Index

A
abduction 727
absolute validity interval 1023, 1028
abstract data types (ADT) 44
abstract machine model 440, 444
abstract machine model, Class-Machine 441, 449
access control models 639
access privileges 1467
access redundancy 2212
accessibility IQ criteria 2151
accuracy 1200
ACID (atomicity, consistency, isolation, durability) 26, 209, 1024, 2143
ACID compliant transaction 209
active content deliver network (ACDN) 1283
actors (social networks) 414, 415, 416, 417, 435
ADAM 391
adaptive control 2567, 2569
additivity 97
address universe 1800
ad-hoc environments of peers 1844
ad-hoc peer-to-peer networks 1844
adjusted function points 2006
administrative review agency 1837–1843
admission control 1025
ADOM (application-based domain modeling) 1583
ADOM, theoretical foundations of 1584
ADOM-UML application layer 1586
ADOM-UML domain layer 1585
ADT (abstract data types) 44
advanced modeling 92
AESherenet 379
agent constraint 2393, 2394, 2396
agents, AdminMaster 490
agents, DataSearchMaster 490
agents, DataSearchWorker 490
agents, NodeManager 490
agents, ThesMaster 490
aggregation 97, 678, 681, 682, 683, 684, 685, 691, 701, 1244, 1245, 2502
aggregation relationships 2494, 2506
agile manufacturing (AM) 338
Aglet Workbench SDK 2.0 Tool (IBM) 490
AIRSTD structure 405
Ajax 1411–1412
Alexandria 379
algebraic optimizer 2288
algebraic query 2059, 2061
algorithm adaptation methods 313
ALIAS 2479
Alliance database 957
Alliance Project, the 956
Alliance theory 956
allocating patterns (ALPs) 2657, 2659, 2660, 2665, 2666, 2668, 2669, 2670, 2671, 2675, 2676, 2677, 2678, 2679
allocation pattern mining (ALPM) 2669
allowable operations 1261
ambiguous motifs 2635
amino acids (AAs) 2632
Anangu 1462
Anangu Pitjantjatjara Yankunytjatjara lands 1463
animation 1754
annotated scenario 2280
annotations 2451
ANNs (artificial neural networks) 265
ANNs, semantics in 267
anomaly detection 384, 384–394, 2126
anonymity 1672, 1681, 2130
ANOVA, results of 773
ANSI (American National Standard Institute) 487, 494, 502
ANSI/NISO Z39.19 492, 498
answer set programming (ASP) 2264
anti-join 1241, 1242
application context 1665, 1669
application level threats 2112
application service provider (ASP) 1283
application-level countermeasures 2081
Volume I, pp. 1-677 • Volume II, 678-1356 • Volume III, 1357-2010 • Volume IV, 2011-2705
Index

applications grid 1934
apriori algorithm 65, 2661, 2669
AR (association rules) 517
AR mining 505, 518
AR mining task 512
Ara Irititja Project, The 1462, 1463
Ara Irititja software 1465
archaeological data 1420
archaeological excavation database 1437
archaeological excavations, introduction to 1421
architecture 1372, 1374, 1375
archive databases 1462
ARIADNE (Alliance of Remote Instructional Authoring and Distribution Networks for Europe) 365, 372, 379
arithmetic coding 199
ARPANET (Advanced Research Projects Agency Network) 2109, 2116
arrival pattern 1023, 1024
arrival pattern of transactions 1024
artificial intelligence (AI) 341, 1202
artificial neural network (ANN) 2659
ASSO 441
ARs (association rules) 394, 1320, 2192, 2193, 2194, 2195, 2199, 2201, 2202, 2203, 2545, 2657, 2658, 2659, 2675, 2679, 2680, 2681, 2682, 2683
AR hiding 2273
AR hiding methods 2268
AR mining (ARM) 2660, 2661, 2662, 2680, 2681, 2683
AR based techniques 389
asynchronous collaborative discussion environment 1578
asynchronous collaborative discussion system 1577
asynchronous communication 1681
ATM (automatic teller machine) systems 1754
ATNS (Agreements Treaties and Negotiated Settlements) database 1472
ATNS database, searching 1474
ATNS home page 1474
atomicity 29, 209, 1024
atomicity and isolation (A/I) 1260
attacker 2122
attribute inheritance 445
attribute order dependence 2225, 2229
audit trail 1882, 2095
audit-based expanded query set size control 2105
Australia, Central 1462
Australia, Central Land Council 1464
Australia, remote 1462
Australia, remote indigenous 1462
Australia, South 1463
Australia, Western 1464
Australian Bureau of Statistics 1468
authentication authorization 2114
automated individual decisions 2092
automatic authorship identification 2131
automatic failover 1916
automatic generation of maps 1576
automating process 1903
autonomous organizations 1447
availability 2108
B
B formal method 1168
B Method, overview of 1169
B Method, the 440
B specifications 1173
B specifications, correctness of 1175
B translation 1173
B2B e-commerce 341, 1985
balanced partition 199
bandwidth, low 662
Bank of Jordan 1742
base station (BS) 1262
base64 1381, 1383
basic logic formalism 261
basic sign-off 1263
Bayesian network (BN) 2011
behavioral refinement 441, 452
benchmarks 1232
benchmarks, decision-support 1228
best practices 1292
best-first search 2021
bibliomining 335–336
Big Brother metaphor 1813
binary classification problem 309
binary large objects (BLOBs) 67
binary representation 2158
bioinformatics 794, 1267–1275, 2658, 2683
biological macromolecules 2632
BIOME 379
biomedical informatics 1382
biometric information 1512, 1520–1521
bipolar queries 154
bitmap join indices (BJIs) 2292, 2296, 2297, 2299
bitmaps 197, 2014
Blackboard® 373
blogs (Web logs) 1412–1413
Blue Web’n 379
Boolean attributes 2014
bounded sum 2178
bounded-choice substitution 443
Brazilian health system, the 988
breadth-first (BFS) 2646
Breiman observation 2004
broadcasting 1110, 1115, 1117, 1118, 1124, 1125
Broome 1464
bucket-based histogram 2050
bug assignment 819, 820
bug fixing practices 797
bug-fixing process 805
business environment 940
business information integration 1959
business intelligence 941
business performance management (BPM) 27
business process offshoring (BPO) 1492, 1493, 1494, 1496, 1502, 1505, 1506, 1507
business process re-engineering (BPR) 1949
business rule 219
business systems purpose analysis (BSPA) 1943
business value 866
C

Caching 1119, 1120, 1121, 1124, 1125
Calculation aggregation 1245
Caldicott principles 2095
Canada’s SchoolNet 379
Canonical database 2054
CAPDM Sample Interactive LOS 379
Cardinalities 2493, 2496
Cardinality relationships 2506
CAREO (Campus Alberta Repository for Educational Objects) 365, 379
Cascaded star model 656
Causal rejection principle 2262, 2267
CBIR (content-based image retrieval) 1189, 1191, 1192, 1195, 1198, 1202
CBIR systems 1189
CBIR systems, color 1198
CBIR systems, initial query 1195
CBIR systems, texture 1198
CBIR, feature analysis and similarity measures 1191
CELEBRATE network 372
Cell-level security (CLS) 1669
Central processing unit (CPU) 485
Centralised database 1468
Changes temporal index (CTI) 402
Check-out mode 1263
Child nodes 207
Chow-Liu trees 2019
Clustered model 1259
Coding 1024
Common data model (CDM) 2473
Common gateway interface (CGI) 1575
Common practice notation (CPN) view 39
Community development 1684
Complex data 648, 649, 650, 651, 657
Compatibility function 1024
Computerized patient record system (CPRS) 486
Computer-aided design 339
Computer-aided manufacturing 339
Computer-aided process planning 339
Computer-based information technology 339
Computer-mediated communication (CMC) 1670
Computing paradigm, client-server-based 485
Computing queries 2052
Computing, tabulating recording (CTR) company 205
Conceptual data models 106, 339, 344, 350
Conceptual data models, development of 350
Conceptual defined sequence 684, 685, 686
Conceptual design 98, 346
Conceptual modeling 87, 529, 1009, 1010, 1581
Conceptual schema 441
Concrete motifs 2635
Concurrent engineering (CE) 338
Concurrent engineering (CE) 338
Condensed representation 2055
Confidentiality 186, 2108
Connexions 379
Consistency 209, 449, 1024
Consistent database 2057
Constellation 963, 967
Constitutional empowerment 1823
Constraint databases 348
Constraint-based algorithm 1205
Constraint-based multi-dimensional databases 961
Constraints 212, 963, 968
Constraints, application 446
Constraints, explicit 446
Constraints, implicit 445
Construct definitions 1305
Construction cost 521
Constructivism 1313
Constructs 1445
Content 2060, 2062, 2070
Content-based music information retrieval (CBMIR) 36
Context 579
context objects in spans (CoinS) 1411
context-aware query processing 1844
context-aware service-oriented computing 1864
contextual IQ criteria 2146
contiguous frequent itemsets 2196–2197
continuous availability 1899, 1907
continuous post-deployment communication 1756
continuous quality improvement (CQI) 1349
control system design 2567
control theory 2565, 2566, 2567, 2569, 2570
control-based database tuning 2564
controllability and observability 2570
conventional database system 1021
conventional music notation (CMN) 39
conventional queries 996
convergence 93
convergence rate 2570
cookie poisoning 2127
cookies 2081, 2084, 2113, 2116
coordinate system 1754
coordination theory application 805
copyright 1466
CORBA (common object request broker architecture) 873
CORDRA (content object repository discovery and registration/resolution architecture) 372
corpus 2358
correctness 839
correlation techniques 390
correspondence assertions 2485
cost estimation 2001
cost formula 2546
cost model 660, 669
count aggregation 1245
COUNTER (Counting Online Usage of Networked Electronic Resources) 323–327
coupling, close 787

coupling, loose 784, 787
course management system (CMS) 1289
course packs 365
course portals 365
covariance matrix 1093
Cox regression analysis 1541
cPNs (coloured petri nets) 1025, 1034
cPNs editor 1026
cPNs simulator 1026
Creative Commons 374
Credit Suisse 1787
crisp relational database 139
CRLF (carriage return line feed) injection attack 2127
CRM (customer relationship management) 1779, 1785, 1787
CRM process 1787
CRM systems 1785
CRM technologies 1779
CRM, analytical 1780
CRM, collaborative 1779
CRM, operational 1779
CRM, Web-based systems 1780
CRM-related customer data 1780
cross-dimension attribute 93
CrossRef 1406–1407
CSID (capture, storage, integration, dissemination) data process 1824, 1824–1843
CSMAR-CSTQR database 2672
CSS (cross-site scripting) attack 2127
cube model 2514
cube name 2514
current database models 344
customer data warehouses 1779
customer dimension 710–711
customer investigation process 1787, 1792
customer involvement 875
customer relationship management (CRM) 656, 702–724, 2572, 2573, 2574, 2587, 2588, 2589, 2590, 2591, 2592
customer relationships 1778
customer satisfaction rate (CSR) 1497
customer support 2152
customer’s identification (CustID) 208

cWA 265
cyber cafés, definition 1460
cyber crime index (CCI) 1497
cyber warfare 384
cybercafés, computer networking 1454
cybercrime 2116

