
Using Filter by Selection	230
Using Filter by Form	233
Printing Records	233
Printing the datasheet	234
Using the Print Preview window	235
Summary	235
Chapter 7: Creating Basic Access Forms	237
Adding Forms Using the Ribbon	237
Creating a new form	238
Creating a split form	239
Creating a multiple-items form	240
Creating a form using the Form Wizard	241
Creating a datasheet form	242
Creating a blank form	243
Adding Controls	243
Resizing the form area	244
Saving the form	244
Understanding controls	245
The different control types	245
The two ways to add a control	247
Selecting Controls	252
Selecting a single control	253
Selecting multiple controls	253
Deselecting controls	253
Manipulating Controls	254
Resizing a control	254
Sizing controls automatically	255
Moving a control	255
Aligning controls	256
Modifying the appearance of a control	258
Modifying the appearance of multiple controls	259
Grouping controls	259
Deleting a control	260

Attaching a label to a control	260
Copying a control.....	261
Changing the control type	262
Understanding properties.....	262
Displaying the Property Sheet.....	263
Understanding the Property Sheet	264
Changing a control's property setting	264
Summary	267
Chapter 8: Working with Data on Access Forms	269
Using Form View	269
The Form ribbon	271
Navigating between fields.....	272
Moving between records in a form	273
Changing Values in a Form.....	273
Controls that you can't edit.....	274
Working with pictures and OLE objects	274
Memo field data entry.....	276
Date field data entry	276
Using option groups	277
Using combo boxes and list boxes	278
Switching to Datasheet View.....	278
Saving a record	279
Printing a Form	279
Using the Print Preview window.....	280
Working with Form Properties	280
Changing the title bar text with the Caption property.....	281
Creating a bound form	282
Specifying how to view the form.....	282
Eliminating the Record Selector bar	284
Other form properties.....	284
Adding a Form Header or Footer	290
Changing the Layout	291
Changing a control's properties.....	291
Setting the Tab Order	292
Aligning controls	293
Modifying the format of text in a control	293
Creating a Calculated Control	295
Converting a Form to a Report	296
Summary	296
Chapter 9: Presenting Data with Access Reports	297
Understanding Reports.....	297
Understanding report types	297
Distinguishing between reports and forms	300
Understanding the process of creating a report	301

Contents

Creating a Report with Report Wizards	301
Creating a new report	302
Selecting the grouping levels.....	303
Defining the group data	304
Selecting the sort order.....	304
Selecting summary options.....	305
Selecting the layout	306
Choosing the style	307
Opening the report design	307
Using the Print Preview window.....	308
Viewing the Report Design window	310
Printing a Report	310
Saving the Report	311
Starting with a Blank Form.....	311
Layout view	311
Report Design view.....	312
Banded Report Writer Concepts	313
The Report Designer sections	314
Creating a Report from Scratch.....	317
Creating a new report and binding it to a query	319
Defining the report page size and layout.....	320
Placing controls on the report.....	321
Resizing a section	322
Working with text boxes and their attached label controls	324
Changing label and text box control properties	330
Growing and shrinking text box controls	331
Sorting and grouping data	332
Sorting data within groups	333
Adding page breaks	337
Making the Report Presentation Quality	337
Adjusting the Page Header	338
Creating an expression in the group header	339
Changing the picture properties and the Detail section.....	340
Creating a standard page footer	341
Saving your report	343
Summary	343

Part II: Programming Microsoft Access **345**

Chapter 10: VBA Programming Fundamentals 347

Understanding the Limitations of Macros	347
Introducing Visual Basic for Applications	348
Understanding VBA Terminology	349

