Index

A

a priori 445
Abox 18
absolute temporal consistency 524
abstract data types 378
abstraction 433
accumulation component 300
accuracy 316
acquisition and implementation 581
action execution 2
active
databases systems (aDBMSs) 1
integrity constraints 345, 348
server page 185
Adaptation phase 90
adorned program Pb, an 563
advanced planning systems (APS) 601
agent markup language 723
agentification 551
aggregate query 615
aggregates 11
aggregation 179
algebraic transformations 11
algorithm(s) 88, 102, 474, 487, 500
alphanumeric databases 408
alter the code 174
anatagogy 147
anonymous request/reply 106
ANSI/SPARC Database Model 78
aperiodic
   pull 107
   push 107
application program interfaces 457
approximate searching 688
array
   storage 519
   type 422
assertion 49
assertional part 18
asymmetric communication 701
asymptotic consistency 556
atomicity property 696
atoms 74
attribute-dimension 310
attributes 607
auditing tools 282
author gender detection 684
authorship attribution 684
automatic
detection 273
documentation 332
automatically composing versions of documents 203
autonomous databases 450
autonomy 494
availability 582

B

background knowledge 666
backup 341
balanced scorecard 395
collaborative 397
band sequential 737
base
   atom 483
      nodes: 155
basic transformations 710
benchmark results 521
benchmarking 23
benign neglect 211
bidirectional line 177
binding occurrence 446
bioinformatics 29
biometric databases 42
bit transposed file model 737
Boolean symbolic objects 667
boundary-line cases 575
bounded 613
brute force checking 67
BSD license 247
business
process component model 398
rule 47
-to-business 54, 206
-to-consumer 206

C

cache-sensitive search trees 342
call-back locking 223
callback model 106
cardinality constraint 607
CASE tools 413, 707
categorical algebra 352
category theory 262, 351
centralized 495
chemical markup language 721
city simulator 25
class
   hierarchy 486
   identification 418
classification level 383
cleaning 240
cluster 549
collaboration protocol 55
commercial off the-shelf 87
common information model (CIM) 78
complete evaluation 469
complex event detection 2
component-based software systems 87
composite data quality assessment 117
computer
   science 466
   -aided design 93, 390, 511
   -assisted passenger prescreening system 207
   -based information technologies 216
   -supported cooperative work 395
concept-based retrieval 391
conceptual
   design of databases 250
   modeling 378
   schema 59, 708
conceptualism 434, 435
concurrency control 343
protocols 153
condition evaluation 2
confidentiality 582
policy 383
connectivity 89
constant interaction 154
constraint(s) 421, 564
containers 88
content management technologies 160
context
   dependencies 192
   -aware 715
contextual
   information 552
   quality 281
contextualization 150
cooperative work 160
countermeasure transaction model 555, 696
course 536
covert channel secure 304
cross-sentence 588
cultural innovations 172
customer relationship management (CRM) 213, 601
cyclic association rules 196

