

Database Design Appendix A, app1.tex

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# Appendix A

## Index for Alternate Terminology

... *Behold, the people is one, and they have all one language; and this they begin to do: and now nothing will be restrained from them, which they have imagined to do.*

*Go to, let us go down, and confound their language, that they may not understand one another's speech.*

Genesis 11, 6 to 7

This list is intended to provide assistance when reading about files and databases. Since there is a great deal of variation of meaning of the terms used in the literature, it is impossible to make this index truly comprehensive. The appropriateness of the provided cross references has to be verified in each case by careful reading of the source material and the corresponding section of this book. Often there will be no exact match and the concept or technique described in a reference will have to be circumscribed in a few sentences. Whenever references are used to present material for classroom discussion or evaluation, then it is essential to use the standard terminology which has been introduced in this book to avoid misunderstandings and the associated waste of time.

Term Found in the Literature: Term Used Here

A-strings (DIAM): attribute column

absolutes: essential data or essential links

abuse: violation of protection

accept: get currency

access by attribute: indexed access  
access control: protection of privacy  
access method: file organization  
actual data: data derived on-entry  
additions file: transaction file  
algebraic language: procedural language  
APL: Associative Programming Language (Dodd<sup>66</sup>)  
appendrecords: extend a file  
area (CODASYL): subset of a database  
assisted sequential: sequential with blocking and deblocking  
associative processes (software): search for records satisfying a key, especially by key-to-address transformations  
attribute: attribute name  
audit trail: transaction logging  
automatically derived data: data derived on access  
AV pairs: attribute name-value pairs  
AVL trees: dynamically balanced binary trees  
band: set of adjoining tracks, single track  
batch-update: reorganization  
BCH code: Bose-Chaudhuri code  
BEING-USED (SOCRATE): current  
bin: bucket in direct access  
BOM or B/M: bill of materials  
breakpoint: checkpoint  
brother: sibling  
bulk update: batch update  
bulk storage: secondary, disk storage  
bunching: clustering  
c-list entry: capability  
calculated record (IDS): direct access  
calculus-based language: non-procedural language  
candidate key: some key which key identifies a record uniquely  
cardinality: number of tuples or records  
cascading index: multiple level index  
cellular file organization: a file distributed over multiple units to reduce the load per unit  
chained: linked records  
chained files: ring structures  
characteristic relationship: property relationship  
clear text (cryptography): plain text  
clustered index: index-sequential index  
code book: schema  
combined indexes: multiple indexes  
command: program instruction for a channel unit  
compaction: abbreviation, compression  
component (SYSTEM 2000, STAF): attribute

compressed index: abbreviated index  
conflict: collision  
connect: link  
consecutive files: sequential files  
content addressability: associative or indexed access  
control area (IBM-VSAM): portion  
control block (IBM-VSAM): parameter area  
control interval (IBM-VSAM): train  
coordinate index: multiway index  
copy-on-write (TENEX): create file from after images  
core storage: primary storage  
correlation variable: tuple variable or TID  
cost increment: jump  
count area: block identifying area  
creator (SOCRATE): database schema interpreter  
criteria: search key value  
cross indexes: indexed files  
CRT: display terminals  
cursors: pointers, users of unreliable systems  
DASD: disk pack drive, magnetic drum, etc.  
data: goal  
data aggregate: group of records  
database: either file contents or database system, or anything in between  
database (IMS and other hierarchical systems): file  
database descriptions: schema  
data cell: stripfile  
data-definition language: schema language  
data dictionary: schema  
data-exchange area: buffer pool  
data item: item  
datalogical: file structure model  
data model definition: schema  
data processing card: Hollerith card  
data set(IBM): file  
data sublanguage: data manipulation language  
data submodel: subschema  
DB/DC: database and data communication  
DDL: schema language  
DD/DS: schema  
deferred update: batch update  
degree of a relation: number of domains  
demand data: data derived on access  
dense index: exhaustive index  
dequeue: release a claim  
descriptors: keys  
detail file: transaction file

