INDEX

Symbols & Numbers

& (concatenation) operator, 129
/ (integer division) operator, 129
^ (power) operator, 130
1NF (first normal form), 566–567, 568
2NF (second normal form), 567, 569
2013Team.accdb file, 698
3NF (third normal form), 567, 569–570
32-bit Office versions, 611–613
4NF (fourth normal form), 568
5NF (fifth normal form), 568
64-bit Office versions, 611–613

Abs() function, 141
.accdb files, 5, 6
   converting .mdb files to, 768–769
   linking files to, 572–576
Access 2013
   vs. Access 2010, 11
   deprecated components, 4–11
   new components, 12–13
Access apps. See also web apps
   deploying, 772–777
   maintaining, 786–791
   user-level security, 764–772
Access client
   connecting to web apps, 401–412
   controls without web app counterparts, 109
   security, 482, 509–513
   templates
      linking to, 467

storing in document libraries, 450–462
Access Data Projects, 5
Access SQL, 581–582
Access Template Library, 449
Account page, backstage, 58–59
ACE database engine, 566, 572, 578
ACM Server, 13
Action Bar, 93–96
   custom action button properties, 93–94
   default action buttons, 94–95
action buttons
   custom, 95–96
   default, 94–95
Action Catalog, Macro Designer, 150, 151, 153, 162
action queries, 125
Active Directory (AD), 766
Adhoc environment, 779–780
.adp files, 5
After Delete table event, 158
After Insert table event, 158
After Update table event, 158, 169, 283
aggregate queries, 126
AJAX (Asynchronous JavaScript And XML), 309, 311, 348
Allow Zero Length property, 10
anonymous access, 492–494
ANSI specifications, 130
Any type, 624
API.txt Create and Manage an Explorer
   Window file, 613–617
API.txt Tip_Nulls file, 622
API.txt Tip_SustainablePointer file, 624
API32-64.txt Private Sub VBA7 file, 612–613

APIs (Application Programming Interfaces), 608–609
  declaring functions, 617–619
documentation, 609
Explorer window example, 613–617
  handers, 611
  mapping data types, 609–610
  pointers, 611
App Catalogs, 16–18, 450–451
app packages
  customizing, 463–467
  inter-site portability, 551
  linking to Access template files, 467
app stores, 14
app web, 15
app web sandbox, 15
appdb.xml file, 545–547, 551
Append query, 576, 580
appendTo() function, 356
application layer security, 484–485
Application Programming Interfaces. See APIs
appmanifest.xml file, 545–547, 551
apps
  Access apps. See Access apps
  Apps for Office, 14–15
  Apps for SharePoint, 14, 15–16
web apps, See web apps
Apps for Office, 14–15
Apps for SharePoint, 14, 15–16
Asynchronous JavaScript And XML (AJAX), 309, 311, 348
Attachment control, 109, 656
AU (auto-updater) tool, 775–776
Audit and Control Management Server. See ACM Server
audit tables, 301–303
audit trails, 769–772
  data macros and, 627–628
  vs. differential backups, 478–479
authentication, 18–19
auto-updater (AU) tool, 775–776
AutoComplete control, 104–105
automation, 719–720
declaring/instantiating variables, 721–722
early vs. late binding, 722–724
Office applications
  Excel, 725–737
  Outlook, 749–759
  PowerPoint, 744–749
  Word, 737–744
PKZip, 759–762
AutoNumber data type, 33–36, 38
availability, 798–799
back end
  data refresh cycles, 780–781
deploying file changes, 776–777
environments, switching between, 781–784
SQL Server as, 807–820
  Catalog Views, 817
  SSMS, 807–814
  stored procedures, 815–816
  triggers, 817
troubleshooting, 817–820
user-defined functions, 816–817
views, 814–815
backstage, 55–59
backups
  database solutions, 786–789
differential (See differential backups)
  managing, 560–561
SQL Server databases, 810–811
batch files, auto-updating front-end files, 776
BCNF (Boyce Codd Normal Form), 568
BE. See back end
BeforeUpdate event, 193
binding reports to passthrough queries, 409
bit data type, 38, 188
Blank view, 54
  default buttons, 94–95
  resizing, 91
blank web apps, creating, 26–27
block macro actions, 160
bootstrapper, 10
Bound Object Frame control, 655
Boyce Codd Normal Form (BCNF), 568
breadcrumb navigation, 50
breakpoints, 596–597
buffered strings, 623
bulk operations, 125
Button control, 99
ByRef, 623
Byte data type, 182
ByVal, 623

C
mapping data types, 609–610
passing nulls, 622
structs, 610–611
C++
  handlers, 611
  mapping data types, 609–610
  passing nulls, 622
  pointers, 611
  structs, 610–611
Calculated data type, 38, 190–191, 197–200
calculated fields
  functions/expressions, 146–147
to support indexing, 628–631
Call Level Interface (CLI), 573
callback function, 619
camelCase, 353
CancelRecordChange macro action, 161
carriage returns, 39
Cartesian product joins, 602–603
cascade deletes, 296
CAST() data types, 582
Cast() function, 132–133
Catalog Views, 817
cboAddress object, GeoName class, 391
CDate() function, 578
Ceiling() function, 129, 142
certencoded() function, 535
certprivatekey() function, 535
ChangeView macro action, 167, 169–170, 171
CharIndex() function, 136
Chart API, 363–371
Chart control, 109
check-constraint violations, 625
Checkbox control, 99–100
checksum, 777
CLI (Call Level Interface), 573
click event handlers, creating for query by views, 261–263
client database connections, 401–412
  best practices, 409–412
  VBA code to relink, 406–409
  security, 509–513
cloning records, 270–278
Close page, backstage, 58
ClosePopup macro action, 167
closing databases, 58
Cloud App Model, 3. See also apps
Coalesce() function, 134
Code Playground, 366–367
Collect Data via Email feature, 8
combined navigation, 51
combo boxes
  Combobox control, 98–99
    in forms, 656–657
command buttons, 649
Comment macro action, 161, 162, 164, 167
comments, adding to macros, 162
complex queries, 600–601
Concat() function, 129, 136, 191, 197–198
concatenation, 190, 197–200
concatenation (&) operator, 129
confidentiality statements, 711
configuration tables, 199–200
connecting to web apps
  using Excel, 412–430
  using SSMS, 430–446
    adding linked servers, 433–437
    getting connection details, 401
    managing, 399–400, 430–433
    querying data in linked servers, 437–442
    using linked server objects, 442–446
    using the Access client, 401–412
constants, 131–132
consuming web services
  using web browser control, 362–371
  ZIP code lookups, 371–394
controls, 96
  AutoComplete, 104–105
  Button, 99
client controls not available in Access web apps, 109
Combox, 98–99
common properties, 108–109
Image, 101
Label, 96–97
placement, manipulating, 88–92
Related Items, 105–107
Subview, 102
Textbox, 97–98, 647–648
Web Browser, 102–103, 110–114
copying and pasting macro actions, 155–156
related queries, 602
crashes, 622
Create, Read, Update, Delete (CRUD) view, 205
CreateRecord macro action, 161, 166, 275–277, 288–289, 292–293, 637–638
CRUD (create, read, update and delete) operations, 266
CRUD (Create, Read, Update, Delete) view, 205
Currency constant, 131
Currency data type, 38, 187–188
custom action buttons
adding, 94
customizing, 96
properties, 93–94
Customize Quick Access Toolbar pane, 6
Customize the Ribbon pane, 6–7