d

data
   analysis process 665
   and reality 435
capture and data integration interface 737
cleansing 315, 594
consistency 163
dissemination 105
exchange 287
extraction 287
flow diagrams 415
form 116
guard 167
integration 730
loading phase 90
mining 395, 665
   algorithm 737
   interface 737
   suites 317
modeling 594
profiling 594
replication 159
source 121
standards 596
streams 199
structures 88
sublanguage alpha 624
transmission 163
visualization 31
database
   consistency 66
disaster 556
management systems 5, 127, 304, 341, 652
repairs 483
replication management 153
schemas 159
datalog 483
dataveillance 170
datawarehouse 395
DBS querying framework 495
decentralized 495
<table>
<thead>
<tr>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>decision support system 281, 395</td>
</tr>
<tr>
<td>declarative knowledge 333</td>
</tr>
<tr>
<td>decoupled subsystem approach 66</td>
</tr>
<tr>
<td>delivery and support 581</td>
</tr>
<tr>
<td>density-dimension 310</td>
</tr>
<tr>
<td>derivation structure 140</td>
</tr>
<tr>
<td>derived atom 483</td>
</tr>
<tr>
<td>description logics (DL) 18, 336</td>
</tr>
<tr>
<td>descriptive properties 675</td>
</tr>
<tr>
<td>differential evaluation 469</td>
</tr>
<tr>
<td>digital</td>
</tr>
<tr>
<td>libraries 201, 542</td>
</tr>
<tr>
<td>media warehouses (dmws) 191</td>
</tr>
<tr>
<td>direct-access-scope 113</td>
</tr>
<tr>
<td>dirty read anomaly, the 695</td>
</tr>
<tr>
<td>discursive effects 172</td>
</tr>
<tr>
<td>disjunction 562</td>
</tr>
<tr>
<td>disjunctive 483</td>
</tr>
<tr>
<td>datalog 536</td>
</tr>
<tr>
<td>distributed Ptree management interface 737</td>
</tr>
<tr>
<td>document</td>
</tr>
<tr>
<td>imaging 294</td>
</tr>
<tr>
<td>management 293</td>
</tr>
<tr>
<td>object model 658</td>
</tr>
<tr>
<td>domain 100</td>
</tr>
<tr>
<td>rules 48</td>
</tr>
<tr>
<td>dominance 383</td>
</tr>
<tr>
<td>dornment step 563</td>
</tr>
<tr>
<td>DRDBMS 343</td>
</tr>
<tr>
<td>dynamic</td>
</tr>
<tr>
<td>behavior 445</td>
</tr>
<tr>
<td>logic programming 345</td>
</tr>
<tr>
<td>management 548</td>
</tr>
<tr>
<td>re-grouping 470</td>
</tr>
<tr>
<td>e</td>
</tr>
<tr>
<td>e-government 206</td>
</tr>
<tr>
<td>e-index 473</td>
</tr>
<tr>
<td>e-mail data stores 211</td>
</tr>
<tr>
<td>e-voting 207</td>
</tr>
<tr>
<td>ease</td>
</tr>
<tr>
<td>of disaster recovery 556</td>
</tr>
<tr>
<td>of failure 556</td>
</tr>
<tr>
<td>edit</td>
</tr>
<tr>
<td>distance 688</td>
</tr>
<tr>
<td>scripts 658</td>
</tr>
<tr>
<td>electronic</td>
</tr>
<tr>
<td>commerce 603</td>
</tr>
<tr>
<td>data interchange 721</td>
</tr>
<tr>
<td>product code 715</td>
</tr>
<tr>
<td>element-at-a-time 258</td>
</tr>
<tr>
<td>elementary set 575</td>
</tr>
<tr>
<td>end-user license agreement 249</td>
</tr>
<tr>
<td>enterprise</td>
</tr>
<tr>
<td>application integration 229</td>
</tr>
<tr>
<td>resource</td>
</tr>
<tr>
<td>management (ERP) 212</td>
</tr>
<tr>
<td>planning 292</td>
</tr>
<tr>
<td>systems (ERP) 601</td>
</tr>
<tr>
<td>entity</td>
</tr>
<tr>
<td>type(s) 607, 710</td>
</tr>
<tr>
<td>-based query 615</td>
</tr>
<tr>
<td>-dimension 310</td>
</tr>
<tr>
<td>-relation model 378</td>
</tr>
<tr>
<td>-relationship diagram 530</td>
</tr>
<tr>
<td>model 103, 434</td>
</tr>
<tr>
<td>episodic knowledge 334</td>
</tr>
<tr>
<td>eposition 473</td>
</tr>
<tr>
<td>equivalence 102</td>
</tr>
<tr>
<td>ER modeling 135</td>
</tr>
<tr>
<td>erroneous 315</td>
</tr>
<tr>
<td>event</td>
</tr>
<tr>
<td>type meta-model 6</td>
</tr>
<tr>
<td>-condition-action (ECA) rules 1</td>
</tr>
<tr>
<td>exclusion dependencies 345</td>
</tr>
<tr>
<td>existence time 377</td>
</tr>
<tr>
<td>experimentation component 300</td>
</tr>
<tr>
<td>expert preparations 741</td>
</tr>
<tr>
<td>expertise knowledge 666</td>
</tr>
<tr>
<td>explicate 276</td>
</tr>
<tr>
<td>expression signatures 470</td>
</tr>
<tr>
<td>extended</td>
</tr>
<tr>
<td>datalog program 536</td>
</tr>
<tr>
<td>entity relationship 414</td>
</tr>
<tr>
<td>logic program 538</td>
</tr>
<tr>
<td>extent mapping 662</td>
</tr>
<tr>
<td>external schema 78</td>
</tr>
<tr>
<td>extracting a 414</td>
</tr>
<tr>
<td>extraction 240</td>
</tr>
<tr>
<td>translation, and loading (ETL) process 122</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>face database 42</td>
</tr>
<tr>
<td>federated</td>
</tr>
<tr>
<td>database(s) 286, 450, 451</td>
</tr>
<tr>
<td>management systems 5</td>
</tr>
<tr>
<td>system 286</td>
</tr>
<tr>
<td>information systems 286, 451</td>
</tr>
<tr>
<td>fetch-and-add 160</td>
</tr>
<tr>
<td>filter-based 147</td>
</tr>
<tr>
<td>fingerprint-based authentication 43</td>
</tr>
<tr>
<td>Firebird 247</td>
</tr>
<tr>
<td>first multimedia normal form 411</td>
</tr>
<tr>
<td>first order logic (FOL) 336</td>
</tr>
<tr>
<td>fitness-for-use 282</td>
</tr>
</tbody>
</table>
Index