Migrating from Macros to VBA	351
When to use macros and when to use VBA.....	351
Converting existing macros to VBA.....	352
Using the Command Button Wizard to create VBA code.....	354
Creating VBA Programs	356
Understanding events and event procedures.....	357
Understanding modules	358
Creating a new module.....	360
Understanding VBA Branching Constructs	368
Conditional execution	369
Repetitive Looping	372
Working with Objects and Collections	374
The With statement	375
The For Each statement	376
Using Compiler Directives	377
Access 2007 Options for Developers	379
Editor tab in Options dialog box	379
The Project Properties dialog box	380
Command-line arguments	383
Summary	384
Chapter 11: Mastering VBA Data Types and Procedures	385
The Access VBA Editor	386
Using Variables.....	389
Naming variables	390
Declaring variables	391
Working with Data Types	395
Comparing implicit and explicit variables.....	397
Forcing explicit declaration	399
Using a naming convention	399
Understanding variable scope and lifetime	400
Understanding Subs and Functions	403
Understanding where to create a procedure	404
Calling VBA procedures	404
Creating subs	405
Creating Functions.....	409
Handling parameters	409
Calling a function and passing parameters	411
Creating a Function to Calculate Taxes.....	413
Named arguments	415
Summary	416

Chapter 12: Understanding the Access Event Model 417

- Programming Events 417
 - How do events trigger VBA code? 418
 - Where to trigger event procedures 419
- Common Events 420
- Form Event Procedures 421
 - Primary form events 421
 - Form mouse and keyboard events 423
 - Form data events 423
 - Form PivotTable events 424
 - Form Access Data Project events 425
- Control Event Procedures 426
- Event Order 428
 - Opening a form with an event procedure 431
 - Running an event procedure when closing a form 433
 - Using an event procedure to confirm record deletion 434
 - Using the MsgBox() function 435
- Report Event Procedures 438
 - Running an event procedure as a report opens 438
- Report Section Event Procedures 439
 - Using the Format event 440
- Summary 441

Chapter 13: Using Expressions in Queries and VBA Code 443

- Understanding Expressions 443
 - The parts of an expression 445
 - Creating an expression 448
 - Special identifier operators and expressions 451
 - Special keywords and properties 454
- Understanding Functions 455
 - Using functions in Access 455
 - Types of functions 456
 - Using the DLookUp() function for lookup tables 467
- Summary 469

Chapter 14: Accessing Data with VBA Code 471

- Understanding SQL 471
 - Viewing SQL statements in queries 472
 - An SQL primer 473
- Creating Programs to Update a Table 480
 - Updating fields in a record using ADO 481
 - Updating a calculated field for a record 486
 - Adding a new record 490
 - Deleting a record 491
 - Deleting related records in multiple tables 492
- Summary 495

Chapter 15: Using the VBA Debugging Tools 497

- Testing and Debugging Your Applications498
- Understanding the Sources of Errors499
 - Syntactical errors499
 - Logical errors501
 - Runtime errors501
 - Avoiding errors502
- Using the Module Options504
 - Auto Syntax Check504
 - Break on All Errors504
 - Require Variable Declaration505
 - Compile on Demand505
 - Auto List Members505
 - Auto Quick Info505
 - Auto Data Tips506
- Compiling VBA Code506
- Traditional Debugging Techniques508
 - Using MsgBox.....508
 - Using compiler directives509
 - Using Debug.Print511
- Using the Access Debugging Tools512
 - Getting to know the Immediate window.....512
 - Running code with the Immediate window512
 - Suspending execution with breakpoints513
 - Stepping through statements515
 - Using the Locals window517
 - Setting watches.....518
 - Using conditional watches520
 - Using the Call Stack window521
- Summary522

Part III: More Advanced Access Techniques 523

Chapter 16: Working with External Data 525

- Access and External Data526
 - Types of external data526
 - Methods of working with external data.....526
- Linking External Data.....529
 - Linking to external database tables530
 - Limitations of linked data532
 - Linking to other Access database tables533
 - Linking to ODBC data sources536
 - Linking to dBASE databases (tables)536
 - Linking to Paradox tables537