D

Data Connection Wizard, 412–415
data macros, 157, 624–625. See also freestanding macros; UI macros
Action Catalog, 162
adding actions, 162
architecture, 158–159
block macro actions, 160
changes since Access 2010, 159
client vs. web macros, 625–626
context, 158–159
creating, 628–640
DeleteRecord, 161, 166, 167, 626
EditRecord, 161, 166, 167, 626, 637, 641
filter tables, clearing selections, 249
ForEachRecord, 161, 165–166, 267, 626, 629, 633, 636–639
LookupRecord161, 165
parameters, 172–173
passing parameters, 155
standalone, 157, 158–159, 162, 172
tracing, 154–155
use cases, 626–628
using with UI macros, 172–175
VBA, accessing, 640–641
when to use, 266–267
data sources
ACE database engine, 566, 572, 578
creating tables from, 31–36
DSN-less linking, 514–515
normalization, 566–570
ODBC linking, 573–576
primary key fields, 570–571
SharePoint lists as, 41–42
data types. See also specific types
AutoNumber, 33–36, 38
Calculated, 38, 190–191, 197–200
changes from previous versions, 38–40
constants, 131–132
Currency, 38, 187–188
Date/Time, 38, 40, 183–187
Hyperlink, 38, 39, 188–189
Image, 38, 40, 189–190
Long Text, 38–39, 178–182
Lookup, 40, 191–193
mapping, 609–610
Short Text, 38–39, 178–182
SQL Server types, 812–814
Yes/No, 38, 188
Database Compare, 12–13
database diagrams, 811
database solutions
debugging, 596–597
deploying, 772–777
intellectual property rights, 791–792
maintaining, 786
automating maintenance, 789–791
backups, 786–789
different environments, 778–786
shutting down solutions, 791
trial solutions, 792–794
user-level security, 764–772
databases
  closing, 58
  deploying solutions, 772–777
  Maid To Order. See Maid To Order app
  opening, 57–58
  saving, 58
Datasheet view, 37, 54, 230–236
  controls supported, 76
  default buttons, 94–95
  filter limitations, 232–236
  filtered lists in drop-downs, 231–232
  search forms, creating, 657–660
DataSources.txt Access SQL file, 581
DataSources.txt Append Query file, 580
DataSources.txt Convert T-SQL data to
  Access date file, 578
DataSources.txt Convert T-SQL date to
  Access date II file, 579
DataSources.txt Convert T-SQL to Access
date in T-SQL file, 579
DataSources.txt Delete Object file, 580
DataSources.txt Delete query file, 580
DataSources.txt Import spec in VBA file,
  577
DataSources.txt Make Table Query file, 579
DataSources.txt Saved Import Export in
  VBA file, 577
DataTable() function, 366
date and time functions, 139–141
Date constant, 131
date data type, 38
date limits, 805–806
Date/Time data type, 38, 40, 183–187
DateAdd() function, 139–140, 284–285
DateDiff() function, 140, 285
DateFromParts() function, 135
DatePart() function, 140, 261–262
datetime2 data type, 38
DateWithTime constant, 131
DateWithTimeFromParts() function, 135
Day constant, 132, 139
Day() function, 139, 140–141
DayOfYear constant, 132
decimal data type, 38
default action buttons, 94–95
Delete table event, 296
DeleteRecord action, 161, 166, 167, 626
delimiters, 129
Deploy_Maintain.txt Batch file to
  Copy FE file, 776
Deploy_Maintain.txt Call Audit
  Trail file, 771
Deploy_Maintain.txt Call MDA file, 790
Deploy_Maintain.txt CaptureAuditTrail
  file, 770–771
Deploy_Maintain.txt Change Textbox
  BackColor based on Textbox value file,
  782–783
Deploy_Maintain.txt Copy Compact Repair
  file, 787–788
Deploy_Maintain.txt pf_FindFolder file,
  783–784
Deploy_Maintain.txt pf_FindName file, 784
Deploy_Maintain.txt pf_FindPath file, 783
Deploy_Maintain.txt Remote Query file, 772
Deploy_Maintain.txt Trial - Number of
  records file, 793
Deploy_Maintain.txt Trial - Timed file,
  793
deploying database solutions, 772–773
  auto-updating front-end files, 775–776
  deploying back-end changes, 776–777
  deploying front-end files, 773–775
deploying web apps, 540
  app catalogs, 540–541
  on-premises SharePoint server, 541–551
  upgrading and maintaining apps, 559–561
  versioning apps, 551–561
design patterns, navigation
  breadcrumb, 50
  combined, 51
drop-down menus, 51
faceted searches, 51
fly-out menus, 51
footer, 51
navigation bars, 47–48
search, 48–50
tabbed, 50
tag clouds, 50
DEV (Development) environment, 778
Dev Ashish, 782
Developer Subscription, 558
Development (DEV) environment, 778
dialog forms, 652
differential backups, 468–471
vs. audit trails, 478–479
insert and update queries, 471–477
using transactions, 478
VBA module for running, 477–478
distributed query transactions, 445–446
distributing web apps, 16–18
document libraries
configuring version control, 460–462
creating custom content types, 452–455
creating libraries, 450–452
customizing libraries, 456–457
customizing ribbon, 458–460
importing image files, 455–456
Double data type, 182, 183
dragging and dropping macro actions, 155–156
drawChart() function, 365–366
drilling down reports, 698–699
drop-down lists, 231–232
drop-down menus, 51
DSN-less connections, 406–407, 514–515
duplicate View, 92–93
duplicating views, 92–93
e-commerce, PayPal buttons, adding, 333
adding the HTML, 339–340
allowing framing of custom page, 338–339
authoring custom pages, 336–338
getting the HTML, 333–336
showing buttons on web apps, 340–341
e-mail, collecting data via, 8
early binding, 722–724
EditRecord macro block, 161, 166, 167, 626, 637, 641
Else If macro block, 164
embedded
data macros, 157, 159
queries, 119–120
UI macros, 157, 159
encryption, 515–516
administrator tasks, 531–532
creating SharePoint lists, 516–524
storing passwords in SharePoint lists, 524–531
enterprise environments
app packages, customizing, 463–467
document libraries
configuring version control, 460–462
creating, 450–452
creating custom content types, 452–455
customizing libraries, 456–457
customizing library ribbon, 458–460
importing image files, 455–456
synchronizing data between app databases, 468–479
template files, linking to, 467
EnumChildWindows function, 617, 618, 619, 620, 620su
environments, 778–786
EOMonth() function, 141
Eqv operator, 130
Err object, 623
error handling, 591–596
and data macros, 267
ErrorHandling.txt Private Sub cmdFoo_Click 2 file, 593
ErrorHandling.txt Private Sub cmdFoo_Click 3 file, 594
ErrorHandling.txt Private Sub cmdFoo_Click 4 file, 595
ErrorHandling.txt Private Sub cmdFoo_Click 1 file, 592
ETL (extract, transform, load), 576
Excel