flexible
  algebra 537
  infrastructures 9
foreign
  key constraint 531
  keys 101
free
  software 246
    foundation 464
    /open source software 457
development 457
frequent life span 198
functional dependencies 345, 409
functionalities 47, 74, 286, 372, 548, 624, 740
fuzzy
  data 250
  functional dependency 251
  multivalued dependency 251
  relational databases 250

G

G-TERD 26
Gait recognition 44
gene expression analysis 36
general
  packet radio service 622
  public license 246, 460
    temporal association rules 195
generalization 180
generalized division 626
generation step 563
generator for time-evolving regional data 26
generic
  design phase 90
  entity-relationship mode 707
    MMt 258, 364, 351
genetic algorithms 31
genomics 36
genre classification 684
geo-object 177
geographic
  data 308
    information system 23, 208, 390, 511, 587
geospatial applications 93
global-as-view 286, 730
globalization 570
gMMt 362
GPL 246
granule 575
grid computing 460
GROLL 305
groupware 398

H

hackers 457
HDM-driven design 186
height of document 660
heterogeneity 287
heterogeneous 258, 450
data types 199
hierarchy 490
high availability 153
higher-level transformations 710
histogram 369
homogeneous 258, 286
  interface technology 231
human-computer interaction 740
hybrid
  ER/GO 378
  OSDBMS 458
hypermedia video links 391

I

IDCM 292
impact assessment 78
implementation
  design subsystem 186
    -oriented 184
in-network query processing 496
inclusion dependencies 345
inconsistency handling 337
inconsistent 315
  data 315
    KDBs 336
incredulity 283
index
  container 89
  iterator 90
indiscernibility relation 575
information
  acquisition 276
  processing system 714
  quality problems 593
  security 581
informational subsumption 588
inProceedings 507
integrated 184
  relational calculus 537
integration broker or IB 78
integrative document and content management 292
integrity 582
  constraints 537
  rules 48
intension mining 298
intermittent presence 494
internal schema 78
Index

International Organization for Standardization (ISO) 216
international outsourcing 570
Internet-scale distributed data 469
interoperability problem 286
intrinsic 458
dimension 368
quality 281
inverted indexes 473
iris recognition 44
item sets 195
iterators 88

J
JAVA-based RDF infrastructure 507
JENA 507

K
k-item-set 197
kernelized architecture 304
Kleisly Operation 352
knowledge
capital 330
databases (KDB) 336
discovery from databases 313
management systems 396
mining 331
workers 330
-creating company 330
Kohonen algorithm 273

L
large
amounts of factual data 447
-scale integration 463
leverage knowledge 330
linear
interaction 154
vector space 117
local-as-view 287
localization 570
LOCUS 27
logic
of evaluation 278
program with exceptions 538
logical
schema 60, 708
doctrines 363
loosely coupled subsystem 66
lost update anomaly, the 695
low isolation levels 695

