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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 (Dodd66)
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
AVLtrees: 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
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
dsink (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

taxononics: 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