D
daily production 941
data 1754, 2313, 2322
data access 1832–1843
data access agent (DAA) 1258
data access type 1024
data accessibility 1575
data analysis 1763
data and schema conflict resolution strategies 1729
data cleaning 240, 2245–2260
data collection 1762
data collection, method of 1456
data collections, MEDLINE 492, 499
data communication cost (DC) 669
data controllers 2089, 2090, 2091, 2092, 2093, 2094
data cubes, histo-based compression 165–178
data definition language (DDL) 986
data exchange and share 339
data glove 1160
data identicle tuples 2285
data integration 2058
data integration options 1726
data integrity 209
data manipulation 1568
data manipulation language (DML) 986
data mart, handling data changes in 226
data mart, handling schema changes in 229
data marts 222
data models and VQLs 1009
data models, object-relational (OR) 419, 425

data models, flat file 207
Index

data models, hierarchical 207, 211
data models, network 208, 211
data models, relational 208, 211
data online 1839–1843
data partitioning 834, 2292
data perturbation 2268
data perturbation, illustration of 190
data perturbation, security and accuracy 189
data preparation 2002
data pre-processing techniques 2037
data properties 1023
data protection act 2088, 2089, 2093, 2094, 2096, 2098
data protection concern 2085
data protection legislation 2088
data quality 1788
data refinement 441
data replication 834
data sanitization 2273
data selection cost 521
data services infrastructure 1727
data source creation 695
data sources 222
data sources for mining 941
data stream pre-processing 2050
data structure refinement 1179
data structures, semantics of 259
data subjects 1822, 2090
data swapping 2106
data tabular 1839–1843
data transformation 386
data user 1833–1843
data visualization 1152, 1568, 1570
data, collection and storage of 942
data, freshness of 840
data, mapping 2471
data-centric approach 2349, 2350, 2354
DataCube (DC) 2013, 2024
data-mining approaches 2473
data mining technique 2543
dataveillance 1808, 1822
Daubechies wavelet 1198
DBs (databases) 207, 211, 1236, 1239, 1240, 1290, 1292, 1460, 1823–1843, 2079, 2084, 2116, 2313, 2314, 2620
DB2 (database 2 universal database) 349, 486, 2142
DBs, abstract 1873
DB administrators (DBAs) 210, 1665, 1669, 2127, 2473, 2564
DB, adults 2555
DB, adults, transaction set for 2562
DB applications, tool for building 1168
DB application system implementer and manager (DASIM) 1283
DB benchmarking 1226, 1233
DB benchmarking, issues 1229
DB benchmarking, tradeoffs 1229
DB binary representation 2165
DB, catalog 2450, 2471
DB clustering 161
DB conceptual schemas 440
DB design 441, 538, 1362
DB design, physical 847, 850
DB, distributed 1919
DBs, distributed and heterogeneous 1447
DB-driven application assignment engine (DATE) 1284
DB-driven portal application 1283
DBs, dynamically linking to ontologies 909
DBs, federated 1453
DBs, federated, architecture 1448
DBs, full-text 1874
DBs, history of 1687
DBs, inductive 1321
DB integration 282, 303, 1928
DB integrity checking 212
DB-like technologies 206
DBs, literature search, online 1874
DB management 1687
DB management systems (DBMSs) 14, 205, 639, 725, 848, 1003, 1021, 1233, 1501, 1667, 1682, 1754, 1959, 2101, 2119, 2127, 2140, 2141
DBMSs, customers, roles of 2144
DBMSs, quality of 2145
DB modeling of engineering information 338
DB models 106, 207, 344, 1233
DB models, constructions of 349
DBs, national medical 2085, 2086, 2087, 2088, 2090, 2091, 2092, 2093, 2095, 2096, 2097
DB, natural language 2130
DBs, online library 1867
DBs, online, misuse of 1867, 1867–1875
DBs, ontological support for 911
DB operating cost reduction 2556
DB operations, taxonomy of 1240
DB partitioning 1263, 2547
DBs, project, global characterization of 2000
DB protection countermeasures, application-level 2081
DB protection countermeasures, host level 2081
DB protection countermeasures, network level 2080
DB protection countermeasures, physical and insider 2082
DB queries 1238
DB reconstruction 2273
DB repair 2058
DB sanitization problem 2269
DB schemas 1322, 2349, 2448, 2450, 2453, 2454, 2456, 2457, 2464, 2465, 2470
DB schema interoperability 909
DB schema model 441
DB security 2100
DB server 2084, 2116
DB skills 208
DBs, spatial 396
DBs, spatio-temporal 396
DB-specific issues 2567
DBs, standby 1914
DB state 1322
DB systems (DBSs) 339, 2473
DBSs, heterogeneous 1863
DBSs, intelligent 725
DBs, temporal 223
DB transactions 446
DB transformation 2055
DBs, transient 223
DB tuning 2299
deadline 1022, 1023, 1025, 1031, 1035
decentralized hospital computer program (DHCP) 486
decision process 615
Index

| Decision Support Systems (SDSSs) | 787 |
| Decision Trees as DM Method | 949 |
| Decision Trees, CART (Classification and Regression Trees) | 2002 |
| Decision Trees, ID3 | 2002 |
| Decision Trees, M5 Algorithm | 2002 |
| Decision Trees, M5, Construction of | 2003 |
| Decisional Model | 99 |
| Decision-Making Processes | 648, 655 |
| Declerative vs. Procedural | 219 |
| Decoding | 2338 |
| Decoding Time | 2339 |
| Deduction | 727 |
| Deduction, Probabilistic | 727 |
| Defense Projects, Cold War Era | 206 |
| Delay Freshness | 840 |
| Delta State, Nigeria | 1454, 1455 |
| DeltaVista | 1796 |
| Democratic Accountability | 1823, 1823–1843 |
| Denial-of-Service (DoS) Attacks | 385 |
| Department of Homeland Security (DHS) | 1514, 1516, 1517–1518 |
| Dependencies, Discontinuous | 745 |
| Deployment Issues | 1468 |
| Depth-First Manner (DFS) | 2646 |
| Descriptive Attribute | 93 |
| Design Process, Security Integration | 638 |
| Design/CPN Tools | 1026 |
| Desktop Database | 893 |
| Desktop File System | 207 |
| Determined Cardinality References | 2506 |
| Determined Data Semantics | 2506 |
| Deterministic Motif Mining | 2632 |
| Deterministic Motifs | 2635 |
| Development Characteristics | 2005 |
| DHHS (Department of Health and Human Services) | 502 |
| Diffusion of Innovations | 2574 |
| Digital Computers | 206 |
| Digital Computers, Development of | 206 |
| Digital Dossier | 1822 |
| Digital Imaging and Communication in Medicine (DICOM) | 1373 |
| Digital Information | 2616 |
| Digital Kinship Database | 956 |
| Digital Learning Object Repositories Specification | 372 |
| Digital Library for Earth System Education | 379 |
| Digital Library, SMETE (Science, Mathematics, Engineering, and Technology Education) | 365 |
| Digital Manipulatives | 900 |
| Digital Map | 1754 |
| Digital Object Identifier (DOI) | 1406–1407 |
| Digital Rights Management (DRM) | 374 |
| Digital Satellite Images | 1754 |
| Digital Scriptorium | 380 |
| Digital Think | 365 |
| Digitation | 1754 |
| Dimension Attribute | 91 |
| Dimension Instances | 964 |
| Dimensional Fact Model (DFM) | 88 |
| Dimensions | 962 |
| Dioxin Database | 2055 |
| Directory Traversal Attack, Definition | 2127 |
| Dirichlet Priors | 2019 |
| Disaster Recovery | 1902 |
| Disclosure Limitation | 1823–1843 |
| DiscoveryLink | 486 |
| DiscoveryLink, DataJoiner | 486 |
| Discretionary Access Control (DAC) | 2101, 2102, 2108 |
| Discriminant Analysis | 2169 |
| Discrimination Networks | 728 |
| Discussion Artifact | 1578 |
| Disjoint Sets | 2307 |
| Disjunctive Datalog Program | 2058 |
| Disjunctive Program | 2055 |
| Display Operator | 972 |
| Disruptive Technology | 2573 |
| Distributed Association Rule Mining | 160 |
| Distributed Classification and Regression | 158 |
| Distributed Data Mining | 157–164 |
| Distributed Software Development | 799 |
| DL (Description Logics) | 269, 2362, 2367, 2376, 2382, 2383 |
| DL Languages, Semantics of | 271 |
| DL-Lite, Expressiveness | 274 |
| DL-Lite, Performance with | 274 |
| DM Activities | 948 |
| DM Algorithms | 941 |
| DM Applications | 943, 944 |
| DM, as a Metaphor | 1812 |
| DM, Collective Framework (CDM) | 159 |
| DM Ethics | 1808 |
| DM Ethics, Metaphors and Models | for 1808–1822 |
| DM in Manufacturing | 944 |
| DM Information | 941 |
| DM Medical Databases | 1393–1404 |
| DM Results | 947 |
| DM Techniques | 944 |
| DM Techniques and Tools | 941 |
| DM, Visual (VDM) | 1152 |
| Document Clustering (DC) | 933 |
| Document Object Model (DOM) | 529 |
| Document Type Definitions (DTDs) | 1321, 1383 |
| Document-Centric Documents | 347 |
| Document-Constructor Model | 2485 |
| Domain Constraints | 213 |
| Domain Environment | 575 |
| Domain Relational Calculus (DRC) | 137 |
| Downtime | 941 |
| Drill-Down Operators | 963, 976 |
| Drug Activity Prediction Problem | 1193 |
| DSpace™ (MIT) | 380 |
| DTD (Document Type Definition) | 530, 2506 |
Index

DTD for structured papers 531
DTD-graph mechanism 2061
Dublin Core metadata standard 372
durability 209, 1024
DWs (data warehouses) 86, 222, 241, 571, 637, 658, 847, 2048, 2108, 2324
DW backstage 847
DW design 86
DWs, handling changes in 224
DWs, node-partitioned (NPDWs) 658, 659
DWs, requirements of 576
DW security and access control models 639
DW systems 222
DWs, temporal, design of 233
DWs, temporal, survey on 221
dynamic generation of maps 1575
dynamic hierarchies 96
dynamic multidimensional histograms 172
dynamic one-dimensional histograms 169
dynamic weights 141
dynamic workloads 2564
Dynapi 820

Educational objects economy (EOE) 380
eduSource 372
effective knowledge organization (EKO) 1638, 1639, 1648
EFLWOR expressions 2477
EFLWOR-expression syntax 2478
e-healthcare systems 492
EIGs (elasticity-based IPR groupings) 2693, 2694
EIGs, detecting 2694
EIGs, example of 2694
EIGs, schematic view of 2695
Eisenhower National Clearinghouse for Mathematics and Science Education 380
elasticity 2685
elasticity, characteristics of 2692
elasticity, example of 2693
elasticity-based groupings 2687
elders 1467
electronic data interchange (EDI) 528
electronic health record (EHR) 485, 1386
electronic patient record (EPR) 1386
Electronic Privacy Information Center (EPIC) 1517, 1527
electronic statistics, development of 321
electronic statistics, management of 326
electronic statistics, use of 327
electronic usage statistics 320
element-based scheme 2234
eLera (e-Learning Research and Assessment Network) 380
EM (expectation maximization), analysis of 1564
EM clusters (individual colours) 1560
EM clusters (RGB) 1563
e-manufacturing 354
emergence index 180
emergence index in image databases 179–185
emergence, model of 180
emergency medical services (EMS) 1344
emergency medical technicians (EMTs) 1345
Emerging domains 2384, 2385, 2386, 2387, 2399, 2401
employee database 941
encoding 2337
engineering information 339
engineering information modeling, needs for 339
engineering information, databases modeling of 338
engineering/product design and manufacturing 342
English-language thesaurus WordNet 486
enterprise information systems (EISs) 340
enterprise software 2572, 2573, 2574, 2575, 2579, 2587, 2588, 2589
entity matching 2302
entity matching methods 2303
entity relation diagram (ERD) 208
entity/relationship (E/R) model 87
entry points 92
environmental informatics 785
environmental problems 1752
EQUAL 2479
equi-join 1241, 1242
equivalence 2267
ER (entity-relationship) modelling 533, 574
ER-based models 533
ER-like models 542
ERMI (Electronic Resource Management Initiative) 325
ERP (enterprise resource planning) 340, 656, 1936, 1952
ERP systems, DB Informix 616
ERP systems, DB Oracle 616
error rates 2340
error tolerance 2225, 2229
ESCOT 380
e-service 1915
ethics 1828–1843
ETL (extraction, transformation, & loading) 847, 2108
ETL infrastructure modules 855
ETL scenarios 848
ETL, constraints of 849
ETL, criticalities of 849
ETL, infrastructure-based 854
ETL, physical database design 850
ETL, requirements of 849
ETL/DW 847
European e-ACCESS repository 372
European Union (EU) data protection directive 2087
evolutionary theory 205
exact hiding approaches 2273
excavation terms 1424
exclusion 968
ExIFO model 2280
expansion 2267
expectation maximization (EM) 70
experimental data sets (EDS) 2696
expert classifier, automatic, training process of 761
expert profile databases, construction of 760
expert profile, structure of 760
expert systems 341
exploratories 380
EXPRESS data model 345, 352
extended action rule discovery 2313
extended action rules 2317
extended DTD graph 2489, 2491, 2506
extended DTD graphs, application of 2495
extended entity relationship (EER) model 540
extended household 703, 711
extended logic program (ELP) 2053
extended possibilistic approach 147
extended possibilistic truth values (EPTVs) 138, 147
extract strong association rules 2414
extract, transform, and load (ETL) 63
extract, transformation and load process 1799
extraction 847

