

THE LIBRARY OF CONGRESS

Dewey Section

To: Jonathan Furner, Chair
Decimal Classification Editorial Policy Committee

Cc: Members of the Decimal Classification Editorial Policy Committee
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Via: Michael Panzer, Editor in Chief
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Re: 025.04 Information storage and retrieval systems

Relocations

From	To	Topic
025.04	004	Information systems
025.04	004	Front end systems
025.04	005.74	Interdisciplinary works on databases
025.04	005.74	Interdisciplinary works on query languages

In EPC Exhibit 137-12.2, we suggested that 025.04 had been the “beneficiary” of “scope creep”:

Fundamentally, institutional repositories are online archives / digital libraries, which makes 020 the best broad home for them. Moreover, the LCSH Institutional repositories had been editorially mapped to 025.04 Information storage and retrieval systems. . . .

But is 025.04 Information storage and retrieval systems the right class for institutional repositories? (Similarly, is 025.042 World Wide Web the right class for digital libraries?) Historically, the phrase “information storage and retrieval systems” has referred to automated systems providing intellectual access (by way of a document citation) to bibliographic works on the basis of metadata and/or the occurrence of words in the text of those works. Modern information storage and retrieval systems (for example, search engines on the Web) often provide physical access (via links) to documents; in such contexts the intellectual access function is much less visible and is based on rather different assumptions, but the identification of literature relevant to a search query is still the primary function of information storage and retrieval systems (altogether consistent with its placement under 025 Operations of libraries, archives, information centers).

. . . The caption at 025.04—information storage and retrieval system—is a term that has often been used in the field with a narrower meaning than a componential analysis of its individual words supports; the broader meaning could encompass all libraries! We believe that the narrower meaning should govern 025.04. Unfortunately, it appears that, over time, 025.04 has been the “beneficiary” of “scope creep,” with digital phenomena being attracted to it [e.g., digital libraries, the World Wide Web] that are not information storage and retrieval systems in the narrow sense. We therefore anticipate coming back to 025.04 in the future to deal with this issue.

The following excerpts from the “Overall Introduction” to *Readings in Information Retrieval* (ed. Karen Sparck Jones and Peter Willett (San Francisco: Morgan Kaufmann, 1997) provide a solid basis for what should (or should not) be considered part of 025.04 Information storage and retrieval:

Information retrieval is often regarded as being synonymous with *document retrieval* and nowadays, with *text retrieval*, implying that the task of an IR system is to retrieve documents or texts with information *content* that is *relevant* to a user’s information need. (p. 1)

Document retrieval subsumes two related, but different, activities: *indexing* and *searching*. Indexing refers to the way *documents*, i.e., the items in the file, and *requests*, i.e., expressions of the user’s information need, are represented for retrieval purposes. Searching refers to the way the file is examined and the items in it are taken as related to a search *query*. (p. 1)

The great majority of early IR systems were designed for use with bibliographic databases; i.e., they provided access to *references* to the end documents rather than to the documents themselves, and indexing and searching were thus applied to document surrogates, such as titles or abstracts. However, the plummeting costs of online storage over the years have meant that it is now normal to search the full texts of documents. (p. 1)

The inherent richness of language means that the indexing and searching operations described above can never result in the “perfect” retrieval of DBMS [database management systems], where searches are for exact values, or ranges thereof. (p. 2)

The chart below shows topics named in the class-here note at 025.04 and comments on their fit there:

Topic in class-here note at 025.04	Comment on fitness of topic in 025.04
Search and retrieval in information storage and retrieval systems	Good fit; needs see reference to 025.524
Front-end systems	No unique tie between front-end systems and IR systems; minuscule literary warrant here
Comprehensive works on online catalogs integrated with information storage and retrieval systems	Given that online catalogs <i>are</i> information storage and retrieval systems, what is this?
Comprehensive works on automated storage, search, retrieval of information	Should be limited to storage, search, and retrieval in bibliographic/text databases; if limited in this fashion, note is redundant
Comprehensive works on information filtering systems	Good fit
Interdisciplinary works on databases	Only bibliographic and text databases here; interdisciplinary works better in 005.74
Interdisciplinary works on query languages	Only information retrieval query languages here; interdisciplinary works better in 005.74