M
magic-set method 563
main
- memory database management systems 341
-memory-oriented algorithms 18
manufacturing resource planning 229
mapping 414, 596
-at-a-time 258
market basket analysis 199
marketspaces 170
master 549
matching group 627
mathematical expressions 721
maximal
consistent subsets 537
marginal relevance 588
mBroker 165
mediation 286
merge component 300
merging 111
by majority 537
metadata 258, 506
extraction 75
repository 122, 594
metric
database 366
range query 367
micro-electro-mechanical systems 716
minable view 315
minimal
models 346
orthogonal bounding rectangle 512
minimum support 198
mining component 300
MLS/DBMS 304
MMDBMS 343
mobile
agents 701
databases 701
environment 701
multimedia database management system 622
nodes 155
phones 162
modal symbolic objects 667
model
management 258
mapping 258, 351
semantics 346
-driven transformation 62
modeling stage 314
modelling modifications as attributes and storing 203
modellum 276
Index

modification step 563
MOLAP 135
Monet XML 661
monitoring 581
  component 301
monolithic database 286
morphisms 262
moving
  objects 377
  databases 23
Mozilla Public license 247
multi-
  agent systems 587
  aspect Data 117
  databases 159
  document Summarization systems 587
  participative decision systems 395
  threaded system 249
multidimensional
  discrete data (MDD) 517
  join 12
  OLAP 130
multilevel security 383
multimedia
  database
    management system 619
    querying 252
databases 408
  information systems 511
multivalued attributes 374
MultiView system 490
MySQL 247

N

nearest neighbor method 31
network
  connectivity 163
  relationships 180
neural networks 31, 272
new indexing techniques 11
nominalism 435
non-
  aggregate query 615
  -voting termination 154
nonmonotonic formalisms 345
nonprofit foundations 457
nonrepeatable read anomaly, the 695
normalization of multimedia databases 408
novel data analysis methods 29

O

object
  analysis and design 415

data
  management group 681
  type 422
management group 356
modeling
  of relational applications 413
  tool 413
naming service 715
versions 112
  -at-a-time 258
  -oriented
    database 272, 633
    methodology 187
    schema 100
  -relational
    database management system 247
    model 530
    modeling 421
ObjectAttributes 101
oid 732
OLAP 135
OMAR 414
online
  analytical processing 121, 127, 134, 282, 308, 625
  transaction processing 121
  transactional processing 127
  handwriting recognition 44
  transaction processing transactions 134
ontological 286, 377
ontologies 720
ontology 277, 595
open
  software foundation 464
  source
    database management systems 457
    databases 246
  initiative 249
  strategies 458
operational data 121
optical mark recognition 294
optimistic
  concurrency control 695
  two-phase locking 223
optimization algorithms 343
OSD 721
outerjoins 11
output/input dependencies 192
overlap constraint 612

P

p-tree 737
P2P networks 76
page allocator 89
Index

participation constraint 234, 607
partitioning 159
path-oriented queries 472
pattern corpus 741
peer
  functionality 494
  -to-peer 74
performance improvement 153
periodic
  pull 107
  push 107
personal
  agents 147
  digital assistants 162
personalization 147
phantom anomaly, the 695
physical schema 60, 708
pipeline approach 192
planning and organization 581
PMR trees 653
pool approach 192
portable document format 294
POS devices 199
PostgreSQL 247
pre-execution 526
precipitation dimension 308
predictive model markup language 316
preferable 349
prescriptive 348
primary Copy 154
probabilistic
  flooding 497
  minimum query 615
  query 615
  range query 615
  sum query 615
  threshold query 616
product markup language 715
profile 421
projection 488
propagation 564
  and loading 240
property of versioning 140
proteomics 37
publication 507

Q
QDN 493
QoS
  mechanism 621
  -based querying processing precision matrix 620
Quadtree 653
quality of service 226, 619
quantitative

approach 620
values 324
querical data networks 493
query
  augmentation 148
  by example 624
  evaluation 520
  language 633
  modification 67
  modifiers 130
  optimization 11
  personalization 147
  rewrite 11
  -based 147
    paradigm 151
querying
  changes 202
  the history of a document 202