Contents

Linking to non-database data	537
Splitting an Access database	542
Working with Linked Tables.....	543
Setting view properties	543
Setting relationships	544
Optimizing linked tables	544
Deleting a linked table reference.....	544
Viewing or changing information for linked tables	545
Using Code to Link Tables in Access	546
The Connect and SourceTableName properties.....	546
Checking links	552
Summary	554
Chapter 17: Importing and Exporting Data	555
Types of Imports and Exports.....	555
Importing External Data.....	557
Importing from another Access database	557
Importing spreadsheet data	558
Importing a SharePoint list	561
Importing text file data	561
Importing an XML document	569
Importing an HTML document.....	570
Importing Access objects other than tables	571
Importing an Outlook folder	572
Importing through ODBC drivers.....	572
Importing non-Access, PC-based database tables	574
Troubleshooting import errors	576
Exporting to External Formats	577
Exporting objects to other Access databases	577
Exporting through ODBC drivers.....	578
Functionality exclusive to exports.....	579
Summary	580
Chapter 18: Advanced Access Query Techniques.	581
Using Calculated Fields	581
Finding the Number of Records in a Table or Query	585
Finding the Top (n) Records in a Query	585
How Queries Save Field Selections.....	587
Hiding (not showing) fields	587
Renaming fields in queries	588
Hiding and unhiding columns in Design View	589
Setting Query Properties.....	589
Creating Queries That Calculate Totals.....	592
Query Wizard summaries	592
Aggregate queries in Design View	593
Grand totals in aggregates.....	595

Subtotals in aggregates	595
Filtering aggregates with criteria	597
Crosstab Queries	599
Duplicate and Unmatched Queries	601
Find Duplicates Query Wizard	601
Find Unmatched Query Wizard	603
SQL-Specific Queries	604
Creating union queries	604
Creating pass-through queries	607
Creating data definition queries	608
Creating SQL subqueries in an Access query	608
Action Queries	609
Types of action queries	609
Viewing the results of an action query	610
Action queries cannot be reversed	611
Creating Action Queries	611
Troubleshooting action queries	615
Summary	616

Chapter 19: Advanced Access Form Techniques 617

Setting Control Properties	617
Customizing default properties	619
Manipulating controls at runtime	620
Reading control properties	623
Working with Subforms	624
Form Design Techniques	626
Using the Tab Stop property	626
Tallying check boxes	626
Adding animation	627
Using SQL for a faster refresh	628
Selecting data for overtyping	628
Toggling properties with Not	629
Creating an auto-closing form	629
Combo box techniques	630
Determining whether a form is open	631
Advanced Forms Techniques	632
Page Number and Date/Time controls	632
Image control	633
Control “morphing”	634
Format Painter	635
Offering more end-user help	635
Adding background pictures	636
Form events	638
Using the Tab Control	638
Using Dialog Boxes to Collect Information	641
Composing the SQL statement	643
Adding a default button	644

Contents

Setting a Cancel button.....	645
Removing the control menu	645
Closing the form.....	645
Summary	646
Chapter 20: Advanced Access Report Techniques	647
Hide Repeating Information	648
Alphabetically Group Data	650
Group on Date Intervals.....	654
Create Numbered Lists.....	655
Add Bullet Characters.....	658
Add Emphasis at Runtime	660
Hide a Page Header	662
Avoid Empty Reports	663
Start a New Page Number for Each Group	664
Avoid Null Values in a Tabular Report	664
Add More Information to Report	665
Add the User's Name to a Bound Report.....	666
Add Vertical Lines between Columns	666
Add a Blank Line Every <i>n</i> Records	668
Even-Odd Page Printing.....	670
Display All Reports in a Combo Box.....	672
Use Different Formats in the Same Text Box.....	674
Fast Printing from Queried Data.....	674
Hide Forms during Print Preview	675
A Few Quick Report Tips	676
Center the title	676
Easily align control labels	676
Micro-adjust controls	676
Always assign unique names to controls	677
Use Snaking Columns in a Report	677
Exploiting Two-Pass Report Processing.....	682
Summary	684
Chapter 21: Building Multiuser Applications	685
Network Issues.....	686
Network performance.....	686
File location	686
Data sources	688
Special network situations	689
Database Open Options	690
Splitting Databases for Network Access	692
Where to put which objects	696
Using the Database Splitter add-in	696
Locking Issues	698
Access's built-in record-locking features	699
Default Open Mode	701