The chart below shows Relative Index terms at 025.04 and comments on their fit there:

Relative Index heading at 025.04	Comment on fitness of heading at 025.04
Automated information systems	Only bibliographic and text information systems here
Campus-wide information systems--information science	
Online information systems	
Data banks	Only bibliographic and text databases here
Data bases	
Databanks	
Databases	
Query languages	Interdisciplinary works better in 005.74
Front-end systems	No unique tie between front-end systems and IR systems; minuscule literary warrant here
Front-end systems--information science	
Databases--information science	Good fit
Full-text databases	Good fit
Full-text databases--information science	Good fit
Information filtering systems--information science	Good fit
Information storage and retrieval systems	Good fit
Precision (Information science)	Good fit
Query languages--information science	Good fit
Recall (Information science)	Good fit
Relevance (Information science)	Good fit

Topics needing to be addressed/relocated are interdisciplinary works on databases and on query languages, information systems, and front end systems.

Only bibliographic and unstructured text databases should be classed in 025.04. To make this clear, we recommend adding a scope note at 025.04, adding a Manual note on concept-based retrieval vs. content-based retrieval, and adding built-number entries under 025.040285 for information retrieval of audio, image, and video content, as well as adding index-only entries for multimedia information retrieval and music information retrieval. We recommend relocating interdisciplinary works on databases and on query languages to 005.74, which will affect notes at both 025.04 and 005.74 and will affect indexing at 005.75*. The Manual note at 025.04, 025.06 vs. 005.7, 005.74, needs to be revised, calling for references to the Manual note to change as well.

Similarly, only information systems limited to the storage and retrieval of bibliographic and unstructured text data should be classed in 025.04. Information systems are a major subset of computer systems. The *Encyclopaedia Britannica*¹ characterizes an information system as “an integrated set of components for collecting, storing, and processing data and for delivering information, knowledge, and digital products,” whose “main components . . . are computer hardware and software, telecommunications, databases and data warehouses, human resources, and procedures. . . . Many information systems are primarily delivery vehicles for data stored in databases.” We recommend that “information systems” be added to the class-here note at 004 and that related Relative Index terms be moved there as well.

Any kind of information system can have a front end. We recommend relocating front end systems to the same class for online information systems, i.e., 004.

¹ <http://global.britannica.com/EBchecked/topic/287895/information-system>

A see-also reference leading from 025.524 to 025.04 brought 025.524 to our attention. The current scope note—“Using multiple kinds of information sources, e.g., the library catalog, reference books, automated information storage and retrieval systems”—is most straightforwardly read to say that the class applies only to works that treat multiple kinds of information sources. A scatter class-elsewhere note instructs us to “class information search and retrieval using a specific system with the system, e.g., searching an information storage and retrieval system devoted to medicine 025.0661.” But what is one to do with information search and retrieval using a specific kind of information source? And is the scatter class-elsewhere note really meant to apply only to a specific (information storage and retrieval) system and not to specific information sources of other kinds? The current notes appear to be silent on these questions. Is there good reason to treat information search and retrieval using a specific kind of information source differently from information search and retrieval using multiple kinds of information sources, or to treat information search and retrieval using a specific information storage and retrieval system differently from information search and retrieval using a specific information source of another kind? We are not aware of solid motivation for making such distinctions. We therefore recommend tweaking the scope note and the scatter class-elsewhere note so as to close up these gaps. Additionally, since the see-also reference from 025.524 to 025.04 leads to an implied comprehensive works topic, the note should instead be a class-elsewhere note, while a see reference should lead from 025.04 to 025.524. We also recommend adding a Manual note for 025.04 vs. 025.524.