F
fabric data display 2173
fabric database 2169
fabric drape 2166, 2173
fabric drape coefficient 2191
fabric drape, fuzzy clustering prediction of 2173
fabric end-use performance 2167–2191
fabric tailorability 2169
fabric, end-use performance, softness 2167
fact class 686, 694
fact instances 964
FAH (fuzzy abstraction hierarchy framework) 755, 758
FAH, applicability of 766
FAH, intelligent search for experts 765
failover 1914, 1916
false hit 2230
false miss 2231–2234
false negatives 386
false positives 385
FAS (freshness-aware scheduling) 830, 838
FAS, overview of 840
FAS, performance of 842
Fathom Knowledge Network Inc 380
fault-injection environment 1924
feature extraction modules 2277
feature selection 394
federated databases 2473
federated query processor (FQP) 1450
federated schema management component 1449
feedback 1291
feedback control 2565, 2566, 2567, 2568, 2569, 2570
feedback, formative 1298
FGAC (fine-grained access control) 1663, 1664, 1665, 1667, 1669
FGAC models 1663
filamentality 380
file transfer protocol (FTP) 2640
filtering 309, 1243, 1244, 1251
filtering track 499
Firebird 17
firewall 2084
firm deadline 1024
first-order logic (FOL) 2376, 2383
fixed perturbation 2106
flat file 207, 211
flexibility 866, 871
flexible entity resolution architecture 2248
flexible gap motifs 2635
floating IP addresses 1914
FLOSS (free, libre, and open source) software 797, 2301
FLOSS data 2303
FLOSS development, coordination in 804
FLOSS phenomenon 800
FLOSS projects 2301
FLOSS, conceptual development 800
FLOSS, discussion 821
FLOSS, findings 813
FLOSS, research methodology 807
flow measures 97
FNF2 data model 2277, 2281, 2283
FNF2 fuzzy relation schema 2284
FNF2 fuzzy tuple 2283
FNF2, image retrieval application of 2288
forecasting 2001
Foreign Intelligence Surveillance Act (FISA) 1521
foreign key (FK) 1427
foreign key constraints 213
forensics, applications to 1565
formal competency questions 2387, 2388, 2398, 2399
formalism 214
FPOB hybrid 128
FQUERY 143, 152
fragile watermarking 2228
fragmentation attribute 2299
free and open source software (FOSS) 2572, 2573, 2574, 2576, 2577, 2578, 2579, 2580, 2581, 2583, 2584, 2585, 2586, 2587–2590, 2591
frequency-based matching 2307
frequent itemset hiding 2273
frequent one-sum weighted itemsets 2669
frequent pattern growth tree (FPT) 1051
freshness index by data deviation 840
<table>
<thead>
<tr>
<th>Term</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTS (full-text search)</td>
<td>933</td>
</tr>
<tr>
<td>FTS engine</td>
<td>938</td>
</tr>
<tr>
<td>FTS engine interface</td>
<td>935</td>
</tr>
<tr>
<td>FTS engine, structure of</td>
<td>934</td>
</tr>
<tr>
<td>FULL</td>
<td>2479</td>
</tr>
<tr>
<td>full elasticity</td>
<td>2693</td>
</tr>
<tr>
<td>full replicas (FRs)</td>
<td>673</td>
</tr>
<tr>
<td>full-text indices</td>
<td>198</td>
</tr>
<tr>
<td>fully partitioned replicas (FPRs)</td>
<td>674</td>
</tr>
<tr>
<td>function approximation</td>
<td>1107</td>
</tr>
<tr>
<td>function points</td>
<td>2002</td>
</tr>
<tr>
<td>functional data model</td>
<td>1012</td>
</tr>
<tr>
<td>fusion places</td>
<td>1026</td>
</tr>
<tr>
<td>fuzzy association rules, and distributed</td>
<td>mining</td>
</tr>
<tr>
<td>fuzzy association rules, and mining</td>
<td>2427–2447</td>
</tr>
<tr>
<td>fuzzy attribute</td>
<td>2284</td>
</tr>
<tr>
<td>fuzzy clustering</td>
<td>2173, 2176</td>
</tr>
<tr>
<td>fuzzy complementation</td>
<td>2284</td>
</tr>
<tr>
<td>fuzzy comprehensive method, and apparel</td>
<td>comfort</td>
</tr>
<tr>
<td>fuzzy conceptual data modeling</td>
<td>106</td>
</tr>
<tr>
<td>fuzzy data</td>
<td>2448, 2450, 2454, 2455, 2457, 2458, 2459, 2463, 2464, 2466, 2470, 2471</td>
</tr>
<tr>
<td>fuzzy databases</td>
<td>348, 2448, 2450, 2455, 2456, 2459, 2462, 2463, 2464, 2466</td>
</tr>
<tr>
<td>fuzzy database management systems</td>
<td>2466, 2471</td>
</tr>
<tr>
<td>fuzzy databases, similarity relation-based</td>
<td>146</td>
</tr>
<tr>
<td>fuzzy image database (FIB)</td>
<td>2288</td>
</tr>
<tr>
<td>fuzzy intersection</td>
<td>2284</td>
</tr>
<tr>
<td>fuzzy linear clustering</td>
<td>2166, 2173</td>
</tr>
<tr>
<td>fuzzy logic</td>
<td>105, 341, 1495–1496, 1502, 1505, 1506, 1507, 1509, 1510, 2159, 2165</td>
</tr>
<tr>
<td>fuzzy logical database modeling</td>
<td>106</td>
</tr>
<tr>
<td>fuzzy matching</td>
<td>938</td>
</tr>
<tr>
<td>fuzzy metaknowledge base (FMB)</td>
<td>2455</td>
</tr>
<tr>
<td>fuzzy object-oriented data models</td>
<td>127</td>
</tr>
<tr>
<td>fuzzy pairs</td>
<td>2287</td>
</tr>
<tr>
<td>fuzzy possibilistic relational database</td>
<td>145</td>
</tr>
<tr>
<td>fuzzy predicates</td>
<td>143, 150</td>
</tr>
<tr>
<td>fuzzy preferences, between query conditions</td>
<td>141</td>
</tr>
<tr>
<td>fuzzy preferences, inside query conditions</td>
<td>140</td>
</tr>
<tr>
<td>fuzzy querying, of fuzzy relational</td>
<td>databases</td>
</tr>
<tr>
<td>fuzzy querying, protoforms</td>
<td>1040</td>
</tr>
<tr>
<td>fuzzy search</td>
<td>1800</td>
</tr>
<tr>
<td>fuzzy searching and Arabic/Asian names</td>
<td>1802</td>
</tr>
<tr>
<td>fuzzy set theory</td>
<td>342</td>
</tr>
<tr>
<td>fuzzy sets</td>
<td>107, 1133, 1137, 1138, 2165</td>
</tr>
<tr>
<td>fuzzy sets, and neural networks</td>
<td>2169</td>
</tr>
<tr>
<td>fuzzy similarity calculation</td>
<td>2161</td>
</tr>
<tr>
<td>fuzzy similarity representation</td>
<td>2160</td>
</tr>
<tr>
<td>fuzzy similarity representation, model for</td>
<td>2160</td>
</tr>
<tr>
<td>fuzzy union</td>
<td>2284</td>
</tr>
<tr>
<td>Gaim</td>
<td>820</td>
</tr>
<tr>
<td>gap constraint</td>
<td>2636</td>
</tr>
<tr>
<td>Gateway to Educational Materials (SM) (GEM) Consortium</td>
<td>380</td>
</tr>
<tr>
<td>GDP value</td>
<td>207</td>
</tr>
<tr>
<td>GEFRED</td>
<td>146</td>
</tr>
<tr>
<td>gene analysis</td>
<td>2642</td>
</tr>
<tr>
<td>genealogy</td>
<td>956</td>
</tr>
<tr>
<td>General Electric</td>
<td>206</td>
</tr>
<tr>
<td>general public license (GPL)</td>
<td>888</td>
</tr>
<tr>
<td>generalized additive perturbation process</td>
<td>(GADP)</td>
</tr>
<tr>
<td>generalized substitution language (GSL)</td>
<td>443</td>
</tr>
<tr>
<td>genetic algorithm</td>
<td>2021</td>
</tr>
<tr>
<td>genomics research network architecture</td>
<td>(gRNA)</td>
</tr>
<tr>
<td>geographic data mining</td>
<td>791</td>
</tr>
<tr>
<td>geographic ontology</td>
<td>2410</td>
</tr>
<tr>
<td>geographic position coordinates</td>
<td>1570</td>
</tr>
<tr>
<td>Geomedia software</td>
<td>1741</td>
</tr>
<tr>
<td>geo-ontology</td>
<td>2405–2426</td>
</tr>
<tr>
<td>GeoSensors</td>
<td>790</td>
</tr>
<tr>
<td>geospatial component</td>
<td>785, 786, 787, 790</td>
</tr>
<tr>
<td>geospatial data layers</td>
<td>1749</td>
</tr>
<tr>
<td>Geotechnical, Rock and Water Resources</td>
<td>Library</td>
</tr>
<tr>
<td>geovisualization</td>
<td>786</td>
</tr>
<tr>
<td>GISs (geographical information systems)</td>
<td>395, 778, 779, 780, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 795, 796, 1015, 1445, 1570, 1682, 1691, 1741, 1754, 2685</td>
</tr>
<tr>
<td>GISs (graphical information systems)</td>
<td>210</td>
</tr>
<tr>
<td>GIS applications</td>
<td>395</td>
</tr>
<tr>
<td>GIS knowledge infrastructure, environmental</td>
<td>778</td>
</tr>
<tr>
<td>GIS-based interactive database system</td>
<td>1741</td>
</tr>
<tr>
<td>global constraint checking</td>
<td>566</td>
</tr>
<tr>
<td>global database system</td>
<td>(GDBS)</td>
</tr>
<tr>
<td>GEODE (Global Education Online Depository and Exchange)</td>
<td>381</td>
</tr>
<tr>
<td>Global Grid Forum</td>
<td>1268</td>
</tr>
<tr>
<td>global manufacturing</td>
<td>338</td>
</tr>
<tr>
<td>global positioning system (GPS)</td>
<td>210, 780, 1570, 1755</td>
</tr>
<tr>
<td>global rollback</td>
<td>862</td>
</tr>
<tr>
<td>global schema</td>
<td>2053</td>
</tr>
<tr>
<td>global semantic integrity constraints</td>
<td>550</td>
</tr>
<tr>
<td>global-as-view (GAV)</td>
<td>2474</td>
</tr>
<tr>
<td>globalized technology society</td>
<td>1823</td>
</tr>
<tr>
<td>GNU</td>
<td>2386</td>
</tr>
<tr>
<td>goal-oriented requirement engineering</td>
<td>570</td>
</tr>
<tr>
<td>Google Earth</td>
<td>395, 397</td>
</tr>
<tr>
<td>Google Earth, main layout</td>
<td>398</td>
</tr>
<tr>
<td>Google Earth, sample queries</td>
<td>397–400</td>
</tr>
<tr>
<td>Google Earth, user solution</td>
<td>397</td>
</tr>
<tr>
<td>Google hacking attack</td>
<td>2127</td>
</tr>
<tr>
<td>Google Scholar</td>
<td>1410–1411</td>
</tr>
<tr>
<td>government</td>
<td>1685, 1829–1843</td>
</tr>
<tr>
<td>government agencies</td>
<td>1723</td>
</tr>
<tr>
<td>government portal</td>
<td>2109</td>
</tr>
<tr>
<td>government, as consumer</td>
<td>1686</td>
</tr>
<tr>
<td>government, as regulator</td>
<td>1685</td>
</tr>
<tr>
<td>grammar, context-free</td>
<td>728</td>
</tr>
<tr>
<td>grammar, context-free phrase-structure</td>
<td>743</td>
</tr>
</tbody>
</table>
grammar, context-sensitive 728
graphical HRotate operation 982
graphical query 982
graphical query language 981
graphical user interfaces (GUIs) 27, 486, 498, 1692, 1752, 2288
Graphic-OLAPSQL Tool 979
GRASS (geographic resources analysis support system) 1570, 1574
GRASS GIS 1573
GRASS GIS technology 1572
greedy equivalence search (GES) algorithm 2021
grid computing 26, 779, 783, 1934
grid infrastructure 1928
grid protein sequence analysis (GPSA) 1269
ground terms 2396
group awareness 1681
GT (global transaction) 1259
GT coordinator (GTC) 1260
GT manager (GTM) 1260
guarded substitution 443
hacker 2110
handheld devices 1309, 1316
hard deadline 1023
Harvey Project 381
hashing 200
HCC comprehension 1602
HCPNs (hierarchical coloured petri nets) 1022, 1025, 1029, 1037
HCPNs-based modeling 1025
HEAL (Health Education Assets Library) 381
health care services management 1385
heterogeneous data integration tools 2471
heterogeneous data sources 2472, 2476
heuristic hiding approaches 2274
heuristic search algorithms 2019
heuristic-based deterministic transformations 2059
heuristics 2004
HIDE 2480
hierarchical association rules 2192, 2193, 2201, 2202
hierarchical classification 310
hierarchical clustering 49
hierarchical clustering, collective algorithm (CHC) 161
hierarchical learning framework 1189, 1193, 1195, 1197, 1200, 1202
hierarchical learning framework in the MMIR System 1195
hierarchical learning scheme 1193
hierarchical model 207, 726
hierarchical structure 2037, 2038
hierarchies 962, 965
hierarchies, class 728
hierarchies, part-whole 728
hierarchies, shared 94
hierarchy, ragged 94
hierarchy, temporal 94
hierarchy, unbalanced 96
high availability (HA) 34
high availability server 1915
higher order neural network (HONN) 1085, 1102
hill-climbing search algorithm 2019, 2021
HIPAA (Health Insurance Portability and Accountability Act of 1996) 502
histogram 2049, 2050
histogram-based compression 165–178
histogram-based compression techniques 168
histograms 165
historical data 242
historical queries 232
Hollerith Tabulation company 205
Hollerith, Herman 205
Hollerith’s mechanical tabulators 206
Horde 2116
horizontal partitioning 2296, 2299
host level threats 2112
host-level countermeasures 2081
HostMaster 490
hubs 858
Huffman coding 199
human consistent tool for using natural language 1038–1049
human-computer interaction design 1577
human-computer interface 1577
Humbul Humanities Hub 381
hybrid designs 834
hybrid reasoning 276
HyperModel 543
hypertext mark-up language (HTML) 210
hypertext pre-processor (PHP) 889
hypertext transport protocol secure (HTTPS) 1383
I
IBM (International Business Machines) 206
Iconex 381
ICTs, international 1876, 1877
IDEAS (Interactive Dialogue with Educators from Across the State) 381
IDEFIX 344
identifiability 1672, 1681
identity concept 4
identity theft 1519, 1525, 1822
IDS (integrated data store) 206
IDS, overview of 384
IEEE Learning Technology Standards Committee (LTSC) 364
illegal immigration 1524–1525
iLumina 381
image analysis 62
image archive module 1387
image databases 2275
image mining 1552
image representation 1198, 2277
image retrieval 61, 68, 73, 81, 1189, 1191, 1195, 1202
image retrieval problem 2279
image retrieval, content-based (CBIR) 179
image segmentation 1198
images 1193
imprecision 341, 1024, 1025, 1032
IMS (information management system) 206
IMS Global Learning Consortium Inc. 370, 372–373
inclusion 968
inconsistency 2052
inconsistency tolerance 220
inconsistent database 2058
incremental development cycle 1290
indexed attribute 2293, 2300
indexer 938
indexing, temporal 402
indices, dynamic 198
indices, static 198
indigenous knowledge systems 1468
indigenous peoples 1462
individual autonomy 1823
induction algorithm 394
information access 1733, 1823
information compression 748
information extraction (IE) 932, 2130, 2131
information gain (IG) 2641
information grid 1934
information interpretation system 1571, 1572, 1578
information justice 1823
information modeling 2, 339
information modeling, philosophical foundations of 1–12
information organization (IO) 1824–1843
information privacy 1823
information processing 1638, 1640, 1643, 1646, 1647
information retrieval 196, 726, 1731
information security defense curves 1523
information sharing 1723
information space, dynamic organization 907
information storage 1730
information systems 338, 1664
information, imperfect 106
information, imprecise and uncertain 105
information-exchange dilemma 1681
infrastructure grid 1934
initialization 446
inner product 1093, 1094, 1095, 1097, 1099, 1100
insider countermeasures 2082
insider threats 2115
instance 394, 1193
instance-level methods 290
institutional review board (IRB) 1837–1843
instructional technology 1867
integrated care records 2095
integrating databases 2473
integration 866, 871, 2052
integration efforts 274
integration strategy 2482
integration-mechanism architecture 2483
integrity 220, 2108
integrity checking 220
integrity checking, simplified incremental 213
integrity constraints 212, 220, 2053, 2058
integrity constraints, declarative 219
integrity constraints, dynamic 220
integrity constraints, procedural 219
integrity constraints, static 220
integrity enforcement 220
integrity satisfaction 220
integrity theory 213
integrity violation 220
intelligence for engineering 341
intelligent discovery assistant 656
interactive data access environment 1576
interactive digital archive 1463
interactive navigation 1159
interactive television (iTV) 1479
inter-dimension constraints 968
interface design 1464
internal consistency 1024
internal privacy review board 1837–1843
international standardization organization (ISO) 1383
Internet 485, 1468
