
data
distributed
database
DBMS
parallel
shared
system
processing
network
architecture
systems
DBMSs
access
Distributed
processors
centralized
performance
multiple
memory
DDBMS
sites
site
processor
single
disk
computer
nothing
technology
applications
Parallel
may
fragments
require
physically
computers
number
local
provide
sometimes
one
stored
logically
application
Shared
large
decentralized
typically
bottleneck
interconnection
Figure
nodes
development
definition
logical
control
users
within
Database
make
also
replicated
islands
disks
based
controlled
major
eliminates
reliability
fact
across
scalability
approach
improve
distinction
machines
like
management
transparent
organizational
administered
mode
consists
partitioned
global
way
incompatible
structure
collection
provides
associated
used
least
must
System
capable
split
order
scalable
architectures
referred
operational
resources
remote
defined
computing
communication
distribution
often
discuss
many
Management
user
dis
per
makes
directly
com
Date
databases
share

Database System Concept (CSE 3103)

Lecture 03-Day 03

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Boyce and Codd Normal Form (BCNF)

- **Boyce and Codd Normal Form** is a higher version of the Third Normal form. This form deals with certain type of anamoly that is not handled by 3NF. A 3NF table which does not have multiple overlapping candidate keys is said to be in BCNF. For a table to be in BCNF, following conditions must be satisfied:
- R must be in 3rd Normal Form
- and, for each functional dependency (X -> Y), X should be a super Key.

Boyce and Codd Normal Form (BCNF)

Consider the following relationship : **R (A,B,C,D)**

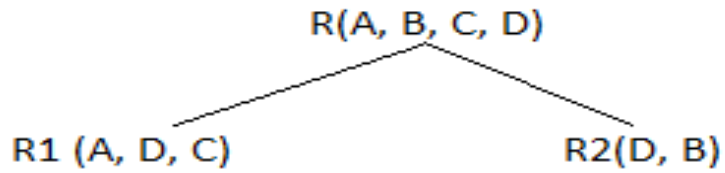
and following dependencies :

A -> BCD
BC -> AD
D -> B

Above relationship is already in 3rd NF. Keys are **A** and **BC**.

Hence, in the functional dependency, **A -> BCD**, A is the super key.
in second relation, **BC -> AD**, BC is also a key.
but in, **D -> B**, D is not a key.

Hence we can break our relationship R into two relationships **R1** and **R2**.



Breaking, table into two tables, one with A, D and C while the other with D and B.