The chart below shows LCSH currently mapped to 025.04 and suggests where they should be mapped:

LCSH mapped to 025.04	Where they should be mapped
Information networks	004.6, 021.65 (“networks” ambiguous here between telecommunications networks and consortia)
America Online (Online service)	004.678, 338.761004678 (“services” ambiguous here between the organizations providing the service and the communication services being provided)
eWorld (Online service)	
Microsoft Network (Online service)	
Online information services	
Data libraries	005.74
Microsoft Internet explorer [BT Browsers—Computer programs currently mapped to 025.04252 Search engines and 005.71376 Data communications programs for distributed computing]	006.78 [Multimedia systems] Programs (on the grounds that a browser is a program that retrieves, presents, and navigates information resources on the WWW) and/or 025.04202855376
Electronic information resources	027 (with digital libraries)
Electronic reference sources	028.7 (RI Reference works indexed here)
Children's electronic reference sources	
Girls' computer network resources	025.042 World Wide Web
Women's computer network resources	
Computer network resources	
World Wide Web	
World Wide Web--Business services	
World Wide Web--Personal home pages	
World Wide Web--Services	
Electronic government information	025.042, 352.3802854678

Electronic information resource searching	025.524
Clumps (Information retrieval)	Keep in 025.04
Cross-language information retrieval	Keep in 025.04
EPIC (Information retrieval system)	Keep in 025.04
Information storage and retrieval systems	Keep in 025.04
Keyword searching	Keep in 025.04
Online bibliographic searching	Keep in 025.04
Online bibliographic searching--Handbooks, manuals, etc.	Keep in 025.04
Online bibliographic searching--United States	Keep in 025.04
Z39.50 (Standard)	Keep in 025.04

005.7, 005.74 vs. 025.04, 025.06**Data sets, data files, databases**

Data sets are collections of data, possibly unstructured or variously structured. Data files and databases, although there are technical differences between them, are treated as the same for classification purposes and are a specific kind of data set.

Use 005.7 for the algorithms used in storing and retrieving collections of data. Use 005.74 for designing and searching databases, for programming and installing database management systems, in which the databases contain data that is structured or relatively structured.

Use 025.04 or 025.06 for indexing and searching bibliographic and relatively unstructured text databases.

Use 001–999 for the subject content of data sets and databases (and works discussing that content) as if the data sets and databases were books, e.g., chemistry data sets or databases 540. Do not use notation 028557 or notation 0285574 from Table 1 except for works that focus on the computer science aspects of the data sets or databases rather than the subject content.

If in doubt, prefer 005.7 and 005.74.

See also discussion at 011.39 vs. 005.3029, 016.0053, 025.0422.

025.04, vs. 025.040285 vs. 006**Concept-based retrieval vs. content-based retrieval**

Concept-based retrieval is retrieval that takes semantics into account, typically based on word meaning. The words may be found in the texts of resources stored in and retrieved from the system or in metadata assigned to the resources. Content-based retrieval is retrieval based on the syntactic features of the resources, e.g., the occurrence of word forms in a text (without taking their meanings into account), the patterns of shape and texture occurring in raster graphics images, frequency patterns in digital audio signals.

Use 025.04, without adding notation 0285 from Table 1, for works in which concept-based retrieval is emphasized and for works treating both concept-based and content-based retrieval.

Use 025.040285 and its subdivisions for works in which content-based retrieval is emphasized.

Use 006 and its subdivisions for works which emphasize the computational techniques that might be involved, for example, in content-based retrieval if the application of the techniques is not well-defined.

If in doubt, prefer in the following order: 025.04, 025.040285 and its subdivisions, 006 and its subdivisions.

025.04 vs. 025.524**Information retrieval**

Use 025.04 for works that emphasize theoretical aspects of information storage and retrieval systems, including their design and evaluation. Use 025.04 for comprehensive

works that treat both theoretical and practical aspects of information storage and retrieval systems.

Use 025.524 for works that emphasize practical aspects (e.g., search) of information storage and retrieval systems, for example, in the context of virtual reference services.

If in doubt, prefer 025.04.

004 Computer science

Class here data processing; selection and use of computer hardware; electronic computers; electronic digital computers; computer systems (computers, their peripheral devices, their operating systems), information systems; cyberinfrastructure; central processing units; adaptive computing systems; computer reliability; informatics; interactive, online processing; mobile computing; comprehensive works on hardware and programs in electronic data processing

Class computer modeling and simulation in 003.3. Class computer applications in a specific subject with the subject, plus notation 0285 from Table 1, e.g., computer applications in banking 332.10285; class informatics of a specific subject with the subject, plus notation 0285 from Table 1, e.g., bioinformatics 570.285