Internet applications 1437, 1445
Internet applications, databases for 1420
Internet control message protocol (ICMP) 2116
Internet protocol television (IPTV) 1477, 1477–1486
Internet-based applications 1915
inter-ontology relationships 910
interpretation system 1568
intersymbol interference (ISI) 1085
interview-based qualitative data 1876
intra-dimension constraints 968
intrinsic IQ criteria 2145
intrusion detection
intrusion detection system (IDS) 394
intuitionistic sets 1128, 1136, 1146, 1148
inverse frequent itemset mining 2274
inverted files 197
inverted index 938
invertibility 2230–2231
investment errors 1788
investment portfolios, allocating patterns 2657
investment-item return prediction 2658
investment-item selection 2658
investment-item weight determination 2658
IP security (IPsec) 2084
IPRs (inconsistent pair-wise relations) 2690
IPRs, balanced 2694
IPRs, elasticity analysis of 2691
IPRs, examples of 2690
IPRs, graphical representation of 2690
IPRs, unbalanced 2693
iRevive 1347
iRevive system architecture 1348
Irrunytju (Wingellina WA) 1464
IS (information systems) 615, 866
IS capabilities 866, 868, 869
islands of applications 1935
islands of computing 1935
ISO (International Organization for Standardization) 344
isolation 1024
IS-UML class diagrams 1173
IS-UML diagrams 1173
IT (information technology) 62, 1682, 1756
IT applications in practice 1694
IT best practices 1462
IT business value (ITBV) 866, 869
<table>
<thead>
<tr>
<th>Page</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>866</td>
<td>IT investments</td>
</tr>
<tr>
<td>866</td>
<td>IT payoff paradox</td>
</tr>
<tr>
<td>1529</td>
<td>IT standards</td>
</tr>
<tr>
<td>1468</td>
<td>IT&amp;T infrastructure</td>
</tr>
<tr>
<td>1687</td>
<td>IT/economic development revolutions</td>
</tr>
<tr>
<td>381</td>
<td>IU (Interactive University) Project</td>
</tr>
<tr>
<td>1372</td>
<td>Java</td>
</tr>
<tr>
<td>1374</td>
<td>Java database connectivity (JDBC)</td>
</tr>
<tr>
<td>1375</td>
<td>Java foundation classes (JFC)</td>
</tr>
<tr>
<td>1376</td>
<td>Java server pages (JSP)</td>
</tr>
<tr>
<td>1377</td>
<td>JFK Airport</td>
</tr>
<tr>
<td>1259</td>
<td>joey transaction (JT)</td>
</tr>
<tr>
<td>1243</td>
<td>join operation</td>
</tr>
<tr>
<td>1244</td>
<td>joint photographic experts group (JPEG)</td>
</tr>
<tr>
<td>2023</td>
<td>join-tree algorithm</td>
</tr>
<tr>
<td>1464</td>
<td>Koorie Heritage Trust</td>
</tr>
<tr>
<td>1372</td>
<td>KDD (knowledge discovery in databases)</td>
</tr>
<tr>
<td>1375</td>
<td>KDD process</td>
</tr>
<tr>
<td>1376</td>
<td>KDD techniques</td>
</tr>
<tr>
<td>1377</td>
<td>KDI (knowledge discovery interface)</td>
</tr>
<tr>
<td>1378</td>
<td>KDI architecture</td>
</tr>
<tr>
<td>1379</td>
<td>KDI implementation</td>
</tr>
<tr>
<td>1380</td>
<td>KDI system conceptualization</td>
</tr>
<tr>
<td>1381</td>
<td>KDI, potential applications</td>
</tr>
<tr>
<td>1382</td>
<td>KEY</td>
</tr>
<tr>
<td>1383</td>
<td>key-coded data</td>
</tr>
<tr>
<td>1384</td>
<td>Kicq</td>
</tr>
<tr>
<td>1385</td>
<td>kinship database</td>
</tr>
<tr>
<td>1386</td>
<td>KM (knowledge management)</td>
</tr>
<tr>
<td>1387</td>
<td>KM systems (KMSs)</td>
</tr>
<tr>
<td>1388</td>
<td>KM, approaches to semantics</td>
</tr>
<tr>
<td>1389</td>
<td>k-means clusters (individual colours)</td>
</tr>
<tr>
<td>1390</td>
<td>k-means clusters (RGB)</td>
</tr>
<tr>
<td>1391</td>
<td>Knowledge Agora</td>
</tr>
<tr>
<td>1392</td>
<td>knowledge communication, shared databases</td>
</tr>
<tr>
<td>1393</td>
<td>knowledge component</td>
</tr>
<tr>
<td>1394</td>
<td>knowledge discovery</td>
</tr>
<tr>
<td>1395</td>
<td>knowledge discovery system</td>
</tr>
<tr>
<td>1396</td>
<td>knowledge discovery, incomplete</td>
</tr>
<tr>
<td>1397</td>
<td>knowledge discovery, incorrect</td>
</tr>
<tr>
<td>1398</td>
<td>knowledge discovery, using historical data</td>
</tr>
<tr>
<td>1399</td>
<td>knowledge discovery, XML-based database for</td>
</tr>
<tr>
<td>1400</td>
<td>knowledge extraction</td>
</tr>
<tr>
<td>1401</td>
<td>knowledge hiding</td>
</tr>
<tr>
<td>1402</td>
<td>knowledge integration</td>
</tr>
<tr>
<td>1403</td>
<td>knowledge maintenance</td>
</tr>
<tr>
<td>1404</td>
<td>knowledge model</td>
</tr>
<tr>
<td>1405</td>
<td>knowledge modeling</td>
</tr>
<tr>
<td>1406</td>
<td>knowledge portal</td>
</tr>
<tr>
<td>1407</td>
<td>knowledge portal, application of expert management in</td>
</tr>
<tr>
<td>1408</td>
<td>knowledge process offshoring (KPO)</td>
</tr>
<tr>
<td>1409</td>
<td>knowledge representation</td>
</tr>
<tr>
<td>1410</td>
<td>learning management systems (LMSs)</td>
</tr>
<tr>
<td>1411</td>
<td>learning matrix</td>
</tr>
<tr>
<td>1412</td>
<td>learning network, online</td>
</tr>
<tr>
<td>1413</td>
<td>learning outcomes</td>
</tr>
<tr>
<td>1414</td>
<td>LearningLanguages.net</td>
</tr>
<tr>
<td>1415</td>
<td>least median squares (LMSs)</td>
</tr>
<tr>
<td>1416</td>
<td>legally sensitive information</td>
</tr>
<tr>
<td>1417</td>
<td>Lempel-Ziv algorithm</td>
</tr>
<tr>
<td>1418</td>
<td>LERS algorithm</td>
</tr>
<tr>
<td>1419</td>
<td>Library 2.0</td>
</tr>
<tr>
<td>1420</td>
<td>linear regression</td>
</tr>
<tr>
<td>1421</td>
<td>linguistic database summaries</td>
</tr>
<tr>
<td>1422</td>
<td>linguistic quantifier</td>
</tr>
<tr>
<td>1423</td>
<td>linguistic quantifiers</td>
</tr>
<tr>
<td>1424</td>
<td>linguistic summaries using fuzzy logic</td>
</tr>
<tr>
<td>1425</td>
<td>linguistic summaries, protoforms</td>
</tr>
<tr>
<td>1426</td>
<td>linking</td>
</tr>
<tr>
<td>1427</td>
<td>linking technologies</td>
</tr>
<tr>
<td>1428</td>
<td>Linux cron</td>
</tr>
<tr>
<td>1429</td>
<td>literary work</td>
</tr>
<tr>
<td>1430</td>
<td>literature searches</td>
</tr>
<tr>
<td>1431</td>
<td>loading atomicity</td>
</tr>
<tr>
<td>Index</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>loading processes 847</td>
<td></td>
</tr>
<tr>
<td>local area network (LAN) 1455</td>
<td></td>
</tr>
<tr>
<td>local area network (LAN) 658</td>
<td></td>
</tr>
<tr>
<td>local processing cost (LC) 669</td>
<td></td>
</tr>
<tr>
<td>local transaction (LT) 1259</td>
<td></td>
</tr>
<tr>
<td>local-as-view (LAV) 2474</td>
<td></td>
</tr>
<tr>
<td>location dependent 1108, 1109, 1110, 1114, 1120, 1122</td>
<td></td>
</tr>
<tr>
<td>location dependent query processing 1120–1122</td>
<td></td>
</tr>
<tr>
<td>location processor (LP) 2483</td>
<td></td>
</tr>
<tr>
<td>location-dependent information processing 1236, 1240, 1255</td>
<td></td>
</tr>
<tr>
<td>log-based retrieval 1192, 1200</td>
<td></td>
</tr>
<tr>
<td>log-based retrieval mechanism 1192</td>
<td></td>
</tr>
<tr>
<td>logic program with exceptions (LPe) 2053</td>
<td></td>
</tr>
<tr>
<td>logical algebra 2516</td>
<td></td>
</tr>
<tr>
<td>logical consistency 1021, 1023</td>
<td></td>
</tr>
<tr>
<td>logical constraint 1033</td>
<td></td>
</tr>
<tr>
<td>logical database models 106, 339, 346</td>
<td></td>
</tr>
<tr>
<td>logical database models, classical 346</td>
<td></td>
</tr>
<tr>
<td>logical database models, development of 351</td>
<td></td>
</tr>
<tr>
<td>logical database models, extended 348</td>
<td></td>
</tr>
<tr>
<td>logical database models, hybrid 348</td>
<td></td>
</tr>
<tr>
<td>logical database models, special 348</td>
<td></td>
</tr>
<tr>
<td>logical model 1010</td>
<td></td>
</tr>
<tr>
<td>logical schema 441</td>
<td></td>
</tr>
<tr>
<td>logic-based systems 258</td>
<td></td>
</tr>
<tr>
<td>long-term learning 1189, 1191, 1192</td>
<td></td>
</tr>
<tr>
<td>LOs (learning objects) 363, 363–365, 1290</td>
<td></td>
</tr>
<tr>
<td>LOs for the Arc of Washington 381</td>
<td></td>
</tr>
<tr>
<td>LOs Learning Activities (LoLa) Exchange 382</td>
<td></td>
</tr>
<tr>
<td>LOs Virtual College (Miami Dade) 382</td>
<td></td>
</tr>
<tr>
<td>LO metadata (LOM) standards, IEEE 364, 372</td>
<td></td>
</tr>
<tr>
<td>LO metadata (LOM) standards, IMS Global Learning Consortium Inc. 370</td>
<td></td>
</tr>
<tr>
<td>LO repositories (LORs) 362</td>
<td></td>
</tr>
<tr>
<td>LORs, future trends 371</td>
<td></td>
</tr>
<tr>
<td>LORs, interoperability 372</td>
<td></td>
</tr>
<tr>
<td>LORs, Learning-Objects.net (Acadia University) 381, 382</td>
<td></td>
</tr>
<tr>
<td>LORs, methodology 365</td>
<td></td>
</tr>
<tr>
<td>LORs, overview of 362</td>
<td></td>
</tr>
<tr>
<td>LORs, University of Mauritius 381</td>
<td></td>
</tr>
<tr>
<td>LR classifiers 2002</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>machine intelligence quotient 1496–1497</td>
<td></td>
</tr>
<tr>
<td>machine learning 781, 782, 789, 791, 1191, 1193, 1202, 1203, 2130, 2658, 2659, 2659, 2682</td>
<td></td>
</tr>
<tr>
<td>machine learning, and data cleaning 2245–2260</td>
<td></td>
</tr>
<tr>
<td>machinery capacity 941</td>
<td></td>
</tr>
<tr>
<td>maintenance cost 521</td>
<td></td>
</tr>
<tr>
<td>maintenance overhead 2300</td>
<td></td>
</tr>
<tr>
<td>Malaysian Free Trade Zone 1936, 1937</td>
<td></td>
</tr>
<tr>
<td>MAMDAS (mobile-agent-based mobile data-access system) 486, 487, 488, 490, 492, 498, 502</td>
<td></td>
</tr>
<tr>
<td>MAMDAS, DataSearchMaster 490</td>
<td></td>
</tr>
<tr>
<td>managed learning environment (MLE) 1290</td>
<td></td>
</tr>
<tr>
<td>mandatory access control (MAC) 2101, 2106</td>
<td></td>
</tr>
<tr>
<td>man-in-the-middle attack 2112</td>
<td></td>
</tr>
<tr>
<td>manufacturing domain 342</td>
<td></td>
</tr>
<tr>
<td>manufacturing enterprises 354</td>
<td></td>
</tr>
<tr>
<td>manufacturing flexibility 342</td>
<td></td>
</tr>
<tr>
<td>manufacturing organizations 940</td>
<td></td>
</tr>
<tr>
<td>many-to-many communication 1681</td>
<td></td>
</tr>
<tr>
<td>many-to-many relationships 2506</td>
<td></td>
</tr>
<tr>
<td>mapping 1025, 1033</td>
<td></td>
</tr>
<tr>
<td>Maricopa Learning Exchange 382</td>
<td></td>
</tr>
<tr>
<td>Markov models, hidden (HMM) 43</td>
<td></td>
</tr>
<tr>
<td>mashup 1416</td>
<td></td>
</tr>
<tr>
<td>material implication 736</td>
<td></td>
</tr>
<tr>
<td>material requirements planning (MRP/MRP II) 1936</td>
<td></td>
</tr>
<tr>
<td>Math Forum 382</td>
<td></td>
</tr>
<tr>
<td>matrilineal genealogy 959</td>
<td></td>
</tr>
<tr>
<td>maximal elasticity 2693</td>
<td></td>
</tr>
<tr>
<td>MD (multidimensional data) 572</td>
<td></td>
</tr>
<tr>
<td>MDA (model driven architecture) 638</td>
<td></td>
</tr>
<tr>
<td>MDA and MDS compliant approach 640</td>
<td></td>
</tr>
<tr>
<td>MDBS context 2476</td>
<td></td>
</tr>
<tr>
<td>MDS (model driven security) 637, 638, 640</td>
<td></td>
</tr>
<tr>
<td>measurement description system 2391, 2396</td>
<td></td>
</tr>
<tr>
<td>mechanisms 2476</td>
<td></td>
</tr>
<tr>
<td>mediator ontology 598</td>
<td></td>
</tr>
<tr>
<td>mediators 2473</td>
<td></td>
</tr>
<tr>
<td>medical data, compiling 2085</td>
<td></td>
</tr>
<tr>
<td>medical diagnosis 732</td>
<td></td>
</tr>
<tr>
<td>membership function 2165</td>
<td></td>
</tr>
<tr>
<td>merging cost (MC) 669</td>
<td></td>
</tr>
<tr>
<td>MERLOT (Multimedia Educational Resource for Learning and Online Teaching system) 365, 372, 382</td>
<td></td>
</tr>
<tr>
<td>MERLOT-CATS (Community of Academic Technology Staff) 382</td>
<td></td>
</tr>
<tr>
<td>message sequence chart (MSC) 1027, 1030, 1034</td>
<td></td>
</tr>
<tr>
<td>message understanding conferences (MUCs) 2131</td>
<td></td>
</tr>
<tr>
<td>metadata 363, 364, 365, 372, 373, 485, 1464, 2450, 2451, 2453, 2456, 2471</td>
<td></td>
</tr>
<tr>
<td>metadata collector 1464</td>
<td></td>
</tr>
<tr>
<td>metadata standards 363</td>
<td></td>
</tr>
<tr>
<td>metaknowledge 1672, 1681</td>
<td></td>
</tr>
<tr>
<td>metaphone 1802</td>
<td></td>
</tr>
<tr>
<td>metaphone, double 1802</td>
<td></td>
</tr>
<tr>
<td>metropolitan area network (MAN) 1455</td>
<td></td>
</tr>
<tr>
<td>microdata 1839, 1839–1843</td>
<td></td>
</tr>
<tr>
<td>Microsoft SQL server security 1366</td>
<td></td>
</tr>
<tr>
<td>middleware 832</td>
<td></td>
</tr>
<tr>
<td>MIDI 39</td>
<td></td>
</tr>
</tbody>
</table>
MIL (multiple instance learning) 1189, 1191, 1192, 1193, 1194, 1195, 1197, 1200, 1203
MIL techniques 1189
MILPRIT* 1205
minimal elasticity 2692
minimum description length (MDL) 2019
mining of knowledge 943
mining temporal relational patterns 1205
MIPS (Munich Information Centre for Protein Sequences) 310
MIR (music information retrieval) 38
missing values 2004
MIT OpenCourseWares 382
mixed measures 2640
mixed motive cooperation game 1817
MM (Markov model mediator) 1189, 1191, 1192, 1194, 1195, 1197, 1200, 1204
MMM_MIL framework 1195
MMM_MIL Iteration 1197
mobile ad-hoc network (MANET) 1262
mobile computing environment 1110–1111
mobile database 1255
mobile database system 1347
mobile multi-database system (MMDBS) 1260
mobile query processing 1110, 1115, 1117, 1255
mobile technology 1235
mobile transaction 1258
mobile transaction manager (MTM) 1258
mobile user queries 1114
mobile workstation 1469
mobile-agent technology 486
mobile-agent-based distributed system design paradigm 485
model abstraction 1009
modeling database systems 2567
modularization 856
money laundering 1790
monitoring 1025, 1034
Moodle 373
motif applications 2641
motif databases 2642
motif mining algorithms 2644
motifs 2633
motivating scenario 2387, 2388, 2397
MSAnalyzer 1268
MSDNAA 382
multiclass classification problem 309
multidatabases 1453, 2474
multidatabase language (MDL) 2473
multidatabase system 1257
multidimensional aggregates, optimization of 2324
multidimensional data (MD) 572, 637
multidimensional database 962
multidimensional modeling 638
multidimensional modeling under constraints 963
multidimensional query algebra 972
multidimensional table 972
multi-label classification 309
multi-label classification, methods 311
multilayer 1445
multilayer feed-forward neural network 1194
multimedia 1468
multimedia data, exploring/understanding 1154
multimedia database mining 1151
multiple alignments 727
multiple arc 94
multiple archaeological excavation database, designing 1426
multiple archaeological excavations, databases for 1420
multiple excava i 1445
ten database 1445
multiple remote databases 1251
multiple servers 1236
multiple-bits watermark 2229–2234
multiple-instance learning 310
multiple-label problems 310
multiplexing 1089, 1096, 1097, 1098, 1099, 1104, 1105
multivariate Gaussian 2019
multivariate linear regression (MLR) 2001
multiversion concurrency control (MVCC) 841
music data mining 35
music information retrieval (MIR) 38
musical analysis 35
Mutitjulu (Uluru NT) 1464
mutual exclusion metrics 2197–2199
MXQuery 2473, 2476
MXQuery, usage 2480
myGrid 1269
MySQL 17, 207