R
radio frequency identification 173, 715
range query 615
raster
  databases 562
  retrieval 519
RDBMS 624
RDF 75
  schema 19
REA ontology research 602
read
  performance/capacity 556
  -once write-all 224
real-time
  databases 524
  systems 524
recognition systems 294
recommendations 147
recovery 343
reduct 580
redundancy 78
referential integrity constraints 531
regionName Dimension 308
RegionWeather Table 308
regular expressions 688
regulatory imperatives 292
reification 446
relational
  applications 414
  data model 530
  database management systems 457
databases 730
modeling 135
OLAP 130
  -database schema 530
Index

relationship type 710
relationships 607
relative temporal consistency 524
repository 60
request/reply 105
RescueWare 332
resource description framework 506
reverse engineering 60
revision
  chain 111
  programs 345
rhetorical expectations 571
ripple join 15
ROLAP 135
rollback 372
RS-Trees 589
rule
  induction 31
  selection 2

S
Sarbanes-Oxley Act 283
scenarios 480
schema 333, 360, 530
  analyzer 61
  changes 490
  evolution 103, 110
  integration 110
  modification 110
  versioning 110
  -version capability rule 113
schemas 258
scope of knowledge 78
second
  multimedia normal form 411
  -generation companies 457
secure sockets layer 164
security
  levels 383
  policy 383
semantic 450
  differences 593
  integrity constraints 66
  mapping 662
  properties 720
  reconciliation and denormalization 242
  search 688
  support 447
  Web 18, 56, 75, 506
    services 232
semi-structured 75
sensor uncertainty 613
SEQUEL 624
Sesame system 507
set-
  and-test 160
  valued attributes 633
short-duration locking 695
similarity
  join query 647
  nearest-neighbor query 647
  range query 647
simple security policy 304
sketch 671
slaves 549
Smalltalk 633
Smart Dust 716
snapshot 679
snowflake schema 308
Sourceforge 460
spam filtering 684
spatial data 652
  applications 93
  mining 310
  warehouses 308
spatial
  database management 93
    systems 511
  integrity constraints 176
  OLAP 309
  properties 675
  relations 179
  -query-by-sketch 671
spatio-temporal
  applications 652
  databases 377
  DBMS 652
  ER 378
  UML 378
specializations 233
SQL 511
  query 11
  types 353
stable models 346
standard
  for the exchange of product model data 216
  template library 88
star schema 135
  model 308
static time series 646
statistical
  algorithms 31
  databases 633
stereotype 421
streaming time series 646
structural 450
  assertions 48
Index

structured
database 688
tiling algorithm 589
third multimedia normal form 411
three-dimensional 677
threshold 197
time-oriented database 677
to-market 87
timestamp-ordering protocol 153
topological consistency 93
toposes 363
trajectory-bundle tree 654
transaction
design tool 66
models 160
processing 527
time 372, 377
-processing systems 281
databases 196
transactions 121
transportation 240
tree inclusion 474
trend dependencies 199
triggering operations 48
triggers 5, 49
tuple
distance function 410
iteration 11
tuples 635
two-dimensional 677
-phase locking 153, 223, 695

U
u-matrix method 273
ubiquitous 291, 652
computing 714
UDDI registry 548
unidirectional line 177
unified modeling language (UML) 217, 421, 726
uniform resource identifier 506
uniplexed information and computing service 463
Unisys 332
universal
description, discovery, and integration 548
mobile telecommunications system 623
property 356
universe of discourse 435
unstructured 75
update
everywhere 154
monitoring 469
use phase 91
user
  interface layer 451
    -defined
data types 422
time 372

V
valid time 372, 377
value
  domains 353
    -based query 615
VAN 54
variants 111
Vbase 633
version
  graph 111
  model 140
versionable element 140
vertical databases 737
very large scale integration 93
design 511
video analysis and content extraction 393
view
  definition 729
  domain 729
  schema 729
virtual
  -collaborative environments 398
  subclasses 489
  view 730
voting Termination 154

W
wait-free synchronization 160
Web
  business systems developers 184
  content database 460
  databases 460
  portals 542
  service modeling ontology 56
technology 720
  -based
    design 216
    multi-document 587
    -enabled models 206
whole-match queries 647
wireless sensor nodes 714
workflow 295, 398
  management system 158
  patterns 159
WWW consortium 542

X
X11 247
XBR tree 653
XID 500
XML 103, 460, 500, 607, 658, 721
  query languages 472
    technology 742
XSQL 490
Xyleme 500

Z
zero-count bug 11