automation, 725–737
importing data from, 31–36
object library, 728
object model, 721–722, 728
ODC connections
  creating connections, 412–415
  creating PivotCharts, 416–420
  creating PivotTables, 420–421
  creating tables, 415–416
  managing, 421–424
  sharing workbooks, 425–430
Exists operator, 130
Exists() function, 634
Exists() subquery, 601–602
ExitForEachRecord macro action, 161
Exp() function, 142
explicit trust, 19
Explorer window, creating, 613–617
Expression Builder, 153–154
expressions
  availability by context, 146–147
  constants, 131–132
  delimiters, 129
  Expression Builder, 153–154
  functions. See functions
  operators, 129–131
  sargability and, 226
external data sources. See data sources
ExternalReader users, 484, 509, 513, 533
ExternalWriter users, 484, 509, 512–513,
  524–525, 533
extract, transform, load (ETL), 576

F

faceted searches, 51
False constant, 131
FE. See front-end (FE) environments
Field List, 79–84
field-level validation rules, 193–195
fields. See also data types
  FK (foreign key), 566, 567, 569
  PK (primary key), 566, 567, 570–571
  properties, 40–41
fifth normal form (5NF), 568
file-based security, 482
Filter by Form, 659
filtering
  Datasheet views, 230–236
  query by views, 237
    building click event handlers,
      261–263
    cascading parameters, 242–243
    clearing selections, 249
    creating, 249–252
    creating filter tables, 244, 248–249
    creating filtering queries, 252–257
    design requirements, 246–248
    displaying filter results, 260–261
    enabling/disabling parameters,
      241–242
    handling large numbers of parameters,
      244–246
    making parameters optional, 241
    optional joins, 242
    populating filter tables, 257–260
    SQL construction, 237–241
first normal form (1NF), 566–567, 568
fixed-point numbers, 38, 183
FK (foreign key) fields, 566, 567, 569
flags, 624
Float constant, 131
float data type, 38, 183
floating-point numbers, 38, 183
Floor() function, 129, 142
fly-out menus, 51
footer navigation, 51
ForEachRecord macro block, 161, 165–166, 267,
  626, 629, 633, 636–639
foreign key (FK) fields, 566, 567, 569
Format() function, 134–135, 185–187
forms
  adding web browser controls, 410–412
  creating, 644–645
    attachment fields, 656
    combo boxes, 656–657
    command buttons, 649
data sheet search forms, 657–660
dialog forms, 652
fourth normal form (4NF) – Hyperlink data type

- labels, 648–649
- layout considerations, 645
- lists, 656–657
- modal forms, 652
- pop-up forms, 652
- split forms, 650–651
- Tag property, 653–654
- textboxes, 647–648
- user considerations, 645–647

frmDemo forms, 653–656

- images, displaying, 654–656
- index forms, 208–209, 219
  - Datasheet view, 230–237
  - List view, 219–223
  - Summary view, 223–230
- multiple instances, opening, 660–663
- MVFs (multi-value fields), 663–668
- PDF forms, filling out, 712–715
- query by forms, 209–210
- Report Runner, 668–685
- split forms, 650–651
- switchboards, 206–208

fourth normal form (4NF), 568

freestanding macros, 270

- cloning records, 270–278
- deleting records, 294–296
- generating a set of records with variable parameters, 278–290
- generating records in different tables, 290–294
- updating records, 294–296

frmAutomation form, 724

frmDemoComboBox form, 656

frmDemoImage form, 655

frmDemoTagReadOnly form, 653–654

frmdemoTagRequiredData form, 653–654

frmSource object, GeoName class, 391

front-end (FE) environments
  - auto-updating files, 775–776
  - deploying files, 773–775
  - user access, 767