For computer programming, programs, data, see 005; for special computer methods, see 006; for engineering, manufacture, repair of computers, see 621.39. For a specific aspect of mobile computing, see the aspect, e.g., handheld computing devices 004.167, wireless communications 004.6, mobile operating systems for handheld computing devices 005.446; for a specific aspect of adaptive computing systems, see the aspect, e.g., reconfigurable architectures 004.22, hardware description languages 621.392, field-programmable gate arrays 621.395

See also 025.04 for information storage and retrieval systems; also 303.4834 for computers as a cause of social change; also 343.0999 for computer law; also 364.168 for financial and business computer crimes; also 371.334 for computer-assisted instruction (CAI); also 658.05 for data processing in management; also 794.8 for computer games

See Manual at 004–006 vs. 621.39; also at 004 vs. 005; also at 510, T1–0151 vs. 004–006, T1–0285

005.7 *Data in computer systems

Class here high-volume data sets

For data security, see 005.8

See Manual at 005.1 vs. 005.3; also at 005.7, 005.74 vs. 025.04, 025.06

*Use notation 019 from Table 1 as modified at 004.019

.74 *Data files and databases

Standard subdivisions are added for either or both topics in heading

Including data validation in file processing, comprehensive works on file sharing

Class here data file processing, data file and database management; interdisciplinary works on databases, on query languages

Class comprehensive works on data validation in 005.72; class information storage and retrieval systems in 025.04. Class data files and databases with regard to their subject content with the subject, e.g., encyclopedic databases 030, nonbibliographic medical databases 610

For specific types of data files and databases, see 005.75. For file sharing using specific means, see the means, e.g., file sharing using peer-to-peer networks 004.652, file sharing using an Internet hosting service 004.678; for query languages associated with specific types of data files and databases, see the type, e.g., SQL 005.756

See Manual at 005.74 vs. 005.436; also at 005.7, 005.74 vs. 025.04, 025.06

.75 Specific types of data files and databases

Including centralized files and databases; flat-file databases

For bibliographic and unstructured text databases, see 025.04

.04

Information storage and retrieval systems

Systems for storing and retrieving bibliographic resources or their surrogates, including text, audio, image, and/or video content

Including recall, precision, relevance

Class here bibliographic databases, unstructured text databases; search and retrieval in information storage and retrieval systems, concept-based retrieval; query languages for information storage and retrieval systems; comprehensive works on information filtering systems

Class interdisciplinary works on information filtering systems in 005.56; class interdisciplinary works on databases, query languages in 005.74. Class aspects of information storage for specific types of retrieval systems with the aspect for the type of system, e.g., mark-up languages for web retrieval systems 006.74, record formats for bibliographic retrieval systems 025.316

For computer science aspects of information storage and retrieval systems as database systems, see 005.74; for information storage and retrieval systems, bibliographies of web sites devoted to specific subjects, see 025.06; for search and retrieval use of information storage and retrieval systems in reference and information services, see 025.524. For a specific kind of information storage and retrieval system, see the kind, e.g., online catalogs 025.3132

See also 005.758 for semistructured document-oriented databases; also 658.4038011 for management use of information storage and retrieval systems

See Manual at 005.7, 005.74 vs. 025.04, 025.06

.040 285 6

Special computer methods

Class here content-based retrieval

Class concept-based retrieval in 025.04 Class works in which computational techniques of media representation and retrieval predominate in 006.5–006.7, e.g., works on computational techniques used in image representation and retrieval 006.6

.040 285 65

Digital audio

Class feature extraction from audio in 006.45

.040 285 66

Computer graphics

Class feature extraction from images in 006.42

.040 285 669 6

Digital video

Class feature extraction from video in 006.42

.06

Information storage and retrieval systems devoted to specific subjects

Class here bibliographies of web sites devoted to specific subjects, digital libraries devoted to specific subjects, documentation of specific subjects

See Manual at 005.7, 005.74 vs. 025.04, 025.06

.524

Information search and retrieval

Regardless of kind of information source used, e.g., library catalogs, reference books, information storage and retrieval systems

Class here search strategy

Class comprehensive works on information storage and retrieval systems in 025.04. Class information search and retrieval using a specific information source with the information source, e.g., searching an information storage and retrieval system devoted to medicine 025.0661

