

~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~
BOSTON
Library

IEEE 100
The Authoritative Dictionary of
IEEE Standards Terms

Seventh Edition



Published by
Standards Information Network

Trademarks and disclaimers

IEEE believes the information in this publication is accurate as of its publication date; such information is subject to change without notice. IEEE is not responsible for any inadvertent errors.

Other tradenames and trademarks in this document are those of their respective owners.

The Institute of Electrical and Electronics Engineering, Inc.
3 Park Avenue, New York, NY, 10016-5997, USA

Copyright © 2000 by the Institute of Electrical and Electronics Engineers, Inc. All rights reserved. Published December 2000. Printed in the United States of America.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

To order IEEE Press publications, call 1-800-678-IEEE.

Print: ISBN 0-7381-2601-2

SP1122

See other standards and standards-related product listings at: <http://standards.ieee.org/>

The publisher believes that the information and guidance given in this work serve as an enhancement to users, all parties must rely upon their own skill and judgement when making use of it. The publisher does not assume any liability to anyone for any loss or damage caused by any error or omission in the work, whether such error or omission is the result of negligence or any other cause. Any and all such liability is disclaimed.

This work is published with the understanding that the IEEE is supplying information through this publication, not attempting to render engineering or other professional services. If such services are required, the assistance of an appropriate professional should be sought. The IEEE is not responsible for the statements and opinions advanced in this publication.

Library of Congress Cataloging-in-Publication Data

IEEE 100 : the authoritative dictionary of IEEE standards terms.—7th ed.
p. cm.

ISBN 0-7381-2601-2 (paperback : alk. paper)

1. Electric engineering—Dictionaries.
2. Electronics—Dictionaries.
3. Computer engineering—Dictionaries.
4. Electric engineering—Acronyms.
5. Electronics—Acronyms.
6. Computer engineering—Acronyms. I. Institute of Electrical and Electronics Engineers.

TK9 .I28 2000
621.3'03—dc21

00-050601

(6) Representations of static or dynamic entities in a formalized manner suitable for communication, interpretation, or processing by humans or by machines. (SCC32) 1489-1999

data abstraction (A) (software) The process of extracting the essential characteristics of data by defining data types and their associated functional characteristics and disregarding representation details. *See also:* encapsulation; information hiding. **(B) (software)** The result of the process in definition (A). (C) 610.12-1990

data-access operation A processor-initiated load, store, or lock that involves a data-format copy and (for lock operations) a data-update action (such as swap or add). (C/MM) 1596.5-1993

data access register A register that is used for arithmetic associated with random-access of data. (C) 610.10-1994w

data acquisition (supervisory control, data acquisition, and automatic control) (station control and data acquisition) The collection of data. (SWG/PE/SUB) 999-1992w, C37.1-1994, C37.100-1992

data acquisition system (1) (supervisory control, data acquisition, and automatic control) (station control and data acquisition) A system that receives data from one or more locations. *See also:* telemetering. (PE/SUB) C37.1-1994

(2) A centralized system that receives data from one or more remote points—a telemetering system. Data may be transported by either analog or digital telemetering. (SWG/PE) C37.100-1992

data administrator An individual who is responsible for the definition, organization, supervision, and protection of data within some organization. *See also:* database administrator. (C) 610.5-1990w

data aggregate A collection of two or more data items that are treated as a unit. *Synonyms:* aggregate; group item. *See also:* composite data element. (C) 610.5-1990w

data attribute A characteristic of a unit of data. (C) 610.5-1990w

data bank (A) A collection of data libraries. *Note:* A record contains one or more items, a file contains one or more records, a library contains one or more files, and a data bank contains one or more libraries. **(B)** A collection of data relating to a particular subject area. *Note:* The data may or may not be machine-readable. (C) 610.5-1990

data bar polling An end-of-write indicator. (ED) 1005-1998

database (DB) (1) (A) (data management) (software) A collection of logically related data stored together in one or more computerized files. *Note:* Each data item is identified by one or more keys. *See also:* database management system. **(B) (data management) (software)** In CODASYL, the collection of all the record occurrences, set occurrences, and areas controlled by a specific schema. (C) 610.5-1990