frustrated joins, 599–600

functions. See also specific functions
  - availability by context, 146–147
  - constants, 131–132
  - data type inspection/conversion functions, 132–135
  - date and time, 139–141
  - incompatible with T-SQL, 806-807
  - math, 141–145
  - optional arguments, 586
  - program flow, 145
  - SQL aggregate, 145
  - string, 135–139
  - table-valued, 117–118
  - user-defined, 586–591, 816–817

g

GeoName class, 373–394

GetClassName function, 619–620

GetDesktopWindow function, 617–618

GetLastError function, 623

GetWindowPlacement function, 621

Google
  - Chart API, 363–371
  - Code Playground, 366–367
  - Drive, 787

google.load() function, 365

GoToControl macro action, 167

GoToRecord macro action, 167

Group macro action, 161, 164–165, 167

- grouping
  - report data, 700–701, 702
  - tiles, 213

- guided searches, 51

h

handers, 611

hash sum, 777

hiding tiles, 77

history of change, 301–303

horizontal navigation bars, 47–48

hosting web apps, 15–16

Hour constant, 132

Hyperlink control, 100–101

Hyperlink data type, 38, 39, 188–189
If macro action, 161, 162–164, 167
If...Then macro block, 155, 160
If...Then...Else macro block, 162–164
If/Then macro action, 274, 276–278, 284–285
Iframes, web browser control security, 113–114
Iff() function, 191, 197–198
Image control, 101, 655–656
Image data type, 38, 40, 189–190
Immediate window, VBE, 596
Imp operator, 130
In operator, 130
In() function, 130, 634
index forms, 219
Datasheet view, 230–237
List view, 219–223
Summary view, 223–230
Info Backstage, 398–399
enabling/disabling connections, 400
getting connection details, 401
managing connections, 399–400
resetting passwords, 401
Info page, backstage, 56–57
initializing local variables, 269–270
inlining web apps, 322–333
Inno Setup, 10
InstallShield, 10
instantiation, 721–722
int data type, 38, 182
Integer constant, 131
Integer data type, 182
integer division (/) operator, 129
integrated solutions, 306–307
security considerations, 307–310
web services, 310–311
Location Mapper app, 311–322
using APIs with a web browser control, 362–371
ZIP code lookup, 371–394
intellectual property rights (IPR), 791–792
internal-facing apps, distributing, 16–18
interoperability, 717–718
IPR (intellectual property rights), 791–792
ISO_Week constant, 132

J–K

J Street Technology, 782
JavaScript
building pages to handle, 363–366
vs. VBA, 350–352
Jet 3.x files, deprecation, 7
Jet Replication, 6
joins
Cartesian product, 602–603
frustrated, 599
optional, 242
jQuery
adding image elements, 353–357
installing to team site, 348–350
KPI (Key Performance Indicators)
Google's Chart API, 363–371

L

Label control, 96–97
Label Text property, 41
Label Wizard, 694–696
Language page, backstage, 59
late binding, 722–724
layout. See also navigation; UI; views
mobile devices, 60–65
new approach to, 51–54
Left() function, 136–137
Len() function, 137
Like operator, 130
licensing, 558–559
links
linked views, 213
managing linked objects, 576–579
mapping, 213–214
ODBC, 573–576
SharePoint lists, 41–42
template files, 467
list pane
List view, 53
search navigation, 49
Summary view, 54
List view, 37, 53
default buttons, 94–95
Design tab, ribbon, 75–76
search field, designing, 222
Listbox control, 109
lists, SharePoint
  linking, 41–42
  setting up, 516–524
  storing passwords in, 524–531
lngOrdinalPositions() array, 376
local differential backups. See differential backups
local variables, initializing, 269–270
Locals window, VBE, 597
Location Mapper app, 311
  adding to websites, 312–315
  configuring, 315–322
  selecting, 311–312
Location Mapper Plus, 312, 322–326
Log() function, 142–143
Log10() function, 142–143
LogEvent macro action, 638
logins, Office 365, 27–29
Long Integer data type, 182
Long Text data type, 38–39
  in client forms, 178–179
  in client tables, 179
  Enter key behavior, 39, 178–179, 181
  lengths, 39, 179
  in web app tables, 179–181
  in web forms, 181–182
LongText constant, 131
Lookup data type, 40, 191–193
lookup data type, 40
Lookup Wizard, 191–193
LookupRecord data block, 161, 165
LookupRecord macro action, 267, 274, 275,
  299–301, 629–630, 639–640
LowerCase function, 137
LTrim() function, 137