Number of Update Retries	701
Update Retry Interval	701
Refresh Interval	701
ODBC Refresh Interval	702
Record-Lock Error Handling	702
A function to handle lock errors	703
Error 3260: Couldn't update; currently locked by user	705
Error 3186: Couldn't save; currently locked by user x on machine y	709
What about Error 3188?	711
Error: 3197: Data has changed; operation stopped	712
Using Unbound Forms in Multiuser Environments	714
Creating an unbound form	715
Making it work	716
The Tag property	716
The form Open event	716
Moving through records	718
Editing data	720
Summary	722
Chapter 22: Integrating Access with Other Applications.	723
Using Automation to Integrate with Office	724
Creating Automation references	724
Creating an instance of an Automation object.....	727
Getting an existing object instance	728
Working with Automation objects	729
Closing an instance of an Automation object	730
An Automation Example Using Word.....	730
Creating an instance of a Word object.....	735
Making the instance of Word visible	736
Creating a new document based on an existing template	736
Using Bookmarks to insert data	736
Activating the instance of Word	737
Moving the cursor in Word.....	737
Closing the instance of the Word object	737
Inserting pictures by using bookmarks	737
Using Office's Macro Recorder	738
Collecting Data with Outlook 2007	740
Creating an e-mail	740
Managing replies	743
Summary	747
Chapter 23: Integrating Access with SharePoint	749
What Is SharePoint?	749
What is SharePoint Services technology?	750
What is a SharePoint Portal Server?	750
SharePoint Applications: Types of Web Sites.....	751
What Is a SharePoint List?	754

Contents

Introducing a SharePoint Services Web Site	754
Integrating Access 2007 and SharePoint	758
Sourcing data from a SharePoint Services Web site	759
Sourcing data from an Access database	764
SharePoint and Different Operating Systems	766
SharePoint Lists as External Data	767
Summary	768
Chapter 24: Using ActiveX Controls.	769
Understanding Objects.....	769
Looking at the types of objects	770
Using bound and unbound objects.....	770
Linking and embedding	771
Embedding Objects	772
Embedding an unbound object	773
Embedding bound objects	777
Adding a bound OLE object	777
Adding a picture to a bound object frame.....	778
Editing an embedded object	779
Linking Objects	780
Creating a Graph or Chart	782
The different ways to create a graph	782
Creating graphs using the Toolbox	783
Embedding a Graph in a Form.....	783
Assembling the data	783
Adding the graph to the form	784
Customizing a graph	791
Integration with Microsoft Office	792
Checking the spelling of one or more fields and records.....	792
Using OLE automation with Office.....	793
Creating an Excel-type PivotTable.....	793
Summary	799
Chapter 25: Handling Errors and Exceptions	801
Dealing with Errors	801
Logical errors	802
Runtime errors	802
Which Errors Can Be Detected?	806
What is an error handle?.....	806
Setting a basic error trap	807
Trapping Errors with VBA	808
The Error event	809
The ADO Errors collection	810
The Err object.....	812
VBA Error statement variations.....	813
Summary	820