detail record: record on a lower hierarchical level  
determinant: key  
direct access storage device: disk unit, strip file, etc.  
direct reference (IDS): block pointer  
directory: schema, file description, or index  
disk file: see disk pack drive  
domain (Codd): attribute type  
domains of accessors: cliques  
economic analysis: cost-benefit analysis  
e-message: tuple or record  
enciphering: cipher encoding  
economic analysis: cost-benefit analysis  
enqueue: claim  
entity description: schema  
entity information algebra: matrix of all entities and attributes  
entity name: ruling part of tuple  
entity name set: ruling part of (independent) relation  
entity name set name: attribute  
entries: records  
entry-sequenced data set (IBM-VSAM): direct access file  
entry variable: tuple variable  
E-string (DIAM): file  
eventuality condition: hibernation  
executive: operating system  
exclusion: claim  
exclusive read: claim for later rewrite and release  
exclusive update: claim for immediate write  
executive: operating system  
exit: escape procedure, database procedure  
extent (IBM): portion, area as in CODASYL  
fact (ANSI): binary relationship  
fascicle: set of pages or blocks  
FCFS polling: FIFO  
fields: items or attributes of records  
file(hardware): disk storage unit, etc.  
file address: pointer  
file definition: schema  
file generation: loading  
file system: storage system  
filter: selection clause  
finish (CODASYL): close file  
fixed-head disks: drums  
flat distribution: uniform distribution  
folio: database  
foreign key: owning attribute  
fragmentation: waste due to portion management

free: release  
fully inverted file: phantom file  
garbage collection: file reorganization  
Gaussian distribution: normal distribution  
GDBMS: Generalized Database Management System  
generative method: compiling  
get: record reading  
group: segment of a tuple or a record  
group (Reality): direct access bucket  
hashing: key-to-address transformation  
header: directory  
hierarchy: tree  
high-speed memory: core memory  
hints: nonessential data or links  
HOL policy: PRI  
home address: track identifying area  
IBM cards: Hollerith cards  
IBM tape: half-inch magnetic tape  
ICDB: integrated corporate database  
ID-attribute form: Codd Normal Form  
immediate-access storage: core memory  
independent relation: entity relation  
index point: track-beginpoint  
individual: entity  
insert (DBTG) now: connect  
intent to lock: claim  
interim file: workspace  
internal structure (SOCRATE): schema  
intersection data (IMS): dependent part of subset or associative relation  
interval(IBM-VSAM): train or (locking) region  
inversion of permutations: ranking  
inverted file: indexed file, file sorted on another attribute type, or transposed file  
inverted list: multi-indexed  
job: application or task  
join dependency: connection  
journal file: transaction log  
KAT: key-to-address transformation  
keep (CODASYL): claim  
key: search argument, attribute value  
key compression: key abbreviation  
key field on a disk: block identification field  
keypunching: indirect data entry, cards  
key-sequenced dataset (IBM-VSAM): index-sequential file  
key-to-address transfer: direct address  
key tree: index  
key type: attribute

key work tree: multilevel indexing  
keyed record access: indexed files  
L-string (DIAM): interfile linkage  
LCFS policy: LIFO  
LINC tape: DEC tape  
line: transmission line  
line: record containing text  
linear probing: linear search in a direct file  
line number (IDS): record number  
link: pointer  
linkage: pointer structure  
linked free storage lists: chained free portions  
linked lists: rings  
list: chain  
locate: fetch  
location mode: file access method  
logical database (IMS): user's data model  
logical records: records  
logical subschema: external schema  
*m-to-n* relationship: association or nest of references  
magnetic card file: strip file  
maintenance of files: reorganization  
materialized records: data derived on access  
memory: storage  
merge: union of two sequences  
MIS: management information system, medical information system  
modulo-two addition: exclusive-OR  
multilist: indexed rings  
multiway: multi-attribute  
nondense index: index with block anchor points  
nonprime attribute (Codd): goal attribute exclusively  
nonsimple domain (Codd): hierarchical or tree structure  
notation: code representation  
null entry: undefined data  
object relations: associative relations  
observation: attribute value  
on-demand derivation: data derived on access  
optional fields: essential values  
out-of-place-insertion: overflow file  
output formats: data constellations  
overflow file: transaction file  
owner-coupled set (Codd): subsidiary ring, implemented nest  
owner record: directory record  
page: block  
paged memory: virtual memory  
partial match queries: multi-attribute access