M

Macro Designer, 152–157
  Action Catalog, 150, 151, 153, 162
data macro tracing, 154–155
expressions, 153–154
interacting with, 155–157
macro links, 155
Parameters box, 155
macros
  copying and pasting, 155–156
data macros, 157. See also specific macros
  Action Catalog, 162
  adding actions, 162
  architecture, 158–159
  block macro actions, 160
  changes since Access 2010, 159
  client vs. web macros, 625–626
  context, 158–159
  creating, 628–640
  filter tables, clearing selections, 249
  parameters, 172–173
  passing parameters, 155
  standalone, 157, 158–159, 162, 172
  tracing, 154–155
  use cases, 266–267, 626–628
  using with UI macros, 172–175
  VBA, accessing, 640–641
dragging and dropping, 155–156
freestanding macros
  cloning records, 270–278
  deleting records, 294–296
  generating records in different tables, 290–294
  generating records with variable parameters, 278–290
  updating records, 294–296
need for web-compatible language, 150–151
UI macros, 157, 166–168. See also specific macros
  and validating data, 197
  architecture, 159–160
  block macro actions, 160
  data entry operations, 172
  return values, 174–175
  standalone, 157, 159–160
  using with data macros, 172–175
  when to use, 268–269
Maid To Order app, 24
Access template file, linking to, 467
adding to app catalog, 543–545, 547–551
app catalog, 450
app package, customizing, 463–467
charts, rendering, 363–371
document library, creating, 450–462
field-level validation, 193–195
inter-site portability, 551
linking web apps, 311–322
mobile devices support, 61–65
PayPal button, adding, 333–341
record-level validation, 195
records
cloning, 270–278
deleting, 294–296
generating in different tables, 290–294
generating with variable parameters, 278–290
updating, 294–296
site mailbox, adding, 341–362
synchronizing data between web app
databases, 468–479
version control, 545–547
versioning, 551–561
ZIP code lookup web services, 371–394
Make Table query, 579–580
Marketplace, 16
math functions, 141–145
.mdb files, 5, 6, 7
converting to .accdb files, 768–769
Members SharePoint group, 484, 491, 501, 502
menus
deprecation of, 6
drop-down, 51
fly-out, 51
MessageBox macro action, 167, 174–175
Microsoft SkyDrive, 787
Microsoft Source Code Control
Interface (MSSCCI), 9–10
Millisecond constant, 132
Minute constant, 132
mobile devices, layout, 60–65
modal forms, 652
monetizing web apps, 557–559
Month constant, 132, 140–141
Month() function, 140–141
MSSCCI (Microsoft Source Code
Control Interface), 9–10
multi-value fields. See MVFs
MVDemo.accdb file, 664
MVFs (multi-value fields), 664–668
appending attachments, 665–668
appending MVFs, 664–665
MZ-Tools, 596
naming
freestanding UI macros, 287
tiles, 77–78, 212, 213
web apps, 204
navigation bars, 47–48
Navigation Control control, 109
navigation list
creating from web app tiles, 212–213
design logic, 213
organizing, 211–212
navigation, web apps, 46, 206
breadcrumb navigation, 50
combined navigation, 50
drop-down menus, 51
faceted searches, 51
fly-out menus, 51
footer navigation, 51
index forms, 208–209, 219
Datasheet view, 230–237
List view, 219–223
Summary view, 223–230
layout, new approach to, 51–54
navigation bars, 47–48
query by forms, 209–211
search navigation, 48–50
switchboards, 206–208
tabbed navigation, 50
tag clouds, 50
.NET Framework, 800
New page, backstage, 57

833
NewRecord macro action – Owners SharePoint group

NewRecord macro action, 167
No constant, 131
normalization, 566–570
Northwind database reports
calling criteria form, 706
for comparing values, 706–708
with flexible groupings, 702–706
grouping data, 700–701
with simple criteria, 701–702
with simple groupings, 702
Nouns, 25
attributes, 30–31
creating tables using, 29–31
Now() function, 141
Null constant, 131
null-terminated strings, 623
Number data type, 39–40, 182–183
nvarchar data type, 38, 39, 179, 181

OAuth, 19
Object Explorer, SSMS, 808, 812
object libraries
Excel, 728
Outlook, 751
PowerPoint, 745
Word, 737
Object Linking and Embedding (OLE) objects,
displaying, 655
object models, 719–722
Excel, 721–722, 728
Outlook, 751
PowerPoint, 745
Word, 738
ODBC (Open Database Connectivity) connections,
573–576. See also connecting to web apps
enabling/disabling, 399–400
getting connecting information, 398–399, 401
importing data from, 31–36
resetting passwords, 401
ODC (Office Data Connection) connections,
412–430
creating connections, 412–415
creating Excel PivotCharts, 416–420
creating Excel PivotTables, 420–421
creating Excel tables, 415–416
managing connections, 421–424
sharing Excel workbooks, 425–430
Office 365
logins, 27–29
managing accounts, 58–59
publishing apps, 554–556
setting up trial accounts, 21–23
Office applications
32-bit vs. 64-bit, 611–613
automating, 724–725
Excel integration, 725–737
Outlook integration, 749–759
PowerPoint integration, 744–749
Word integration, 737–744
Office Data Connection. See ODC
Office Store, 16, 557–559
OLE (Object Linking and Embedding) objects,
displaying, 655
OLE/ActiveX Control control, 109
On Start macro, 269–270
on-premises SharePoint server deployments,
541–551
app catalog, 542–545, 547–551
inter-site portability, 551
tenancy, 541–542
version control, 545–547
Open Database Connectivity. See ODBC
Open page, backstage, 57–58
OpenPopup macro action, 167, 169–171, 271,
280–218, 295
operators, 129–131
Option Group control, 109
optional joins, 242
Options dialog, backstage, 59
Outlook
automation, 749–759
integration, 749–759
object library, 751
object model, 751
Owners SharePoint group, 484,
501, 502
Package Solution, 775
Packaging Wizard, 10
parameterized queries, 117–118, 125–126
parameters, data macros, 155, 172–173
Parse() function, 133
PascalCase, 353
passthrough queries, 409
passwords
resetting, 401
storing in SharePoint lists, 524–531
PayPal button, adding to web apps, 333
adding the HTML, 339–340
allowing framing of custom pages, 338–339
authoring custom pages, 336–338
getting the HTML, 333–336
showing the button, 340–341
PDF forms, filling out, 712–715
PDFDemo.accdb file, 712
PDFDemo.mdb file, 712
performance
SQL Server, 819
table events, 297
Pi() function, 143
PivotCharts, 8, 416–420
PivotTables, 8, 420–421
PK (primary key) fields, 566–567, 570–571
PKZip, automating, 759–762
POC (Proof of Concept) environment, 780
pointers, 611
pop-up forms, 652
popup button properties, 84–88
popup views, 215–216
for Datasheet views, 233
to display filter results, 260–261
for Summary views, 228–230
power (^) operator, 130
Power() function, 143
PowerPoint
automation, 744–749
integration, 744–749
object library, 745
object model, 745
primary key (PK) fields, 570–571
Production (PROD) environment, 779
program flow functions, 145
Proof of Concept environment, 780
properties
controls
AutoComplete, 104–105
Button, 99
Checkbox, 100
Combobox, 98–99
common properties, 108–109
Hyperlink, 100–101
Image, 101
Label, 96–97
Multiline Textbox, 103–104
Related Items, 107
Subview, 102
Textbox, 97–98
Web Browser, 102–103
custom action buttons, 93–94
field properties, 40–41
popup button properties, 84–88
query properties, 127–128
report properties, 689–691
pseudo-random numbers, 143
public web app distribution, 16
QA (Quality Assurance) environment, 779
QBF (Query by Form), 209–210, 604–606
Quality Assurance (QA) environment, 779
Quarter constant, 132
queries
action, 125
aggregate, 126
architecture, 116–118
complex, 600–601
copying manually, 121–123
correlated, 602
creating, 119–120, 606–608
distributed query transactions, 445–446
effective, 579–582
embedded, 119–120
Exists() subquery, 601–602
joins
Cartesian product, 602–603
frustrated, 599
parameterized, 117–118, 125–126
passthrough, 580, 582
binding reports to, 409
performance, and data macros, 627
previewing results, 123–124
properties, 127–128
sargable, 597–598
saving, 119–120
sorting, 116–117
standalone, 120