Part IV: Professional Database Development 821

Chapter 26: Optimizing Access Applications 823

- Understanding Module Load on Demand.....823
 - Organizing your modules824
 - Access 2007 prunes the call tree824
- Using the Access 2007 Database File Format826
- Distributing .accde Files828
- Understanding the Compiled State829
 - Putting your application's code into a compiled state830
 - Losing the compiled state831
 - Distributing applications in a compiled or uncompiled state832
- Improving Absolute Speed836
 - Opening a database exclusively836
 - Compacting a database837
 - Tuning your system838
 - Getting the most from your tables838
 - Getting the most from your queries840
 - Getting the most from your forms and reports842
 - Getting the most from your modules844
 - Increasing Network performance849
- Improving Perceived Speed849
 - Using a splash screen849
 - Loading and keeping forms hidden851
 - Using the hourglass851
 - Using the built-in progress meter851
 - Creating a progress meter with a pop-up form853
 - Speeding up the progress meter display855
- Working with Large Program Databases in Access 2007856
 - How databases grow in size856
 - Compiling and compacting may not be enough857
 - Rebooting gives you a clean memory map857
 - Fixing a single corrupt form by removing the record source857
 - Creating a new database and importing all objects858
 - Using the decompile option in Access 2007858
 - Recapping the six steps to large database success859
 - Detecting an uncompiled database and automatically recompiling860
 - Making small changes to large databases — Export861
- Summary862

Chapter 27: Advanced Data Access with VBA 863

- Adding an Unbound Combo Box863
- Using the FindRecord Method865
- Using the Bookmark to Locate a Record867

Contents

Filtering a Form Using Code	869
Using a Query to Filter a Form Interactively.....	871
Creating a parameter query	871
Creating an interactive dialog box.....	874
Linking the dialog box to another form	875
Summary	876
Chapter 28: Bulletproofing Access Applications	877
What Is Bulletproofing?	878
Characteristics of Bulletproof Applications	878
Bulletproofing Goes Beyond Code	879
Document the code you write.....	880
Build to a specification	880
Document the application	880
Use professional installation tools.....	881
Provide the Access runtime module to users.....	882
Consider the user's skill and training requirements.....	882
Understand the user's motivations	884
Check for obvious hardware errors.....	884
Continue to improve the product	885
Principles of Bulletproofing	885
Make the application easy to start.....	886
Use startup options.....	886
Use a login form	889
Use a splash screen	890
Add switchboards to the application.....	891
Control the ribbons	891
Hide the Navigation Pane and remove menus.....	892
Display one form at a time	893
Trap unwanted keystrokes	893
Build bulletproof forms	893
Validate user input	894
Keep the user informed	894
Maintain usage logs	894
Develop to a Specification	895
Securing the Environment	897
Setting Startup Options in Code.....	897
Disable Startup Bypass	898
Setting property values	900
Getting property values	901
Providing User Feedback	902
Creating and using a progress meter	905
Adding Logging to Applications	906
Summary	908

Chapter 29: Securing Access Applications	909
Understanding Jet Security	909
Understanding workgroup files	910
Understanding permissions	910
Understanding security limitations	911
Choosing a Security Level to Implement	912
Creating a Database Password	912
Using the /runtime Option	915
Using the Current Database Options	917
Using the Jet User-Level Security Model	919
Enabling security	920
Working with workgroups	921
Working with users	921
Working with groups	925
Securing objects by using permissions	929
Using the Access Security Wizard	934
Encrypting/Encoding a Database	942
Decrypting/Decoding a Database	943
Protecting Visual Basic Code	944
Preventing Virus Infections.....	945
Enabling sandbox mode	946
The Trust Center.....	948
Summary	949
Chapter 30: Using the Windows API	951
What Is the Windows API?.....	951
Dynamic linking.....	952
Why Use the Windows API?.....	952
Common codebase	953
Tested and proven code	953
Cross-platform compatibility	953
Smaller application footprint	953
DLL Documentation.....	953
Where to find documentation.....	954
Deciphering the documentation	954
Data types.....	954
What you can't do with the API	957
How to Use the Windows API	958
The Declare statement	958
Using wrapper functions	961
What is this "hwnd" thing?.....	962
API Examples	962
Retrieving system information	964
General-purpose Windows API functions	972