Dewey Decimal Classification

A			
I_a Ad hoc networks (Computer networks)	004.6		
I_a Adaptive computing systems	004		
I_a Adaptive routing (Computer network management)	004.6		
ADP (Computing)	004		
I_a America Online (Online service)	004.678		
I_a	338.761 004 678		
I_a Archival resources	027		
Archives	027		
<i>see also</i> Libraries			
P Automated information systems	004		
Automatic data processing	004		
I_a Autonomic computing	004		
B			
P Bibliographic databases	025.04		
P information science	025.04		
I_a Big data	005.7		
I_a Biometric identification	006.4		
I_a Bit error rate	004.6		
C			
I_a CA-Clipper	005.756 5		
Campus-wide information systems			
E computer science	004		
Central processing units	004		
Centralized databases			
computer science	005.75		
Character recognition	006.4		
I_a Children's electronic reference sources	028.7		
I_a Clumps (Information retrieval)	025.04		
Column family stores			
E computer science	005.758		
Column-oriented databases			
E computer science	005.758		
Column store databases			
E computer science	005.758		
Communications			
computer science	004.6		
<i>see also</i> Computer communications			
Communications networks			
computer science	004.6		
		Compatibility	
		computer science	004
		hardware	004
		Computer communications	004.6
		Computer hardware	004
		I_a Computer interfaces	004.6
		Computer interfacing	004.6
		Computer literacy	004
		I_a Computer network resources	025.042
			025.042
		Computer networks	004.6
		I_a Monitoring	004.6
		I_a Remote access	004.6
		I_a Scalability	004.6
		<i>see also</i> Computer communications	
		Computer programs	
		multimedia systems	006.78
		Computer reliability	004
		hardware	004
		Computer science	004
		Computer sorting	005.741
		I_a Computer system failures	004
		Computer systems	004
		Computers	004
		Concept-based audio retrieval	
		E information science	025.04
		Concept-based image retrieval	
		E information science	025.04
		Concept-based retrieval	
		P information science	025.04
		Concept-based speech retrieval	
		E information science	025.04
		Concept-based video retrieval	
		E information science	025.04
		I_a Constraint databases	005.75
		Content-based audio retrieval	
		P information science	025.040 285 65
		Content-based image retrieval	
		P information science	025.040 285 66
		Content-based retrieval	
		P information science	025.040 285 6
		Content-based speech retrieval	
		E information science	025.040 285 65
		Content-based video retrieval	
		P information science	025.040 285 669 6
		Content-based visual information retrieval	
		E information science	025.040 285 66
		CPU (Central processor)	004
		I_a Cross-language information retrieval	025.04
		Cyberinfrastructure	004

Relative Index

D		
P Data banks	005.74	
<i>see also</i> Databases		
N Data base management	005.74	
P Data bases	005.74	
<i>see also</i> Databases		
Data communications	004.6	
<i>see also</i> Computer communications		
Data files	005.74	
<i>see Manual at</i> 005.7, 005.74		
vs. 025.04, 025.06		
Data in computer systems	005.7	
I_a Data integration (Computer science)	005.74	
I_a Data libraries	005.74	
P	005.74	
Data processing	004	
Data sets	005.7	
<i>see Manual at</i> 005.7, 005.74		
vs. 025.04, 025.06		
Data transmission	004.6	
<i>see also</i> Computer communications		
I_a Data transmission systems	004.6	
P Databanks	005.74	
<i>see also</i> Databases		
Database management systems	005.74	
I_a Database searching	025.524	
P Databases	005.74	
computer science	005.74	
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<i>see Manual at</i> 005.7, 005.74		
vs. 025.04, 025.06		
P Datasets	005.7	
E dBASE III plus (Computer file)	005.756 5	
I_a dBASE for Windows	005.756 5	
Digital communications		
computer science	004.6	
Digital computers	004	
<i>see also</i> Computers		
Digital libraries	025.042	
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N specific subjects	025.06	
Distributed databases		
computer science	005.758	
Document-oriented databases		
E computer science	005.758	
Document stores		
E computer science	005.758	
Documentation		
specific subjects	025.06	
		DVD-Video discs
		I_a Authoring programs
		006.78
		E
		EDP (Computing)
		004
		Electronic computers
		004
		<i>see also</i> Computers
		I_a Electronic data interchange
		004.6
		Electronic data processing
		004
		<i>see also</i> Data processing
		Electronic digital computers
		004
		<i>see also</i> Computers
		I_a Electronic government information
		025.042
		I_a
		352.380 285 467 8
		I_a Electronic information resource searching
		025.524
		I_a Electronic information resources
		027
		I_a Electronic reference sources
		028.7
		I_a Entity-relationship modeling
		005.756
		I_a EPIC (Information retrieval system)
		025.04
		I_a eWorld (Online service)
		004.6
		I_a
		338.761 004 678
		Extranets (Computer networks) computer science
		004.678
		F
		Feature extraction
		P computer pattern recognition
		006.4
		File access methods
		computer science
		005.741
		File management systems
		computer science
		data file programs
		005.74
		File managers
		computer science
		data file programs
		005.74
		File organization
		computer science
		data files
		005.741
		I_a File organization (Computer science)
		005.741
		File processing
		databases
		005.74
		File structure
		computer science
		data files
		005.741
		I_a FileMaker pro
		005.756 5
		Files (Data)
		computer science
		005.74

