Glossary

If you do not find the term you are looking for here, try http://whatis.techtarget.com/, http://www.webopedia.com/ or http://www.hiddenlab.com/acronym/.

ACID: Acronym for four properties guaranteed by transactions:

Atomicity: Either the entire transaction executes, or none of it does.
Consistency: No transaction can break the integrity constraints of the database.
Isolation: no operation outside the transaction can see its intermediate results.
Durability: Once the user is notified of success, the operation cannot be rolled back.

In an ACID-compliant system, all data changes follow ACID rules.

Anti-join: A join which restricts output to rows of the first table that have no matching rows in the second. Examples: NOT IN(), NOT EXISTS(), exclusion join.

API: Application Program Interface

Applet: Component that executes in a web browser, or other applications or devices that support the applet programming model

Application client: First-tier client Java component that executes in its own JVM and has access to some J2EE platform APIs (JNDI, JDBC, RMI-IIOP, JMS)

Asynchronous replication: Changes in an updatable master table are copied to replication tables at predetermined times or intervals.

Attribute: A named object property and set of possible property values

Binding: Association of a name with an object (or pointer to it)

BSF: Bean Scripting Framework

Callback method: Component method called by a container to notify the component of important events in its life cycle

Caller principal: Caller or principal that identifies the invoker of enterprise bean method

Candidate key: A key which could be a primary key because all values are unique and it has no redundant information. It is a superkey with no redundant information in it.

CGI: Common Gateway Interface

Commit: Make database changes permanent

Concurrent insert: An insert that executes while other threads are reading from the insert table

Container: Entity that provides life cycle management, security, deployment, runtime and other specific services to components

Context: Set of name-to-object bindings, e.g. in a Java environment

CORBA: Common Object Request Broker Architecture

Correlated subquery: a subquery which refers to a column referenced in the outer query

COS: *CORBA* Common Object Services name service

Covering index: Index on all columns referenced in SELECT, JOIN, and WHERE clauses of a query

CSS: Cascading Style Sheet, used with *HTML* and *XML* documents to add defined styles for rendering mechanisms like browsers.

CSV: Comma-separated values data format.

CTS: Compatibility Test Suite

Cursor: Temporary database object which provides row-by-row access to a query result.

Cyclic dependency: Exists in a table if for any i and j, rows (Ai, Bi, Cj), (Ai, Bj, Ci), and (Aj, Bi, Ci) occur but row (Ai, Bi, Ci) does not occur; therefore reconstituting the table after decomposing it with projections of degree 2 creates spurious rows.

Database: Collection of related table and other data-related objects

DBMS: Database Management System

DCOM: Distributed Component Object Model, a widely followed standard

DDL: Data Description Language: the set of all SQL statements that define schemas, objects within them, and user's rights to them

Dereference: Return the value of a variable from a reference or pointer to the variable

Determinant: One or more key columns on which other columns functionally depend, for example if the city is Calgary then the province is Alberta.

Directory-enabled application: Application that uses a naming or *directory* service

Directory Object: Object in a *Directory Service*

Directory Service: *Naming system* which manages named objects (eg add, delete, find, update) and their attributes

Dirty read: Reading of row changes which have not yet been *commit*ted

Distributed database: A collection of multiple, logically interrelated databases distributed over a computer network

Distributed database management system: software system that transparently manages distributed databases

Distributed processing: process of an agent or application (for example a client-server app) distributing its tasks among different computers on a network

Distributed transaction: *Transaction* that references multiple servers or network nodes

DML: Data Mamipulation Language: the set of all *SQL* statements that store, alter or retrieve database data

DOM: Domain Object Model, a tree of objects with interfaces for traversing the tree and writing an *XML* version of it as defined by the *W3C* specification.

Domain: Definition of a data type for a database.

Domain integrity: Validity of data for its domain, e.g., an age may not be negative.

DNS: Internet Domain Name System

DRBD: Acronym for Distributed Replication Block Device

DSN: Acronym for Data Source Name

DTD: Document Type Definition describing structure and properties of a class of *XML* files

EAR file: *JAR* archive containing a *J2EE* application

EJB: Enterprise JavaBean™

Entity: In relational database theory, the logical analogue of a table.

Entity integrity: Absence of duplicate rows

Entity bean: *EJB* that represents database data

Equi-join: A join of relations (tables) on identical column values

Exclusion join: LEFT JOIN combined with a WHERE clause which excludes NULL values on the right side of the join.