N
naïve Bayes classification 1403
NAME(n) function 2480
namespaces 1320
n-ary relationships 2493, 2506
NASA (National Aeronautics and Space Administration) 206
national health service (NHS connecting for health) 2086, 2087
national ID card 1526
national identification number (NINo) 2088
National Learning Network: Materials 382
National Security Agency of the Slovak Republic 2110
national security letters (NSL) 1521–1522
natural language front ends 747
natural language syntax 747
natural language, analysis and production of 726
natural language, analysis of 726
near real time (NRT) 849
nearest neighbour (NN) 51
NEEDS 382
negative elasticity 2692
negotiation 1025, 1032, 1033, 1034
neighboring objects 2687
NEON (National Ecological Observatory Network) 779
Nepabunna 1464
Index

Nest 978
nesting 1975
NetCube 2012, 2021, 2031
network availability levels (5-Nines) 1900
network level threats 2111
network model 208, 1460
networkable database 1309
network-level countermeasures 2080
networks 726, 728
Ngaanyatjarra Council 1464
NIME (National Institute of Multimedia Education) 372
Niri-Niri 1468, 1469
NISO (National Information Standards Organization) 487
NIST Model 2103, 2107
NIST Model of RBAC 2103
NMC (New Media Consortium) 364
NNs (neural networks) 1189, 1191, 1194, 1198, 1199, 1200
NNs, computing 2168
NNs, classification 1403
NNs, feed-forward 1194, 1199
node swapping 2212
nominal attributes 2004
nominal attributes, transformation of 2004
non-collaborative servers 1108, 1109, 1110, 1111, 1112, 1113, 1115, 1116, 1118, 1122, 1123
non-monotonic reasoning paradigm 2261
nonstandard/complex transformation 849
normalization 209, 211, 2065, 2066
normalized work effort 2002, 2006
Northern Territory Library and Information Service 1464
NSDL (National Science, Mathematics, Engineering, and Technology Education Digital Library) 382
NULL 2480
Nyquist-Shannon sampling theorem 2568, 2570
NYSHIS 1801