Contents

Manipulating application settings with the Windows API	975
Controlling applications with the Registry	980
Summary	986

Chapter 31: Using the Access Replication Features 987

Understanding Replication	988
A Replication Demonstration	990
Creating the database	990
Changing the replica	993
Replication Pros and Cons	995
Introducing the Access Replication Tools	996
Using Access menus	997
Replicating through VBA and DAO	997
Creating a Replica Set	997
Using Access replication menus	998
Programmatic replication	998
Understanding Database Security in Replication Sets	998
The Importance of Local Objects	999
Resolving Replication Conflicts	1000
Design errors	1000
Synchronization conflicts	1001
Manual conflict resolution	1002
Synchronization errors	1003
Replication Topologies	1004
Replication from the Developer's Perspective	1005
Understanding the Changes to Database Objects	1005
Globally unique ID	1005
New system tables	1006
New fields	1009
Changes to AutoNumber fields	1010
Changes to the Design Master Structure	1011
Changes to data	1011
Controlling replica creation	1011
Things to avoid	1013
Programming Replication	1014
Keeping objects local	1014
Converting a database to a Design Master	1017
Making new replicas	1021
Synchronizing replicas	1022
Replication properties	1023
Moving the Design Master	1023
Scheduling synchronization events	1024
Partial Replicas	1025
Using the Partial Replica Wizard	1026
Choosing the type of replica	1029
Programming partial replication with VBA	1029

Advanced Replication Considerations.....	1035
Summary	1036
Chapter 32: Object-Oriented Programming with VBA	1037
Benefits of Object-Oriented Programming	1038
Object basics	1039
Class module basics	1040
A simple class module	1042
Adding a class module to a database.....	1043
Creating simple product properties.....	1044
Creating methods	1045
Using the product object	1046
Create bulletproof property procedures	1049
Other Advantages of Object-Oriented Programming Techniques	1050
Object-Oriented Programming Rules	1053
Never reveal a user interface component, such as a message box, from a class module.....	1053
Preserve the class's interface as the class is updated.....	1053
Using Property Procedures	1054
Persisting property values.....	1055
Property Let syntax.....	1056
Property Set syntax.....	1056
Property Get syntax	1057
Property procedure rules	1057
Extending the Product Class.....	1059
Retrieving product details.....	1059
The new ProductID property	1060
A new property.....	1062
Product Methods	1063
Class Events	1065
The Class_Initialize event procedure	1065
The Class_Terminate event procedure	1066
Adding Events to Class Modules	1067
An Access events primer.....	1068
The need for events	1068
Creating custom events.....	1069
Raising events.....	1070
Trapping custom events	1071
Passing data through events	1073
Exploiting Access class module events	1073
Access forms are objects	1076
Summary	1077
Chapter 33: Reusing VBA Code with Libraries	1079
What Are Libraries?	1080
Traditional Access programming.....	1081
Sharing code between applications	1081

Contents

Access library basics	1082
Access 2007 library database references	1082
Creating Library Databases	1085
Create the objects and write the functions	1085
Save as .accde	1086
Load the database as a library	1087
Debugging Library Databases	1087
Library Database Object References	1087
Summary	1088

Chapter 34: Customizing Access Ribbons 1089

Why Replace Toolbars and Menus?	1090
New controls for Access ribbons	1092
SplitButton	1092
DropDown	1092
Gallery	1093
SuperTips	1094
Working with the Access 2007 Ribbon	1095
Tabs	1095
Groups	1096
Controls	1096
Managing the ribbon	1096
Working with the Quick Access Toolbar	1097
Access 2007 Ribbons: The Developer's Perspective	1098
The ribbon creation process	1098
Using VBA callbacks	1098
The Ribbon Hierarchy	1100
Getting Started with Access 2007 Ribbons	1100
Step 1: Design the ribbon and build the XML	1101
Step 2: Write the callback routines	1101
Step 3: Create the USysRibbons table	1103
Step 4: Add XML to USysRibbons	1104
Step 5: Specify the custom ribbon property	1106
The Basic Ribbon XML	1106
Adding Ribbon Controls	1107
Label control	1108
Separator	1108
Check boxes	1109
DropDown control	1110
Using Visual Web Developer 2005	1112
Managing Ribbons	1114
Completely Removing the Access 2007 Ribbon	1115
Summary	1116