Dewey Decimal Classification

Firmware	
hardware	004
Flat-file databases	
computer science	005.75
P Front-end systems	004
P computer science	004
Full-text databases	025.04
information science	025.04
G	
I_a Gateways (Computer networks)	004.6
I_a Girls' computer network	
resources	025.042
Graph databases	
E computer science	005.758
H	
Hardware (Computers)	004
Hashing (Computer science)	005.741
High-volume data sets	005.7
I_a Hot potato routing	004.6
I_a HTTP (Computer network	
protocol)	004.678
I	
I_a IBM computers	004
I_a IBM Database 2	005.756 5
Indexing	
computer science	005.741
Informatics	
computer science	004
I_a Information behavior	025.524
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<i>see also</i> Libraries	
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I_a Information literacy	028.7
I_a Information modeling	005.74
I_a Information networks	004.6
I_a	021.65
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information science	025.524
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use	028.7
I_a Information storage and	
retrieval systems	025.04
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computer science	005.74
specific subjects	025.06
I_a Information superhighway	004.678
P Information systems	004

Information technology	
computer science	004
I_a Institutional repositories	025.04
I_a Interactive computer systems	004
Interactive processing	004
Interfacing (Computers)	004.6
I_a International Computer Driving	
Licence	004
Internet	004.678
enterprises	338.761 004 678
information systems	025.042
I_a Internet access for library users	025.042
I_a Internet addresses	004.678
I_a Internet and teenagers	025.042
I_a Internet consultants	004.678
I_a Internet domain names	004.678
I_a Internet in children's libraries	025.524
I_a Internet in library reference	
services	025.042
I_a Internet in school libraries	025.042
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E Internet of things	004.678
I_a Internet service providers	004.678
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networks)	004.6
I_a Internetworking	
(Telecommunication)	004.6
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Key-value stores	
computer science	005.758
Key/value stores	
N computer science	005.758
I_a Keyword searching	025.04

L

Libraries	027
I_a Libraries and the Internet	025.524
Library consortia	021.65
Library information networks	021.65
Library networks	021.65
I_a Library resources	027
Library systems	
cooperation	021.65

M	
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Machine theory	
computer science	004
Magnetic ink character recognition	006.4
I_a Materialized views (Computer science)	005.74
Media centers	027
<i>see also</i> Libraries	
Merge sort (Computer science)	005.741
Merging data	005.741
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MICR (Computer science)	006.4
I_a Microsoft Access	005.756 5
I_a Periodicals	005.756 5
I_a Microsoft Internet explorer	006.78
I_a	025.042 028 553 76
I_a Microsoft Network (Online service)	004.678
I_a	338.761 004 678
Mobile computing	004
I_a Multidimensional databases	005.75
Multimedia authoring software	006.78
Multimedia information retrieval	
E information science	025.040 285 67
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computer communications	004.6
<i>see also</i> Computer communications	
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E information science	025.067 8
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NoSQL databases	
E computer science	005.758
O	
Object databases	
N computer science	005.757
Object-oriented databases	
computer science	005.757
Object-relational databases	
computer science	005.756
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I_a Handbooks, manuals, etc.	025.04
I_a United States	025.04
I_a Online data processing	004

