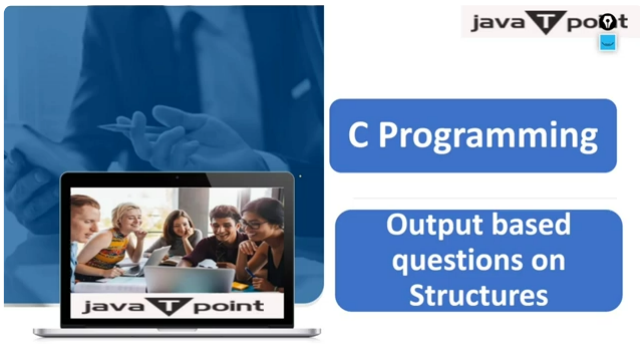

⇧ SCROLL TO TOP

Boyce Codd normal form (BCNF)

- BCNF is the advance version of 3NF. It is stricter than 3NF.
- A table is in BCNF if every functional dependency X → Y, X is the super key of the table.
- For BCNF, the table should be in 3NF, and for every FD, LHS is super key.

Example: Let's assume there is a company where employees work in more than one department.

EMPLOYEE table:

EMP_ID	EMP_COUNTRY	EMP_DEPT	DEPT_TYPE	EMP_DEPT_NO
264	India	Designing	D394	283
264	India	Testing	D394	300
364	UK	Stores	D283	232
364	UK	Developing	D283	549

In the above table Functional dependencies are as follows:

> EMP_ID → EMP_COUNTRY
> EMP_DEPT → {DEPT_TYPE, EMP_DEPT_NO}

Candidate key: {EMP-ID, EMP-DEPT}

The table is not in BCNF because neither EMP_DEPT nor EMP_ID alone are keys.

To convert the given table into BCNF, we decompose it into three tables:

EMP_COUNTRY table:

EMP_ID	EMP_COUNTRY
264	India
264	India

EMP_DEPT table:

EMP_DEPT	DEPT_TYPE	EMP_DEPT_NO
Designing	D394	283
Testing	D394	300
Stores	D283	232
Developing	D283	549

EMP_DEPT_MAPPING table:

EMP_ID	EMP_DEPT
D394	283
D394	300
D283	232
D283	549

Functional dependencies:

> EMP_ID → EMP_COUNTRY
> EMP_DEPT → {DEPT_TYPE, EMP_DEPT_NO}

Candidate keys:

For the first table: EMP_ID

For the second table: EMP_DEPT

For the third table: {EMP_ID, EMP_DEPT}

Now, this is in BCNF because left side part of both the functional dependencies is a key.

← Prev Next →

For Videos Join Our Youtube Channel: Join Now

Feedback

- Send your Feedback to feedback@javatpoint.com

Help Others, Please Share

Learn Latest Tutorials

Splunk

SPSS

Swagger

Transact-SQL

Tumblr

ReactJS

Regex

Reinforcement learning tutorial

R Programming tutorial

Reinforcement Learning

R Programming

RxJS tutorial

RxJS

React Native tutorial

React Native

Python Design Patterns

Python Design Patterns

Python Pillow tutorial

Python Pillow

Python Turtle tutorial

Python Turtle

Keras tutorial

Keras

Preparation

Aptitude

Aptitude

Logical Reasoning

Reasoning

Verbal Ability

Verbal Ability

Interview Questions

Interview Questions

Company Interview Questions

Company Questions

Trending Technologies

Artificial Intelligence Tutorial
Artificial Intelligence

AWS Tutorial
AWS

Selenium tutorial
Selenium

Cloud Computing tutorial
Cloud Computing

Hadoop tutorial
Hadoop

ReactJS Tutorial
ReactJS

Data Science Tutorial
Data Science

Angular 7 Tutorial
Angular 7

Blockchain Tutorial
Blockchain

Git Tutorial
Git

Machine Learning Tutorial
Machine Learning

DevOps Tutorial
DevOps

B.Tech / MCA

DBMS tutorial
DBMS

Data Structures tutorial
Data Structures

DAA tutorial
DAA

Operating System tutorial
Operating System

Computer Network tutorial
Computer Network

Compiler Design tutorial
Compiler Design

Computer Organization and Architecture

Discrete Mathematics Tutorial

Ethical Hacking Tutorial
Ethical Hacking

Computer Organization

Discrete Mathematics

Computer Graphics Tutorial

Computer Graphics

Software Engineering Tutorial

Software Engineering

html tutorial

Web Technology

Cyber Security tutorial

Cyber Security

Automata Tutorial

Automata

C Language tutorial

C Programming

C++ tutorial

C++

Java tutorial

Java

.Net Framework tutorial

.Net

Python tutorial

Python

List of Programs

Programs

Control Systems tutorial

Control System

Data Mining Tutorial

Data Mining

Data Warehouse Tutorial

Data Warehouse