Filter: Object that can transform the header and/or content of a request or response

FTP: Acronym for File Transfer Protocol

Full and partial dependency: If there is only one value of column C for any set of column A *and* B values, C is *fully* dependent on A and B; if column D depends only on column A *or* B, that is a *partial* dependency.

Functional dependency: `Column1` is functionally dependent on `column2` if for each value of `column2` there is no more than one value of `column1`, in which case `column2` is a determinant of `column1`.

GIS: Acronym for Geographic Information Systems

Heterogeneous distributed database system: A distributed database system where databases are of different types

Homogeneous distributed database system: A distributed database system where all databases are of the same type

HTML: Hypertext Markup Language

HTTP: HyperText Transfer Protocol

HTTPS: *HTTP* layered over the SSL protocol

IDL: Interface Definition Language

IIOP: *CORBA* Internet Inter-ORB Protocol

Information schema: Set of views that describe *database* objects

INNER JOIN: A relational database operation which selects rows from two tables such that the value in one column of the first table also appears in a specified column of the second table.

Inode: Unix data structure for a file, with properties describing file name(s), user and group ownership, read/write/execute permissions, and type.

Integrity constraints: Rules guaranteeing entity integrity, referential integrity and domain integrity.

IP: Internet Protocol

IPC: Inter Process Communication

Isolation level: Degree to which (i) the intermediate state of the data being modified by a transaction is visible to concurrent transactions and (ii) data being modified by other transactions is visible to it

J2EE: Java 2 Enterprise Edition

J2SDK: Java 2 Software Development Kit

JAR file: Platform-independent Java archive file

JDBC: Java Database Connectivity

JNDI: Java Naming and Directory Interface

JNLP: Java Network Launching Protocol

JOIN: Combination of rows FROM two or more relations (tables)

JRMP: Acronym for Java Remote Method Protocol

JSP: JavaServer Page

LAMP: Acronym for Linux, Apache, MySQL, PHP

LAMPS: Acronym for LAMP plus SSL

LDAP: Lightweight Directory Access Protocol

LEFT JOIN: An OUTER JOIN which returns all rows from the table named *before* the JOIN keyword, combined with matching rows or NULLs from the table named *after* the JOIN keyword.

Location transparency: A user can refer to any database object in one way, regardless of its location.

LRU: Acronym for Least Recently Used

MD5: *Message Diges*t number 5 value, a 128-bit value similar to a checksum

Multi-valued dependency: A relationship amongst three or more columns A, B, C, … where values of A depend on B, C, … but values of B, C, … are mutually independent.

Mutual independence: Relationship between two columns where neither is a determinant of the other.

MUTEX: Mutual exclusion object with two states, locked and unlocked, that allows multiple threads to synchronize access to a shared resource

MVCC: Multi-version Concurrency Control updates tables and rows without the overhead of row-level locking.

Namespace: Set of names in a naming system

Naming System: Connected set of *context*s of the same type and a set of common operations (eg lookup)

NATURAL JOIN: A equi-join of two relations (tables) on columns of the same name and type, showing only one copy of the shared column(s).

Non-repeatable read: A read of a row reflects uncommitted differences from a previous read

ODBC: Open Database Connectivity

Object: An encapsulated set of data and methods

OLAP: Acronym for Online Analytical Processing

OLTP: Acronym for Online Transaction Processing

OpenGIS: Registered Trademark of Open Geospatial Consortium, Inc (OGC), denoting specifications for encoding geospatial information.

ORB: Object Request Broker

ORPC: Object Remote Procedure Call

OUTER JOIN: a join containing all rows from one table and matching rows, or NULL if no matching row exists, from another table. It may be LEFT, RIGHT or FULL. If LEFT, all rows from the table named *before* the JOIN keyword are returned, along with matching rows or NULLs from the table named *after* the JOIN keyword. If RIGHT, vice-versa. If FULL, the result combines LEFT and RIGHT JOINs and eliminates duplicates.

Outer query: A query containing a subquery (or inner query)

Perl: Practical Extraction and Report Language

Pessimistic concurrency: Lock rows at the data source to prevent users from inducing concurrency errors, for example a duplicate primary key value.