I_a Online information services	004.678
I_a	338.761 004 678
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Online processing	004
I_a Oracle (Computer file)	005.756 5
P	
I_a Paradox (Computer file)	005.756 5
I_a Paradox for Windows (Computer file)	005.756 5
Pattern recognition	
computer science	006.4
I_a Pattern recognition systems	006.4
Perception theory	
computer pattern recognition	006.4
Precision (Information science)	025.04
Processors	
computer hardware	004
Q	
Query by image content	
E information science	025.040 285 66
P Query languages	005.74
P computer science	005.74
P information science	025.04
I_a Query languages (Computer science)	005.74
I_a Querying (Computer science)	005.74
R	
RDF triple stores	
E computer science	005.758
Recall (Information science)	025.04
Reference books	028.7
use	028.7
Reference works	028.7
use	028.7
I_a Regional libraries	021.65
I_a Regional library systems	021.65
Relational databases	
computer science	005.756
Relevance (Information science)	025.04
Retrieval of information	
information science	025.524
Rich Internet applications	006.78
N Routers (Computer networks)	004.6
I_a Routing (Computer network management)	004.6
N Routing (Computer networks)	004.6

Dewey Decimal Classification

<p style="text-align: center;">S</p> <p>Search algorithms 005.741</p> <p>I_a Search engines 005.758</p> <p style="padding-left: 20px;">I_a Programming 005.758</p> <p>Search strategy information science 025.524</p> <p>Search trees (Computer science) 005.741</p> <p>Searching data 005.741</p> <p>I_a Semantic integration (Computer systems) 005.7</p> <p>Sensor networks 004.6</p> <p>I_a Simple Object Access Protocol (Computer network protocol) 006.78</p> <p>Sort algorithms 005.741</p> <p>Sorting data 005.741</p> <p>I_a SQL (Computer program language) 005.756</p> <p>I_a SQL server 005.758</p> <p>I_a Storage area networks (Computer networks) 004.6</p> <p style="text-align: center;">T</p> <p>Triple stores</p> <p style="padding-left: 20px;">E computer science 005.758</p> <p>Triplestores</p> <p style="padding-left: 20px;">E computer science 005.758</p> <p style="text-align: center;">U</p> <p>I_a Ubiquitous computing 004</p> <p style="text-align: center;">V</p> <p>Validation data</p> <p style="padding-left: 20px;">file processing 005.74</p> <p>Virtual private networks 004.678</p> <p>I_a Visual FoxPro for Windows 005.756 5</p> <p>I_a Volunteer libraries 027</p> <p>VPNs 004.678</p> <p style="text-align: center;">W</p> <p>N Web 2.0 025.042</p> <p>I_a Web applications 006.78</p> <p>I_a Web publishing 025.042</p> <p>I_a Web search engines 005.758</p> <p>I_a Web services 006.78</p> <p style="padding-left: 20px;">006.78</p> <p>Web sites</p> <p style="padding-left: 20px;">bibliographies</p> <p style="padding-left: 40px;">specific subjects 025.06</p>	<p>Wired communications 004.6</p> <p>Wireless communications 004.6</p> <p>I_a Wireless Internet 004.678</p> <p>I_a Wireless sensor networks 004.6</p> <p>I_a Women's computer network resources 025.04</p> <p>I_a World Wide Web 025.042</p> <p style="padding-left: 20px;">025.042</p> <p style="padding-left: 20px;">I_a Business services computer science 025.042</p> <p style="padding-left: 40px;">distributed processing programs 025.042 028 553 76</p> <p style="padding-left: 40px;">information management public administration 352.380 285 467 8</p> <p style="padding-left: 40px;">information systems 025.042</p> <p>I_a Personal home pages 025.042</p> <p>I_a Services 025.042</p> <p>I_a Subject access 025.042</p> <p>WWW (World Wide Web) 025.042</p> <p style="padding-left: 20px;"><i>see also</i> World Wide Web</p> <p style="text-align: center;">X</p> <p>XML databases</p> <p style="padding-left: 20px;">E computer science 005.758</p> <p style="text-align: center;">Z</p> <p>I_a Z39.50 (Standard) 025.04</p>
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