Chapter 35: Distributing Access Applications	1117
Defining the Current Database Options	1118
Application Options	1119
Navigation Options	1121
Toolbar Options	1123
Testing the Application before Distribution	1124
Polishing Your Application	1126
Giving your application a consistent look and feel	1126
Adding common professional components	1127
Bulletproofing an Application	1130
Using error trapping on all Visual Basic procedures	1130
Separating the tables from the rest of the application	1131
Documenting the application	1132
Creating a Help system	1132
Implementing a security structure	1132
Summary	1132
Chapter 36: Using Access Macros	1133
Understanding Macros	1133
The Hello World macro	1134
Assign a macro to an event	1136
Multiaction Macros.....	1137
Running multiple action queries.....	1138
Macro Names	1140
Opening forms	1140
Using Conditions	1143
Opening reports using conditions.....	1143
Multiple actions in conditions	1146
Using Temporary Variables	1146
Enhanced Hello World macro.....	1147
Enhanced reporting macro	1148
Using temporary variables in VBA	1150
Handling Errors and Debugging Macros.....	1151
The OnError action	1153
The MacroError object	1155
Debugging macros	1156
Embedded Macros	1157
Macros versus VBA Statements	1159
Converting existing macros to VBA.....	1160
Summary	1162

Part V: Access as an Enterprise Platform 1163

Chapter 37: Using XML in Access 2007 1165

Introducing HTML and XML1165
 What is HTML?1166
 What is XML?1167
 What is a DOM?1171
 Formatting and transforming XSL(T)1171
 Sharing data using XML1175
 Some really advanced XML stuff1176
 XML as a database1177
 DAO, ADO, ADO.Net, Access 2007, and XML1179
 Summary1190

Chapter 38: SharePoint as a Data Source 1191

Building Access Interfaces with SharePoint.....1192
 Copying from Access to SharePoint1193
 Building an Access form using SharePoint data.....1196
 Building an Access report using SharePoint data.....1198
SharePoint Application Types1200
 Tracking applications1201
 Collaborative applications and databases1206
Microsoft SharePoint Designer 2007.....1207
 Summary1208

Chapter 39: Client/Server Concepts 1209

The Parts of Client/Server Architecture1209
 Applications1211
 The back office1212
Multitier Architecture1217
 Two-tier systems1217
 Three-tier systems1218
What Is an OLTP Database?1218
Access, Client/Server, and Multiple Tiers1219
 Where does Access 2007 fit?1219
 Summary1222

Chapter 40: SQL Server as an Access Companion 1223

Connecting to SQL Server1225
 What is a listener?1225
 What is a connection string?.....1225
 Connecting to SQL Server from Access.....1227
 SQL Server security1236

Working with SQL Server Objects from Access	1239
Using SQL Server tables from Access	1239
Views in SQL Server	1243
Stored procedures, functions, and triggers	1245
Summary	1248
Chapter 41: Upsizing Access Databases to SQL Server.	1249
Upsizing Access and the Upsizing Wizard	1250
Before upsizing an application	1251
Running the Upsizing Wizard.....	1252
Working with an Access ADP file	1257
Comparing Access 2007 to SQL Server data types	1259
Summary	1264
Part VI: Appendixes	1265
<hr/>	
Appendix A: Access 2007 Specifications	1267
Appendix B: What's on the CD-ROM	1275
Appendix C: What's New in Access 2007	1279
Index	1291
Wiley Publishing, Inc. End-User License Agreement	1362