Query by Form (QBF), 209–210, 604–606
query by views, 237
   click event handlers, 261–263
creating, 249–252
data macros
to clear selections, 249
to populate filter tables, 257–260
design requirements, 246–248
displaying filter results, 260–261
filter tables, creating, 248–249
filtering queries, creating, 252–257
filtering techniques, 241–246
SQL construction, 237–241
Query Designer, changes in, 119–128
query string parameters, 112

Radio Button control, 109
RaiseError macro action, 161, 289, 298, 639–640
Rand() function, 143
RDBMS (relational database management systems)
   FK (foreign key) fields, 566, 567, 569
   normalization, 566–570
   PK (primary key) fields, 566–567, 570–571
read-only access, 484, 493–494. See also
ExternalReader users
read-write access, 484. See also ExternalWriter
users
record limited previews, 793
record-level validation rules, 195
records
   cloning, 270–278
deleting, 166, 294–296
editing, 166
generating
   in different tables, 290–294
   with variable parameters, 278–280
lookups, 165
looping through, 165–166
preventing deletions, 298–300
requerying, 171
supplemental, 628, 631–640
updating, 294–296
recordsources
   available for views, 77–78
   queries as, 629, 638–640
Rectangle control, 109
Reddick VBA convention, 204
referential integrity, 192–193
refresh cycles, 780–781
Related Items control, 105–107
relational database management systems. See
RDBMS
reliability, 798–799
Replace() function, 138
replace() function, 354–355
Replicate() function, 138
Replication ID data type, 182
Report Runner, 668
creating foundation, 668–669
running reports, 673–684
setting up criteria fields, 669–673
Report Wizard, 694
ReportExamples.accdb file, 700, 706, 707
ReportExamplesNW.accdb file, 700
reports, 688–689
binding to passthrough queries, 409
calling criteria forms from, 706
confidentiality statements, 711
creating
  calculated fields, 692–693
drilling down, 698–700
Label Wizard, 694–696
layout view, 691–692
properties, 689–691
Report Wizard, 694
subreports, 696–698
date, 711
for comparing values, 706–708
with flexible groupings, 702–706
for grouping data, 700–701
headers and footers
  properties, 691
  repeating criteria, 709–710
  showing group headers and footers, 702-703
name, 711
page numbers, 711
PDF forms, filling out, 712
with simple criteria, 701–702
with simple groupings, 702
temporary tables, 711
work tables, 711
RequeryRecords macro action, 167, 171
restoring SQL Server databases, 808–810
reversion control, 785–786
revoking permissions, 492
ribbon, 55–59
  backstage, 55–59
  view design surface, 75–76
Right() function, 136–137
Round() function, 129, 143–144
rowversion data type, 11
RTrim() function, 137
RunDataMacro macro action, 161, 167, 173–174, 268, 278, 281, 626, 630
RunMacro macro action, 167, 175
S
Sagekey, 775
sargability, and expressions, 226
sargable queries, 597–598
Save As page, backstage, 58
Save page, backstage, 58
SaveRecord macro action, 167
saving
  queries, 119–120
  records, 167
  web apps, 58
search
  faceted, 51
  guided, 51
  navigation, 48–50
Second constant, 132
second normal form (2NF), 567, 569
security, 18–19
  agent-based, 482–483
  in the application layer, 484–485
  client databases, 509–513
  client solutions, 509–513
  file-based, 482
  front-end .accde file, 513–514
    DSN-less connections, 514–515
    linked servers, 532–536
    password storage, 515–532
  Office 365 trial accounts, setting up, 21–23
  SharePoint security, 485–486
    access types, 484
    adding users, 487–489
    anonymous access, 492–494
    deleting users, 490
    editing users, 490
    extending permissions, 490–491
    external connections, 484
    external user accounts, 491–492
    personal storage, 486
    securable objects, 485–486
    team sites, 486
user groups, 483–484
SharePoint sites, setting up, 20–21
user-level, 764–772
Web Browser control, 113–114
SetField macro action, 161, 166, 275–276, 288, 292–293, 641
SetLocalVar macro action, 161, 163–164, 173
SetProperty macro action, 167, 168–169
SetReturnVar macro action, 161, 174
setup.exe file, 10
SetVariable macro action, 167, 174, 269–270
SetWindowPlacement function, 621
SharePoint
  App Catalogs, 16–18
  lists
    importing data from, 31–36
    linking to, 41–42
    setting up, 516–524
    storing passwords in, 524–531
  security
    access types, 484
    adding users, 487–489
    anonymous access, 492–494
    deleting users, 490
    editing users, 490
    extending permissions, 490–491
    external connections, 484
    external user accounts, 491–492
    personal storage, 486
    securable objects, 485–486
    team sites, 486
    user groups, 483–484
  workflows, deprecation of, 8–9
SharePoint Designer
  custom content types, creating, 452–455
  downloading, 326
  image files, importing, 455–456
  libraries, customizing, 456–458
  library ribbon, customizing, 458–460
  sharing web apps, 69–70
Shell function, 613
Short Text data type, 38–39
  in client forms, 178–179
  in client tables, 179
  Enter key behavior, 39, 178–179, 181
  lengths, 39, 179
  in web app tables, 179–181
  in web forms, 181–182
ShortText constant, 131
Sign() function, 145
Single data type, 182, 183
site mailbox, adding to web apps, 341–342
requirements, 342
setting up, 343–347
as a shared tool, 347–362
SkyDrive, 787
Solutions Mapper
  adding, 311–315
  configuring, 315–322
  sorting queries, 116–117
  source code control, 9–10
  splash screens, creating, 216–219
  split forms, 650–651
  splitter bar, split forms, 651
  SQL aggregate functions, 145
  SQL injection, 237–238
  SQL Native Client 11.0 driver, 401–402, 407, 413–414
SQL Server
  as back end, 807–820
    Catalog Views, 817
    SSMS, 807–814
    stored procedures, 815–816
    triggers, 817
    troubleshooting, 817–820
    user-defined functions, 816–817
    views, 814–815
  backing up databases, 810–811
  data types, 38, 812–814
database diagrams, 811
importing data from, 31–36
restoring databases, 808–810
tables, 811–812
troubleshooting, 817–820
upsizing to, 795–807
  process, 802–805
  things to watch for, 805–807
  when to upsize, 796–802
  versions, 799–800
  views, 116–117, 814–815
SQL Server Azure, 800
SQL Server Enterprise, 800
SQL Server Express (SSE), 799–800
SQL Server Management Studio. See SSMS
SQL Server Migration Assistant for Access (SSMA), 10–11
Sqrt() function, 145
SSE (SQL Server Express), 799–800
SSMA (SQL Server Migration Assistant for Access), 10–11
SSMS (SQL Server Management Studio), 807–814
  connections to web app databases, 430–433
    adding linked servers, 433–437
    getting connection details, 401
    managing, 399–400
    querying data in linked servers, 437–442
    using linked server objects, 442–446
Object Explorer, 808, 812
standalone
  data macros, 157, 158–159, 162, 172, 266
  queries, 120
  UI macros, 157, 159–160
static URLs, configuring Web Browser control using, 110
StopMacro macro action, 161, 167
stored procedures, 815–816
StrConv() function, 528
string buffers, 623
strings
  CharIndex() function, 136
  Concat() function, 129, 136
  concatenation operator, 129
  delimiters, 129
  Left() function, 136–137
  Len() function, 137
  Lower() function, 137
  LTrim() function, 137–138
  null-terminated, 623
  Replace() function, 138
  Right() function, 136–137
  RTrim() function, 137–138
  Stuff() function, 138–139
  SubString() function, 139
  Substring() function, 139
  Upper() function, 137
structs, 610–611
Stuff() function, 138–139
subreports, 696–698
  Report Wizard, 694
Substring() function, 139
Subview control, 102
Summary view, 54, 223–230
  properties, 88
supplemental records, 628, 631–640
Support environment, 780
surveymonkey.com, 8
sustainable pointers, 623–624
switchboards, 206–208
synchronizing data between web apps, 468–479

