

TASK-8

Normalizing databases using fundamental dependencies:

Aim: To normalize the employee database up to BCNF we decompose the schema using functional dependencies to estimate redundancy.

Initial relation schema:

Employee (Employee-ID, name, dept, job-title, manager-ID, hire-date, salary)

Functional dependency:

- * Employee-ID → name, dept, job-title, manager-ID, hire-date, salary
- * department → manager-ID
- * manager-ID → name

step by step normalization:

1NF (first normal form)

- no repeating groups (or) arrays in schema
- already in 1NF

2NF (second normal form)

- remove partial dependencies
- However, PDLF FDs suggest dependencies not an primary key

decomposition:

- Employee (Employee-ID, name, dept-ID, job-title, hire-date, salary)
- department (dept-ID, manager-ID, name)

3NF (Third Normal form):

→ Eliminate transitive dependency is $D \rightarrow M \rightarrow H$
name.

(transitive via)

Department \rightarrow manager-ID.

updated tables:

Employee (Employee-ID, name, department-ID,
job-title, hire date, salary).

Department (dept-ID, manager-ID).

manager (manager-ID, name).

BCNF:

→ every determinate must be a candidate key
→ all remaining FDS were determinants that
are candidate keys.

* employee-ID

* department-ID

* manager-ID

no decomposition is needed

Kind BCNF:

Employee (Employee-ID, name, dept-ID,
job-title, hire date salary).

Department (dept-ID, manager-ID).

manager (manager-ID, name).

BACKUP - A copy of data is made in order to protect it from loss due to hardware failure and human errors. In a SQL server, backup can be done using various methods. Backup is essential for any database to avoid the risk of data loss. Backup can be done using various methods like full backup, differential backup, and transaction log backup. Full backup backs up the entire database. Differential backup backs up the changes made since the last full backup. Transaction log backup backs up the changes made since the last transaction log backup. Backup can be done using various tools like SQL Server Enterprise Manager, SQL Server Enterprise Bookshelf, and SQL Server Enterprise Developer. Backup can be done using various scripts like T-SQL, VBScript, and PowerShell. Backup can be done using various methods like manual backup, scheduled backup, and incremental backup. Backup can be done using various tools like SQL Server Enterprise Manager, SQL Server Enterprise Bookshelf, and SQL Server Enterprise Developer. Backup can be done using various scripts like T-SQL, VBScript, and PowerShell. Backup can be done using various methods like manual backup, scheduled backup, and incremental backup.

VELTECH	
EX No.	8
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	8
RECORD (5)	
TOTAL (20)	16
SIGN WITH DATE	8/10/23

Result: Thus, the database was normalized to BCNF by decomposing it into employee department & manager tables based on functional dependency.