O

object constraint language (OCL) 592, 639
object data model 1012
object inclusion 445
object model 1028
object related database 2289
object security constraint language (OSCL) 639
object-oriented benchmarks 1227
object-oriented databases 348, 1127, 1141, 1142
object-relational benchmarks 1227
object-relational database management system (ORDBMS) 18, 27
ODMG (Object Data Management Group) 147, 352
OG (occurrence graph) 1029
OG tool 1026, 1029
OLAP (online analytical processing) 15, 27, 61, 86, 210, 679, 680, 681, 682, 697, 700, 701, 829, 831, 961, 1780, 1786, 2012, 2108, 2510
OLAP applications 2324
OLAP component 2518
OLAP queries 831, 2326
OLAP systems 829
OLAP, database cluster 829
OLAP, freshness-aware scheduling 838
OLAP, performance evaluation 841
OLAP, physical design alternatives 834
OLAP, query routing 836
OLAP, system architecture 832
OLAP, transaction model 833
OLAP-SQL 979, 986
OLTP (online transaction processing) 63, 86, 831, 1914
OLTP/OLAP cluster architecture 831
OLTP/OLAP database cluster 830
on-air strategy 1117–1119
one-sum weighted association rules 2668
one-sum weighted itemsets 2666
one-sum weighted transaction database 2666
one-to-many relationships 208
online assessment, types of 1292
online assessments, electronic tools for 1291
online assessments, evaluation of 1293
online asynchronous collaborative discussion environment 1576
online communities 1576
online data 1839, 1839–1843
online decision support systems (ODSS) 829
online transactional processing 2100
on-mobile location-dependent information processing 1255
onomastics 1802
ontologies 1453, 2348, 2410, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2462, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471
ontology management systems 2452
OO (object-oriented) conceptual model 573
OO database 487
OO model 442, 726
open source code forges 2301
open source databases (OSDBs) 887, 893
open word assumption (OWA) 265, 2377
openURL 1406–1407
OpenVES 382
operating systems (OSs) 1501, 1508, 1904
operation and maintenance (O&M) 862
operational linkages 874
opportunistic data structures 199
optimistic combination 2285
optimization 214
optional arc 93
optional sources 2485
optimistic and combinations 2286
Oracle 206, 349
Oracle database grid 1930
Oracle grid 1669
Oracle grid control 1931
Oracle text 935
organizational decision support 1604
organizational learning 1638, 1640, 1644, 1649
organizational model 99
OSS (open source software) 887
OSS development teams 797
outcomes-based curriculum 1313
outer product 1085, 1093, 1094, 1095, 1097, 1102
outlier 394
outlier detection 394
outsourced database service (ODBS) 2204, 2205–2207, 2208, 2209, 2213, 2215, 2216, 2219
ownership proof 2224, 2230, 2234, 2241

P

PALS (Publishers and Librarian Solutions) 323
parallel join 660
parallelism 847, 854
parameterized views 1666
parameters 965
parsing 745
partial elasticity 2693
partial global serialization graph (PGSG) 1260
participation 2493, 2502
participation relationships 2506
partition and replicate strategy (PRS) 662, 666
partitioned replicas (PRs) 674
partitioning 660, 851, 968
partitioning method 441
partitioning strategies 666
patient information system, wireless integration of 1357
patient record number (PRN) 1387, 1388, 1389, 1390
patrilineal genealogy 958
pattern recognition 726
PBS TeacherSource 382
PDAs (personal digital assistants) 1310
PDAs, interfaces and connectivity 1365
Peppimenarti 1464
performance comparison 1200
performance evaluation 1226
performance measurement metric 1200
performance measurement tools 1226
performance metrics 1025, 1033, 1233
performance requirements 1447
PERINORM database 1529
periodic data 225
periodicity 1035
personal data 2088
perturbation approaches 2270
perturbation-based techniques 2105
perturbed database 2274
Petri net 1026
PFRD-H (hash-partition fact and replicate dimensions strategy) 667
phishing 1822
Phpmyadmin 820
physical algebra 2510, 2518
physical countermeasures 2082
physical design alternatives 834
physical model 1010
pipelining 847, 854
Pitjantjatjara 1462
Pitjantjatjara Land Rights Act 1981 1462
planned disconnection mode 1263
pods sensor networks 1571
point-in-time recovery (PiTR) 21
policy 1472
policy function 1664
politics 1802
polytrees 2019
Port Augusta 1464
portable document format (PDF) 1383
portfolio management 2657
portfolio selection 2658
position weight matrices (PWM) 2633
positioning aggregation 1245
possibilistic approach 145
possibilistic model 148
possibility distribution 107, 138
post-deployment IT changes 1756, 1773
PostgreSQL database 1572, 1574
post-join 1256
post-pruning 2004
PoTree 404
precision 1734
pre-conditioned substitution 443
Pred(%) 2007, 2008
predicate 1669
predicate logic 261
prediction at level 1 2005
prehospital database system 1344
prehospital patient care records (PCRs) 1345, 1348
pre-join 1256
prepare phase 1989
pre-serialization transaction management model 1260
previous knowledge 836
primary artifacts 896
primary-key criticality 2225, 2229
prime factor encoding algorithm 2330
prime factor encoding scheme 2328
prime factor scheme 2328
prime index tree 2330
principle of irrelevance of syntax 2267
printed circuit board 1085, 1086, 1087, 1088, 1090
privacy conscious entities (PCEs) 2131
privacy legislation in the European Union 1831–1843
privacy preserving data mining 2268, 2274
probabilistic inference 2023
probabilistic reasoning 726
probabilistic relational models 2016
probabilistic weight matrix 2634
probability 728
probability distribution function (PDF) 2015
problem solving environments 1453
problem transformation (PT) methods 316
processes, coordination in 802
product characteristics 2005
product data management (PDM) system 340
product life cycle 339
production management 342
production of natural language 726
productivity 2002
prohibition of compilation 2094
project context 2005
project database 2000
project size data 2005
projection 1246
projects, expansion of 943
promotion model 1261
PROOVE environment 1013
proper interpretation of the results 2002
propositional logic 261
protein databases 2632
protein sequence motifs 2632
proteins 2632
PROTEUS 1270
protocol 1383, 1461
provisioning 1934
public watermarking 2228–2229
purchase order application 528
pure bending tester 2191
pure containment query 2069
query body 1008
query by example 2282
query by icon (QBI) 1007
query center 1191
query graph 1013
query head 1008
query integration system (QIS) 487
query interaction 992
query language 1003
query languages, PQL 487
query logs 1199
query mapping 1004
query modification 1664
query optimization 2059, 2076, 2077, 2300, 2536
query point 1191
query processing 1251, 1252
query processing engine 2288
query refinement engine 938
query routing 836
query routing algorithms 842
query routing strategies 836
query routing, cache approximation 837
query semantics 2516
query set size control 2105
query translator 2288
query user interface (QUI) 2482
query window 1013
query-based perturbation 2106
query-by-browsing (QBB) 1011
query-by-example (QBE) 1011, 1199
query-dependence 836
querying system, cooperative 136
querying system, navigational 136
querying system, self-correction 136
random sample queries 2106
range query 2050
ranking engine 939
rapid failover 1916
rapid privacy preserving algorithm 1050–1061
RDBMSs (relational database management systems) 14, 27, 206, 258, 2348, 2454, 2455, 2457, 2470
RDBMS, storing topic maps 2351
RDF (resource description framework) 2352, 2360, 2361, 2362, 2363, 2366, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2378, 2379, 2380, 2381, 2382, 2383, 2452, 2455, 2466, 2469, 2471
RDF relationships 2353
RDF schema 2358
RDF/S ontology 597
RDF/S queries 596
RDF-based approach 2348
RE (requirement engineering) 570, 573
Real ID Act of 2005 1511
Real ID Act, impacts and obstacles 1515
real-time constraints 1023
reasoning, chains of 727
reasoning, nonmonotonic 727
records of achievement (RoA) 1315
records, confidentiality and protection 2094
reference information model (RIM) 1384
refinement 442, 444
refinement proofs 1181
region-based approaches 1192
region-based learning approach 1192
region-based retrieval 1192, 1193, 1194
regions 1193
registration techniques 1743
regulators 1787
relation definitions 492
relation schema 137
relational algebra 137, 1134, 1139
relational algebra set operations 1248, 1249, 1250
relational benchmarks 1226
relational calculus 137
relational databases 136, 208, 238, 262, 346, 487, 1128, 1129, 1134, 1445
relational databases sources 1959
relational databases, global constraint checking in 566
relational models 726, 1011
relational sources 596
relative validity interval 1023
relaxed check-out mode 1263
relevance feedback (RF) 1191, 1192, 1194, 1197, 1200, 1202, 1203
reliability/availability 849
remote databases 1236
remote servers 1252
remote-to-local (R2L) attack 385
repartitioning cost (RC) 669
replication 665, 839, 1284
replication for availability 663
representation techniques 1003
representational IQ criteria 2149
resiliency 1901
resource management 1450
resource reservation 1025
response time 1734
restricted access 1834–1843
restriction-based techniques 2105
retrieved global database 2054
reverse engineering 2489
reverse-engineering methodology 2496
rich media 1290
rich media library 1464
rigid gap motifs 2635
risk assessment 1901
risk management 1789
robust watermarking 2226–2228
role-based access control (RBAC) 2102, 2107
Roll Up 977
rollback queries 232
roll-up operator 963
rotation 973
rough set 1127, 1128, 1133, 1134, 1137
rough set theory 1497, 1498, 1499, 1505, 1507
routing strategies, conventional 836
row level security (RLS) 1669
RTDB (real-time databases) 1020, 1021, 1022, 1024
RTDB verification 1027
RTDB-management systems 1020
R-tree 402
Rubistar 1295
rubric 1292
rubric generation 1294
rule discovery process 242
rule-based framework 1666
RUP (rational unified process) 1876, 1877, 1878, 1889, 1892, 1893, 1894, 1895
S
SAGE 206
sanitization 2130
saturated query 2015
scalability 1470, 1902
scanners 1477
schema evolution 224
schema integration 2455, 2456, 2463, 2468, 2471
schema language 350
schema matching 282, 283, 284, 285, 290, 292, 293, 294, 296, 297, 299, 300, 301, 302, 303, 305, 306
schema modification 224
schema versioning 224
schema-level methods 285–290
science domains, collaborative information management system 1446
science domains, information management challenges 1447
SCM (supply chain management) 340, 656, 2573, 2587, 2590
SCM, Web-based 341
scripting languages (PHP) 887
SDAI (STEP Standard Data Access Interface) functions 353
SDAI functions, requirements and implementation of 353
search engine 2130
search trees 197
secondary artifacts 896
secondary event 92
secondary memory 200
secondary structure 2649
secondary structure elements (SSEs) 2649
secracy, integrity, and availability 2128
sectioners 939
secure sockets layer (SSL) 1384, 2084
security 1267, 1466, 1467, 2129
security and access rights 1447
security and SSO 1450
security breaches 2079, 2110
security identification number (SID) 1666
selection conditions on tuples 2286
selection predicate 2300
self-organising map (SOM) 66
semantic data models 442, 445
semantic heterogeneity 2476
semantic integrity 220
semantic integrity constraint checking 550
semantic modeling networks 539
semantic models 2348
semantic network diagram 682, 687, 689
semantic optimization 2065, 2066, 2068
Semantic Web, The (SW) 596, 1934, 2384, 2385, 2386, 2387, 2399, 2401, 2402, 2403, 2448, 2450, 2456, 2468, 2470, 2471, 2451, 2384, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2464, 2465, 2466, 2467, 2471
Semantic Web applications 258
Semantic Web integration middleware architecture (SWIM) 598
SWIM logic framework 599
SWIM mapping rules 602
SWIM query reformulation 604
Semantic Web languages 2360, 2363
semantic-distance metric (SDM) 488
semantic-lock technique 1024
semantics 261, 2484
semantics-based techniques 616
semi-periodic data 225
semi-planned downtime 1909
Sendmail program 2110, 2117
seniorit 1466
sensitive itemset 2274
sensitivity 1466
sensor networks 1020, 1022, 1031, 1568
sensor networks, real-time database 1031
sentence, production of 747
Index