T-SQL
  vs. Access SQL, 581–582
    incompatible functions, 806–807
Tab Control control, 109
tabbed navigation, 50
table events, 296–303
  acquiring default values from other tables, 300–301
  BeforeUpdate, 193
  maintaining a history of change, 301–303
  performance considerations, 297
  preventing deletions of completed records, 298–300
  using with default values, 266–267
table-valued functions, 117–118
tables
  audit tables, 301–303
  configuration tables, 199–200
  creating, 29
    Excel tables, 415–416
      from imported data sources, 31–36
      using Nouns, 29–31
      using the traditional method, 36–37
  design requirements, 33–36
  exporting to Excel, 725–727
  SQL Server tables, 811–812
tally tables, 279–280
temporary tables, 577–578, 711
validation rules, 193–197
tag clouds – UI (user interface)

design considerations, 196
editing with existing data, 195–196
field-level, 193–195
record-level, 195
views. See views
tag clouds, 50
tally tables, 199–200
  creating, 279–280
tblCars table, 605–606
tblColors table, 605
tblCrews table, 165
tblCustomers table, 165–166
tblJobs table, 173
tblNewTable table, 665–667
tblOldData table, 665–667
tblOrderDetails table, 630, 639–640
tblOrders table, 629–630
tblReportCriteria table, 668–667
tblReportCriteriaDetail table, 668–669
team site, 65–66, 486
  creating web apps via, 67–69
  jQuery, installing, 348–350
templates, Access client
    backstage and, 55–56
    storing in document libraries, 450–462
temporary tables, 577–578
  and reports, 711
tenancy, 541–542
Test environment, 779
  promoting files to production, 784–785
Text constant, 131
text data types, 38–39, 178–182
Textbox control, 97–98
  in forms, 647–648
third normal form (3NF), 567, 569–570
third-party apps, integrating, 311
  Solutions Mapper
    adding, 311–315
    configuring, 315–322
third-party database file maintenance solutions, 791
third-party error-handling tools, 596
three-click rule, 211
Tile Pane, 50
tile-bound views, 78, 215–216
tiles
  creating navigations lists from, 212–213
  grouping, 213
  hiding, 77, 211
  naming, 76–77, 212, 213
  selecting views for, 77–78
  showing, 77
Time constant, 132
time limited previews, 793
TimeFromParts() function, 135, 259, 261–262
timestamp data type, 11
Today() function, 141
Toggle Bottom control, 109
toolbars, deprecation, 6
Total Access CodeTools, 596
touch screen devices, 60–65
tracing data macros, 154–155
trial database solutions, 792–794
triggers, 817
True constant, 131
Trust Center page, backstage, 59
trusting Web apps, 18–19
Try_Cast() function, 133
Try_Parse() function, 134
TST (Test) environment, 779
txtZIP object, GeoName class, 391–394
type library, 719