(2) A collection of data fundamental to a system. (C/SE) 1074-1995s

(3) A collection of related data stored in one or more computerized files in a manner that can be accessed by users or computer programs via a database management system. (C/SE) J-STD-016-1995

(4) A collection of interrelated data, often with controlled redundancy, organized according to a schema to serve one or more applications; the data are stored so that they can be used by different programs without concern for the data structure or organization. A common approach is used to add new data and to modify and retrieve existing data. (C/DIS) 1278.4-1997

database access method A technique for organizing and storing a physical database in computer storage. (C) 610.5-1990w

database administration (DBA) The responsibility for the definition, operation, protection, performance, and recovery of a database. (C) 610.5-1990w

database administrator (DBA) An individual who is responsible for the definition, operation, protection, performance, and recovery of a database. *See also:* data administrator.

database command language (DBCL) A procedural data manipulation language used to access a database through a database management system. *See also:* database manipulation language. (C) 610.5-1990w

database creation The process of naming, allocating space, formatting, and defining a database. *See also:* database definition; database design. (C) 610.5-1990w

database definition (A) The process of translating a conceptual schema for a database into a data storage schema. *See also:* redefinition; database design; database creation. **(B)** The result of such a translation. (C) 610.5-1990

database description language (DBDL) *See:* data definition language.

database design (A) The process of developing a conceptual schema for a database that will meet a user's requirements. *Synonym:* implementation design. *See also:* database creation; database definition. **(B)** The result of the process in definition (A). (C) 610.5-1990

database engine A software engine that is specially designed for database applications; performs low-level database operations such as record creation, editing, and deletion. *See also:* relational engine. (C) 610.10-1994w

database extract A file, each record of which contains data items selected from a database based on a particular criterion. (C) 610.5-1990w

database integrity The degree to which the data in a database are current, consistent and accurate. *See also:* data integrity; database security; integrity. (C) 610.5-1990w

database key A field in a database that identifies a record in that database. (C) 610.5-1990w

database management system (DBMS) (1) A computer system involving hardware, software, or both that provides a systematic approach to creating, storing, retrieving and processing information stored in a database. A DBMS acts as an interface between computers' programs and data files as well as between users and the database. It may include backup/recovery, checkpoint processing, and ad-hoc query capability. (C) 610.5-1990w

(2) An integrated set of computer programs that provide the capabilities needed to establish, modify, make available, and maintain the integrity of a database. (C/SE) J-STD-016-1995

database manipulation language (DBML) *See:* data manipulation language.

database organization The manner in which a database is structured; for example, a hierarchical organization, a relational organization. *See also:* reorganization. (C) 610.5-1990w

database record (A) A collection of data elements that are stored in a database. *See also:* record. **(B)** A collection of hierarchically dependent segments (one root and all its descendants) within a hierarchical database. *See also:* record. (C) 610.5-1990

database reorganization *See:* reorganization.

database security The degree to which a database is protected from exposure to accidental or malicious alteration or destruction. *See also:* database integrity; data security. (C) 610.5-1990w

database segment *See:* segment.

database server On a network, a server that provides access to a database at the record level; that is, the server sends and locks only the records affected by a particular requestor. *See also:* file server; disk server; mail server; terminal server; network server; print server. (C) 610.7-1995

database sublanguage *See:* data sublanguage.

database system A software system that supports multiple applications using a common database. (C) 610.5-1990w

Database Task Group (DBTG) A task group of the CODASYL Programming Language Committee that established a set of standards for specification and design of network database structures. *See also:* CODASYL database.

data bit (1) layer for the PDU signal). **(2)** A six serial signal; logic "0" information

data block

data-bread

data break data item code break; point; program break.

data broadcast the slave

data broadcast the master data

data buffer peripheral different

data bus / processing

data cache data and

data card compute

data carrier a data medium; for a magnetic data medium

data cell S

data certified and producer certificate

data chain

data chair transmitter

data change to change process for

data channel

data channel have one outputs. Each

data character header. . . byte, i.e. character

data character herent, program (for example ships between

data circuit