SEQUEL (structured English query language) 206
sequence patterns 2633
sequential scan 197
server-based database 893
servers 1240, 1241, 1243, 1251, 1252
serviceability 1902
service-oriented architecture (SOA) 889, 893, 1270, 1935
session high-jacking 2112
shared-nothing cluster 32
shear tester 2191
SHOE 2386, 2402
short messaging service (SMS) 1414–1415
signature files 197
Silene Hawaiensis 1569, 1577
SilkRoute 1964
silos of applications 1935
silos of computing 1935
similarity measures 2158
simple object access protocol (SOAP) 529
simplification 220, 2065, 2066, 2068, 2069
simplified query semantics 2517
simplifying and power (SP) theory 726
simulation model 1021
simultaneity 968
single sign-on (SSO) 1290
single-label classification 309
singular value decomposition (SVD) 1192
site transaction manager (STM) 1260
skeptical combinations 2285, 2286
sliding window 2045, 2050
Slovenian Personal Data Protection Act (1999) 2088, 2093, 2096
small mobile host (SMH) 1262
smoothing 2005
snapshot data 225
sniffing 2111
social artifacts 896
Social Security Administration (SSA) 1829–1843
soft deadline 1023
software agents 2384, 2385
software description 1365
software development, coordination in 804
software engineering datasets 2001, 2006
software engineering problems 2001
software engineering projects 2001
software engineering repository 2002
software protocol 1461
Software Technology Transfer Finland (STTF) 2001
software tool solutions 2124
software-development life cycle 1029
source data sets (SDS) 2696
source instability 849
source schema 2053
source system 1258
space complexity 1058
space efficient implementations 199
SPARQL 2357
spatial analysis 785, 786, 787, 792, 796
spatial association rules (SAR) 2406
spatial component 786
spatial data 782, 783, 786, 787, 791, 793, 796, 1142, 1146, 1147, 1755, 2686
spatial data, inconsistencies in 2686
spatial descriptors 2277
spatial indexing 402
spatial indexing, R-tree 402
spatial knowledge management 2685
spatial queries 997
spatio-temporal databases 987, 987–1002
spatio-temporal indexing 401, 404
spatio-temporal queries 1000
spatio-temporal visual query environment 990
SpecAlign 1268
specialization constraints 446
specification 442, 1025, 1030, 1033, 1034
specification set 2395, 2396, 2397, 2399, 2400
split mode 1259
split-brain syndrome 34
SPOT image 1744
Spunbond 2182, 2191
SQL (structured query language) 27, 206, 211, 1445, 1669, 2451, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2466, 2467, 2468, 2469, 2470
SQL code poisoning 2118, 2118–2128
SQL code poisoning attack 2119
SQL code poisoning principles 2119
SQL code poisoning techniques 2122
SQL code poisoning, definition 2128
SQL for peers 1847
SQL injection 2113
SQL injection attack 2118
SQL queries 2118
SQL standards, PostgreSQL 18
SQL Web hacking, protection from 2123
SQL, database 2127
SQL, fuzzy (SQLf) 143
St. John of God 1464
stakeholder interest 1833–1843
standalone alliance 957
star schema 87, 681, 695, 699
static multidimensional histograms 169
static one-dimensional histograms 168
static weights 141
static/dynamic system 265
statistical database security 2100, 2104
statistical reasoning 1191, 1192, 1194, 1195
statistical reasoning mechanism 1194
<table>
<thead>
<tr>
<th>Term</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>stemmers</td>
<td>939</td>
</tr>
<tr>
<td>STEP (Standard for the Exchange of Product Model Data)</td>
<td>344</td>
</tr>
<tr>
<td>stereoscopic display</td>
<td>1159</td>
</tr>
<tr>
<td>stock measures</td>
<td>97</td>
</tr>
<tr>
<td>storage concepts</td>
<td>2348</td>
</tr>
<tr>
<td>storage concepts, evaluation of</td>
<td>2353</td>
</tr>
<tr>
<td>storing personal digital information</td>
<td>2353</td>
</tr>
<tr>
<td>storing topic maps</td>
<td>2352</td>
</tr>
<tr>
<td>strict time constraints</td>
<td>849</td>
</tr>
<tr>
<td>string metrics</td>
<td>2307</td>
</tr>
<tr>
<td>structural motifs</td>
<td>2648</td>
</tr>
<tr>
<td>structural patterns</td>
<td>2060</td>
</tr>
<tr>
<td>structure index</td>
<td>2062</td>
</tr>
<tr>
<td>structure, mediating</td>
<td>873</td>
</tr>
<tr>
<td>structure-centric approach</td>
<td>2350</td>
</tr>
<tr>
<td>structured database schema</td>
<td>441</td>
</tr>
<tr>
<td>structured database schema, specialized class-machine</td>
<td>441</td>
</tr>
<tr>
<td>student information system</td>
<td>1290</td>
</tr>
<tr>
<td>subject categories (SCs)</td>
<td>495</td>
</tr>
<tr>
<td>subjective norms</td>
<td>1874</td>
</tr>
<tr>
<td>substitution refinement</td>
<td>1180</td>
</tr>
<tr>
<td>substitution transitions</td>
<td>1026</td>
</tr>
<tr>
<td>sui generis</td>
<td></td>
</tr>
<tr>
<td>summary care records (SCR)</td>
<td>2095</td>
</tr>
<tr>
<td>summary work effort</td>
<td>2006</td>
</tr>
<tr>
<td>summary-schemas hierarchy</td>
<td>490</td>
</tr>
<tr>
<td>summary-schemas model (SSM)</td>
<td>486</td>
</tr>
<tr>
<td>SUMO</td>
<td>2386</td>
</tr>
<tr>
<td>supervised learning</td>
<td>1191</td>
</tr>
<tr>
<td>support vector machine (SVM)</td>
<td>1193</td>
</tr>
<tr>
<td>SUSHI (Standardized Usage Statistics Harvesting Initiative)</td>
<td>325–326</td>
</tr>
<tr>
<td>sustainable development</td>
<td>778</td>
</tr>
<tr>
<td>sustainable development, effective</td>
<td>788</td>
</tr>
<tr>
<td>sustainable development, efficient</td>
<td>792</td>
</tr>
<tr>
<td>sustainable development, inefficient</td>
<td>795</td>
</tr>
<tr>
<td>symbolic data analysis</td>
<td>656</td>
</tr>
<tr>
<td>symbolic object warehouse</td>
<td>649</td>
</tr>
<tr>
<td>symbolic object warehouse, architecture</td>
<td>648</td>
</tr>
<tr>
<td>symbols constraint</td>
<td>2636</td>
</tr>
<tr>
<td>symmetric multiprocessor (SMP)</td>
<td>21, 1917</td>
</tr>
<tr>
<td>synchronous communication</td>
<td>1681</td>
</tr>
<tr>
<td>synopsis data structures</td>
<td>166</td>
</tr>
<tr>
<td>syntax</td>
<td>2484</td>
</tr>
<tr>
<td>synthetic benchmark, definition</td>
<td>1233</td>
</tr>
<tr>
<td>SysML</td>
<td>1879, 1889, 1897</td>
</tr>
<tr>
<td>system architecture</td>
<td>2111, 2288</td>
</tr>
<tr>
<td>system design expansion</td>
<td>1769</td>
</tr>
<tr>
<td>system enhancement</td>
<td>1770</td>
</tr>
<tr>
<td>system hardware</td>
<td>1365</td>
</tr>
<tr>
<td>system identification</td>
<td>2567, 2569, 2570</td>
</tr>
<tr>
<td>system maintenance, ease of</td>
<td>1735</td>
</tr>
<tr>
<td>system performance analysis</td>
<td>1368</td>
</tr>
<tr>
<td>system stability</td>
<td>2570</td>
</tr>
<tr>
<td>tabular data</td>
<td>1839, 1839–1843</td>
</tr>
<tr>
<td>TAE database, transactions for</td>
<td>2561</td>
</tr>
<tr>
<td>tag clouds</td>
<td>1416</td>
</tr>
<tr>
<td>teacher education</td>
<td>1291</td>
</tr>
<tr>
<td>teaching transparently</td>
<td>1294</td>
</tr>
<tr>
<td>technological colonisation</td>
<td>1470</td>
</tr>
<tr>
<td>technology acceptance model</td>
<td>1874, 1868</td>
</tr>
<tr>
<td>technology implementation barriers</td>
<td>1359</td>
</tr>
<tr>
<td>technology of usability engineering</td>
<td>1578</td>
</tr>
<tr>
<td>telecommunication</td>
<td>1529</td>
</tr>
<tr>
<td>teledicine</td>
<td>485</td>
</tr>
<tr>
<td>teleology</td>
<td>5</td>
</tr>
<tr>
<td>temporal data, querying</td>
<td>232</td>
</tr>
<tr>
<td>temporal pi-patterns</td>
<td>1210</td>
</tr>
<tr>
<td>temporal queries</td>
<td>998</td>
</tr>
<tr>
<td>temporal relational database in stance</td>
<td>1207</td>
</tr>
<tr>
<td>temporal restrictions</td>
<td>1021</td>
</tr>
<tr>
<td>temporal visual query environment (TVQE)</td>
<td>990</td>
</tr>
<tr>
<td>temporary component</td>
<td>2521</td>
</tr>
<tr>
<td>Teradata</td>
<td>206</td>
</tr>
<tr>
<td>tertiary structure</td>
<td>2649</td>
</tr>
<tr>
<td>test collections, OHSUMED</td>
<td>499–504</td>
</tr>
<tr>
<td>(Oregon Health Science University’s MEDLINE)</td>
<td>499–504</td>
</tr>
<tr>
<td>text categorization (TC)</td>
<td>933</td>
</tr>
<tr>
<td>text mining</td>
<td>932, 2130</td>
</tr>
<tr>
<td>text sanitization</td>
<td>2133</td>
</tr>
<tr>
<td>text summarization</td>
<td>933</td>
</tr>
<tr>
<td>textual language</td>
<td>980</td>
</tr>
<tr>
<td>texture</td>
<td>1198</td>
</tr>
<tr>
<td>theoretic-information measures</td>
<td>2640</td>
</tr>
<tr>
<td>theory of meaning</td>
<td>283, 284, 285, 291, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302</td>
</tr>
<tr>
<td>thesauri</td>
<td>939</td>
</tr>
<tr>
<td>thesauri, MEDTHES (medicalthesaurus)</td>
<td>486, 492, 494, 495, 499, 500, 502</td>
</tr>
<tr>
<td>thesauri, MeSH (medical subject headings)</td>
<td>486, 487, 492, 493, 494, 499, 502</td>
</tr>
<tr>
<td>thesaurus maintenance</td>
<td>492</td>
</tr>
<tr>
<td>thesaurus structure</td>
<td>492</td>
</tr>
<tr>
<td>Thiessen polygons</td>
<td>1574</td>
</tr>
<tr>
<td>threats</td>
<td>2111</td>
</tr>
<tr>
<td>three dimensional (3-D) virtual world, environment capabilities</td>
<td>2606</td>
</tr>
<tr>
<td>three dimensional (3-D) virtual worlds in education</td>
<td>2595</td>
</tr>
<tr>
<td>three dimensional (3-D) virtual worlds, educational opportunities</td>
<td>2606</td>
</tr>
<tr>
<td>three-tier architecture</td>
<td>893</td>
</tr>
<tr>
<td>tight coupling</td>
<td>784</td>
</tr>
<tr>
<td>time performance</td>
<td>2556</td>
</tr>
<tr>
<td>timestamp</td>
<td>1023, 1032</td>
</tr>
<tr>
<td>timing constraint</td>
<td>1023, 1027, 1028</td>
</tr>
<tr>
<td>timing diagram (TD)</td>
<td>1030</td>
</tr>
<tr>
<td>Tinley Park Economic Development</td>
<td>1695</td>
</tr>
<tr>
<td>TKPROF</td>
<td>682, 700</td>
</tr>
<tr>
<td>topology</td>
<td>1461</td>
</tr>
<tr>
<td>total information awareness system (TIA)</td>
<td>1520</td>
</tr>
<tr>
<td>TOVE measurement ontology</td>
<td>2387, 2392, 2396</td>
</tr>
<tr>
<td>transaction locator</td>
<td>1053</td>
</tr>
<tr>
<td>transaction model</td>
<td>833</td>
</tr>
<tr>
<td>Transaction Processing Performance Council (TPC)</td>
<td>1226</td>
</tr>
<tr>
<td>transaction properties</td>
<td>1023</td>
</tr>
<tr>
<td>transaction routing</td>
<td>837</td>
</tr>
<tr>
<td>transaction routing, affinity-based</td>
<td>837</td>
</tr>
<tr>
<td>transactional integrity</td>
<td>1916</td>
</tr>
<tr>
<td>transformation</td>
<td>847</td>
</tr>
<tr>
<td>transient data</td>
<td>225</td>
</tr>
</tbody>
</table>
transparent access to multiple bioinformatics information sources (TAMBIS) 487
transport layer security (TLS) 2084
TREC 500
TREC9 499
tree like models, XML Authority 544, 545
tree-based strategy 2313
tree-indexed data 2204–2222
tree-like models 544
trees 728
tree-shaped structures 941
trial system implementation 1366
trial system testing 1366
trial system, design considerations for 1360
triangulation 1882
trigger 220
truth table 736
truth, correspondence vs. coherence views 7
tuple combination 2285
tuple comparison 2284
tuple relational calculus (TRC) 137
tuple-based approach 2054
twikis 1414
two-phase commit protocol (2PC) 34
two-phase-commit (2PC) 833
type definition 731