U

UAT (User Acceptance Testing) environment, 779
UDP.txt Public Function
  ImportInvoice(strRec, strChr) file, 589
 UDP.txt Public Function pfGroup file, 588
UDFs. See user-defined functions
UDTs (user-defined types), 610–611
UI (user interface)
  design
    CRUD views, 205
    index forms, 219–237
    planning, 205
    popup views, 215–216
    query by views, 237–263
    splash screens, 216–219
tile-bound views, 215–216
web app naming conventions, 204
web design principles, 211–215
mobile devices support, 60–65
web navigation, 46–47
  breadcrumb navigation, 50
  drop-down menus, 51
  faceted searches, 51
  fly-out menus, 51
  layout, new approach to, 51–54
  navigation bars, 47–48
  ribbon, 55–59
  search navigation, 48–50
  tabbed navigation, 50
  tag clouds, 50
UI macros, 157, 166–168. See also data macros;
  freestanding macros
  architecture, 159–160
  block macro actions, 160
  ChangeView, 169–171
  data entry operations, 171–172
  OpenPopup, 169–171
  RequeryRecords, 171
  return values, 174–175
  SetProperty, 168–169
  standalone, 157, 159–160
  using with data macros, 172–175
  and validating data, 197
  when to use, 268–269
ULS (User Level Security), 768–769
Unbound Object Frame control, 655
UndoRecord macro action, 167
upgrading web apps, 559–561
Upper() function, 137
Update operation, 603–604
Upsert operation, 603–604
upsizing to SQL Server, 795–807
  process, 802–805
  things to watch for, 805–807
  when to upsize, 796–802
Upsizing Wizard, 10–11
URLEncode() function, 382
URLs
  binding to table fields, 111
  building dynamically with macro actions, 111–112
  query string parameters, 112
static, configuring Web Browser control, 110
User Acceptance Testing (UAT) environment, 779
user accounts
  external, 491–492
  managing, 486–490
user groups, SharePoint, 483–484
user interface. See UI
user interface macros. See UI macros
User Level Security (ULS), 768–769
user-defined functions, 586–591. See also specific functions
  creating, 587–591
  SQL Server, 816–817
user-defined types (UDTs), 610–611
UserDisplayName() function, 244, 268, 494
UserEmailAddress() function, 244, 249, 250, 252, 257, 259, 268, 494–496
users
  SharePoint users, 486
    adding, 487–489
    anonymous, 492–494
    deleting, 490
    editing, 490
    extending permissions, 490–491
    external, 491–492
    user-level security, 764–772
usys prefix, 200
utility tables, 200
Utter Angel, 782
UtterAccess Code archive, 782
validation rules, 193–197
  data macros and, 625
  design considerations, 196
  editing with existing data, 195–196
  field-level, 193–195
  record-level, 195
varbinary data type, 38, 40, 189, 200
variables
  instantiating, 721–722
  in UI macros, 159
VBA
  accessing from data macros, 640–641

automation, 719–720
declaring/instantiating variables, 721–722
eyear vs. late binding, 722–724
Excel, 727–728
Outlook, 751–759
PowerPoint, 745–749
Word, 737–744
debugging database solutions, 596–597
error handling, 591–596
vs. JavaScript, 350–352
procedures, 586
user-defined functions, 586–591
VBScript, 150–151
version control, 545–547, 785–786
versioning web apps, 551–561
cautions, 554
controlling distribution, 556–557
making apps publicly available, 557–559
Office 365, 556
vertical navigation bars, 47–48
View Selectors, 78–79, 92
views, 37, 53–54. See also specific views
Action Bar, 93–96
controls. See controls
design surface, 74–75
control placement, manipulating, 88–92
Field List, 79–84
linking views, 78–79
popup properties, 84–88
ribbon, 75–76
tiles, 76–78
vs. traditional design view, 74–75
duplicating, 92–93
record sources available, 77–78
SQL Server views, 814–815
tile-bound, 215–216
web app vs. SQL Server, 117
which to use, 54
Visitors SharePoint group, 484, 501, 502–503
Vukovic, Peter, 782

W
Watch window, VBE, 597
web apps. See also Access apps
architecture overview, 13–15
connecting to
using the Access client, 401–412
using Excel, 412–430
using SSMS, 399–401, 430–446
creating
blank apps, 26–27
via team site, 67–69
deleting, 69
deploying, 540
app catalogs, 540–541
on-premises SharePoint server, 541–551
upgrading and maintaining apps, 559–561
versioning apps, 551–561
distributing, 16–18
hosting, 15–16
inlining, 322–333
mobile devices support, 60–65
monetizing, 557–559
naming conventions, 204
opening, 57–58
PayPal button, adding, 333–341
saving, 58
security
agent-based, 482
application layer, 484–485
linked files, 513–536
SharePoint security, 485–494
terminology, 483–484
in the web browser, 494–509
sharing, 69–70
site mailbox, adding, 341–362
synchronizing data, 468–479
templates, 55–56
third-party apps, integrating, 311–322
trusting, 18–19
upgrading, 559–561
versioning, 551–561
cautions, 554
controlling distribution, 556–557
making apps publicly available, 557–559
Office 365, 554–556
web browser controls, 102–103, 110–114
adding to forms, 410–412
binding URLs to table fields, 111
building URLs dynamically with macro actions, 111–112
calling web services, 362–371
query string parameters, 112
security issues, 113–114
static URLs, 110
web services, 310
calling
using web browser control, 362–371
ZIP code lookups, 371–394
requesting data from, 310
returning data from, 310–311
Week constant, 132
Weekday constant, 132
whole numbers, 38, 182
Wix, 10
WizHook.SortStringArray() function, 378, 391
Word
automation, 737–744
object library, 737
object model, 738
work tables, 711
workflows (SharePoint)
  deprecation of, 8–9

X

XML Forms Data Format (XFDF), 713–715
XMLHttpRequest object, 309
Xor operator, 130

Y–Z

Year constant, 132, 140–141
Year() function, 140–141
Yes constant, 131
Yes/No data type, 38, 188
ZIP code lookup web services, 371–394