partitioned file: single level index to large record groups  
permanent blocking: hibernation  
permutation index: concordance  
persistent records: actual data  
physical key (IMS): full key, qualification and subset key  
physical record: block  
piling: clustering  
PL/1: PL/I (see epigraph for Chap. 14.)  
plex (ANSI): subset of a network  
pointer array: index  
potential data: data derived on access  
power of an index: fanout ratio  
predecessor pointers: prior  
preprocessor for schema: translator  
primary key: ruling part  
primary memory: core memory  
probing: serial search  
process: task  
progressive overflow: open addressing  
property: key value or attribute field  
protected read or update (CODASYL): claim against other updates  
put: record writing  
qualifiers: attribute values  
PV (Probeer te verlagen – Verhogen): semaphore, lock claim and release  
qualifiers: attribute values  
queued access: buffered access  
quibs: buffers  
random access: direct access, sometimes indexed access  
random-access drive: disk pack drive  
random-access memory: core memory, disk storage  
randomizing: key-to-address transformation  
rank of a relation: number of tuples  
ready (CODASYL): open file  
realm (CODASYL): subset of a database  
record (IBM): block  
record (IMS): tree instance  
record (MUMPS): entry  
record-control block: schema  
record identity number: unique key  
regional 1 file IBM: immediate-access file  
regional 2 file IBM: direct bucket file  
regional 3 file IBM: direct variable-length-record bucket file  
relational file: associative relation  
remove (DBTG) now: disconnect  
repeating groups: repeating segments  
request stringing: queuing



resolution of indexes: anchorpoints  
restriction: selection  
retrieval field: key  
rotational delay: latency  
rotational position sensing: class 5 architecture  
SATF policy: SSTF  
scatter storage: hashing  
scheme: schema  
search: fetch  
search key: argument  
secondary access paths: multiattribute access  
secondary indexes: multiple indexes  
secondary storage: storage or disks, etc.  
security: reliability, integrity, and protection of privacy  
sector: block  
security: privacy and reliability  
segment: set of pages  
segment (hardware): block or band  
segment (IMS): set of fields, record  
segment (System R): area as in CODASYL  
selectivity: partitioning effectiveness  
self-indexing file: deterministic direct file  
semaphores: locks  
sensitive segments (IMS): segments selected through the PCB  
sequence set (IBM): lower level linked space index  
sequence maintaining hashing functions: linear key-to-address transformations  
set (SOCRATE): group  
set (CODASYL): link-set  
set occurrence (DBTG): link  
signal: release of lock or claim  
sink (SHARE): data user  
SIRO policy: RSS  
skip sequential: index sequential  
slot: bin for direct access  
SLTF policy: SSTF  
source (SHARE): data generator  
spawning: collection and submission for execution of a transaction  
step of a job: computation  
step of a program: section  
storage structure: file structure  
stratum: cylinder  
structured file: ring structured file  
symbionts: input-output and file processes of an operating system  
symbolic files: named files  
T-access: get-next  
tag(associative search): key

tag(Protection): reference capability  
task: computation  
taxonotics: code design  
teletype: terminal  
template: schema  
thawed access (TENEX): free-read and write  
third normal form: Codd normal form  
threaded list: linked records, chains, rings  
TMR: triple modular redundancy  
tombstone: marker to invalidate freed storage areas  
trailing-portion abbreviation: low order key abbreviation  
travel time: seek time  
tree: multilevel index  
tree: any multilevel index  
triple modular redundancy: TMR  
tuple: attribute name-value pair  
twins (IMS): sibling pair  
U-access: fetch  
unlock: release  
unordered sequential: pile  
unthawed access (TENEX): audit-read or write  
VDU: display terminals  
vector: bucket  
virtual data: data derived on access  
virtual goal records: phantom files  
virtual key (IMS): subset key only  
vista: database procedure for deriving data on entry or access  
volume of data: quantity of data  
volume table of contents(IBM): table of contents or device directory  
volume (CII, IBM): disk pack, etc.  
waiting line: queue  
working set: group of pages used together  
Zato coding: multiway indexing