U
UB2SQL 1168
UB2SQL, architecture of 1171
UB2SQL, construction of 1183
UB2SQL, overview of 1170
UML (unified modeling language) 346, 533, 537, 1021, 1168, 1876, 1877, 1878, 1879, 1889, 1890, 1892, 1893, 1894, 1895, 1896, 1897, 2360, 2361, 2362, 2363, 2366, 2367, 2368, 2370, 2376, 2377, 2378, 2382, 2383
UML models, enhancing 1581
UML-based methods 533
UML-based models 536, 543
unadjusted function points 2006
unbounded-choice substitution 444
uncertainty 341, 2276
uncertainty-based models for image databases 2279
unified medical language system (UMLS) 492
UNIQUE constraints 352
uniqueness constraints 213
unit measures 97
universals 5
unplanned downtime 1909
unsaturated query 2015
unstructured joins 2063
unsupervised learning 726
untrusted servers 2204, 2206, 2219, 2220
update theory 2262
update, definition 2267
updates, roadmap of 2261
URL, poisoning 2121
usability engineering 1577
usage control 2103
use-case modelling 575
usefulness 1874
user friendly 2113
user interface 1464
user roles 1666
US-VISIT pilot 1517
Utju (Areyonga NT) 1464

V
validation 1755
validity 1292
validity interval 1023, 1028, 1033
validity, construct 1305
value adjustment factor (VAF) 2006
value dissociation 2134
value-based approach 2054
VARRAY 687, 688
verification 1755
version freshness 840
vertical fragmentation 2543
vertical partitioning 2297, 2300
vertical partitioning 2544
Vesuvio Vulcan 2281
VHA (Veterans Health Administration) 486
virtual dimension 579
virtual enterprise (VE) 338
virtual laboratory 1453
virtual libraries, enhanced and evaluated 380
virtual networking infrastructure 1667
virtual organization contract 1453
virtual organizations 1448
virtual private database (VPD) 1663, 1669
virtual reality (VR) 1151
virtual world implications in education 2607
virtual worlds 2596
virus 2112
VISIONARY 1011
VistA 486
visual data mining 782, 794
visual metaphor 1009
visual query systems 987, 987–1002, 989
Visual Studio .NET 542
visualization tools 1576
visualized data 1575
vocabulary definition exchange (VDEX) specification 373
VOODOO language 1014
Voronoi diagrams 1573, 1575
Voronoi diagrams, generation and rendering 1574
VQLs (visual query languages) 1003, 1009
VQLs, diagrammatic 1006
VQLs, form-based (tabular) 1005
VQLs, hybrid 1008
VQLs, iconic 1007
VQLs, representation techniques 1005
VQLs, sketch-based 1008
VRMiner 1151
VRMiner, real view 1155
VRMiner, schematic view 1154

W
W3C (World Wide Web Consortium) 210
War on Terror, The 1514–1515
warranted practices 1292
watermark 2223–2244
waveguides 1084, 1085, 1087, 1088, 1089, 1090, 1101, 1102, 1103, 1104
wavelet data compression scheme 2327
wavelet decoding 2327
wavelet reconstruction process 2328
wavelet transform array (WTA) 2327
wavelets 2050
WBP with bitmap join indexes (WBP+JB) 668
weak attributes 965
weak irrelevance of syntax (WIS) 2264, 2267
weather data distribution map 1571
weather data spatial distribution 1571
Web application 2111
Web application (Webapp) 893
Web application development platforms, .NET 529
Web application development platforms, J2EE 529
Web hacking 2123
Web ontology language (OWL) 2360, 2361, 2362, 2363, 2366, 2367, 2368, 2369, 2370, 2371, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2455, 2456, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2469, 2470, 2471
Web page 2619
Web page as a database 2616
Web page, legal protection of 2616
Web pages, protection of 2625
Web portals 1270, 2079, 2081
Web portals, security threats 2109
Web powered databases 2118
Web reality 2473
Web server 2084, 2117
Web site design 1363
Web sites 1691
Web sites, evolution of 1683, 1691
WebAlliance 957
Web-based applications 340
WebCT 373
WebFINDIT 904
WebFINDIT architecture 916
WebFINDIT, design principles of 906
Web-powered databases, countermeasures 2079
Web-powered databases, legally sensitive 2110
Web-powered databases, security threats 2109
weighted association rule (WAR) 2657, 2682, 2683
weighted association rule mining (WARM) 2660, 2662
Weka toolkit 2001, 2002
wide area network (WAN) 1455, 1468, 1912
wikis 1413–1414
window constraint 2636
Windows advanced server security 1366
Windows Live Academic 1410–1411
wireless access client-server synchronization 1365
wireless communication 1257
wireless computing 1239
wireless technology 1255
WLS modeling question 1602
word-based indices 198
word-braker 939
WordNet 486, 488, 492, 493, 502
work effort 2001
workflow application 1756, 1762
workflow application project 1762
workflow management 856
workload 2570
workload generator 1924
workload model 1233
workload-based partitioning (WBP) 667
World Intellectual Property Organization (WIPO) 2618
World Wide Web (WWW) 363
World Wide Web Consortium (W3C) 529
worm attack 388
Wu and Palmer algorithm 494
X
XAR-Miner in AR mining 523
XBD 1965
XConstraint Checker 556
XConstraint Checker architecture 556
XConstraint Decomposer 559
XDM (XML for data mining) 1320
XDM data items 1324
XDM database schema and state 1329
XDM statements 1326
XDM system, implementation of prototype 1331
XDS 1974
XDSQuery 1979
XDSSchema 1975
XDW requirement model 586
XER (extensible entity relationship model) 535
XGrammar 540
XLMiner 1396
XML (extensible markup language) 346, 487, 527, 570, 729 1014, 1321, 1959, 2473
XML benchmarks 1227
XML constraint representation 554
XML data 505, 2524
XML data extraction and transformation 509
XML data sources 1961
XML data, advantages of relational transformation 512
XML data, multi-relational databases of 510
XML databases 347
XML databases, multiple 550
XML designer 542
XML documents 210, 571, 2476, 2488, 2489, 2490, 2494
XML document warehouse (XDW) 570
XML document warehouse (XDW), architecture of 576
XML DTD 530
XML elements 2494
XML in Oracle 2353
XML interface 2484
XML metadata interchange (XMI) specification 529
XML modeling issues 531
XML query language 1732
XML schema 531, 1321, 2494
XML sources 596
XML sources, native 1962
XML transfer 2528
Index

XML tree, indexed (IX-tree) 509
XML, conceptual modeling for 527
XML, constraint checking in 567
XML, constraints for 567
XML, data semantics in 2496
XML, entity relationship for (ERX) 534
XML, metadata representation with 530
XML, modeling issues in 530
XML-based database 1320
XML-enabled relational databases 1962
XML-enabled OLAP queries 2510
XMLSPY 545
XQBE query 1015
XQuery 2476
XQuery subquery 2485
XQuery textual language 1015
X-ray 1963
XSLT (extensible style language transformation) 1383
XTABLES 1964

Y
Yankunytjatjara 1462
Yolngu 957

Z
Zettair 499, 500
zone regression method 2000
Zoom Star 657