Phantom read: Read of an inserted row where the changes have not yet been committed

PHP: Hyptertext processing language

POA: Portable Object Adapter, a CORBA standard for building server-side applications that are portable across different ORBs

POP: Post Office Protocol

POSIX: Portable Operating System Interface, a set of IEEE standards for application portability between Unix variants

Primary key: Single attribute (field, column), or collection of them, which uniquely identify a row and which may never be NULL.

Projection: A subset of the columns in a table

Query: A request for the retrieval of data, using the SELECT command, or a SQL command that inserts, updates or deletes data.

RAID: Redundant array of inexpensive disks

Replication: the process of copying and maintaining database objects in multiple databases belonging to a *distributed database*

Ref: Reference to an SQL structured type value in a table

Referential integrity: Consistency between related tables, e.g., all references to data in other tables exist.

Remote procedure call: A call to a stored procedure on a remote server

Rremote transaction: *Transaction* that references a remote server

RIGHT JOIN: OUTER JOIN which returns all rows from the table named *after* the JOIN keyword, combined with matching rows or NULLs from the table named *before* the JOIN keyword.

RMI: Remote Method Invocation

Rollback: The point in a transaction when all updates to any resources involved in the transaction are reversed.

Row value constructor: A sequence of one or more value expressions comparable to a row of a table

Savepoint: Point within the current transaction that can be referenced from a rollback

SAX: Simple API for XML

Scalar: a single quantity, i.e. not an array, vector or table

Schema: A collection of objects which model something. A database schema consists of all the objects, and their structures, in a database.

Semi-join: A join between two tables which returns one row at most from the first table, and as many matching rows as exist from the second. Examples: IN(), EXISTS().

SMP: Symmetric multi-processing computer architecture.

SMTP: Simple Mail Transfer Protocol, a widely followed standard

SNMP: Simple Network Management Protocol, a widely followed standard

SOAP: Simple Object Access Protocol, a widely followed standard

SPI: Service Provide Interface

SQL: Structrued Query Language

SQLSTATE: Five-character ANSI/ODBC code indicating SQL result status. The first two characters denote *class*: `00`=success, `01`=warning, `02`=error, `>02`=exception.

SQL/J: Set of standards that specifies how to embed SQL statements in Java methods, and how to call Java static methods as SQL stored procedures and UDFs

SSI: Server-side includes

SSL: Secure Socket Layer, security protocol that provides a degree of internet privacy

Standard deviation: Square root of the *variance*

Strong authentication: A form of computer security where the identities of networked users, clients and servers are verified without transmitting passwords over the network.

Subquery: a query contained within another SQL statement

Superkey: A combination of columns for which there are no repeating values

Synchronous replication: Changes in a table are applied to all replicated copies immediately, as part of the basic transaction.

Table: Two-dimensional grid of rows and columns where each row has the same number of cells and is unique, and data in each cell conforms to the column's data domain.

Table value constructor: A group of row value constructors which all have the same number of cells and in which value types match columnwise.

Tablespace: An Oracle-like logical unit for storage segments, i.e. tables and indexes.

TCP: Transmission Control Protocol

Time validity: A guarantee that every row describes a state of affairs in a valid time period.

Transaction: Atomic or logical unit of work that encloses SQL statements which are to be entirely committed or entirely rolled back

Transaction time validity: A guarantee that a table is exactly reconstructable as it existed at any instant, or for any period, since its creation.

Transitive closure of a binary relation R on a set X is the smallest transitive relation on X that contains R.

Trigger: Named database object associated with a table and fired by a table event.

Tuple: ordered set of values. The word originated as an abstraction from the sequence: single, double, triple, quadruple, quintuple, …, n-tuple.

UDF: User-defined function

UDDI: Universal Discovery, Description, and Integration

UDT: User-defined type (SQL)

UML: Unified Modelling Language

URI: Uniform Resource Identifier

URL: Uniform Resource Locator

URN: Uniform Resource Name

UTC: Coordinated Universal Time, same as Greenwich Mean Time

Value expression: In SQL, an expression which evaluates to a scalar of a known type or a *row value constructor*

Variance: Sum of squares of differences from the average, divided by the no. of values

W3C: World-wide-web Consortium

WAR file: *JAR* that contains a web module

WSDL: Web Services Description Language

XA: X/Open Distributed Transaction Processing model, providing two-way communication between a transaction manager and resource managers to maintain transaction atomicity while coordinating transactions across applications and application concurrence on shared resources.

XML: Extensible Markup Language

XSL: Extensible Stylesheet Language

XSLT: XSL transformation