Part 53 – 2NF & 3NF

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In this session we will learn

- Second Normal Form - 2NF
- Third Normal Form - 3NF

Prerequisite:
Part 52 – Normalization Basics & 1NF

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Second Normal Form (2NF)

A table is said to be in 2NF, if
1. The table meets all the conditions of 1NF
2. Move redundant data to a separate table
3. Create relationship between these tables using foreign keys.

EmpId	EmployeeName	Gender	Salary	DeptName	DeptHead	DeptLocation
1	Sam	Male	4500	IT	John	London
2	Pam	Female	2300	HR	Mike	Sydney
3	Simon	Male	1345	IT	John	London
4	Mary	Female	2567	HR	Mike	Sydney
5	Todd	Male	6890	IT	John	London

Problems of Data Redundancy

1. Disk Space Wastage

2. Data Inconsistency

3. DML queries can become slow

Table Design in Second Normal Form

DeptId	DeptName	DeptHead	DeptLocation
1	IT	John	London
2	HR	Mike	Sydney

EmpId	EmployeeName	Gender	Salary	DeptId
1	Sam	Male	4500	1
2	Pam	Female	2300	2
3	Simon	Male	1345	1
4	Mary	Female	2567	2
5	Todd	Male	6890	1

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Third Normal Form (3NF)

A table is said to be in 3NF, if the table

1. Meets all the conditions of 1NF and 2NF

2. Does not contain columns (attributes) that are not fully dependent upon the primary key

EmpId	EmployeeName	Gender	Salary	AnnualSalary	DeptId
1	Sam	Male	4500	54000	1
2	Pam	Female	2300	27600	2
3	Simon	Male	1345	16140	1
4	Mary	Female	2567	30804	2
5	Todd	Male	6890	82680	1

EmpId	EmployeeName	Gender	Salary	DeptName	DeptHead
1	Sam	Male	4500	IT	John
2	Pam	Female	2300	HR	Mike
3	Simon	Male	1345	IT	John
4	Mary	Female	2567	HR	Mike
5	Todd	Male	6890	IT	John

EmpId	EmployeeName	Gender	Salary	DeptId
1	Sam	Male	4500	1
2	Pam	Female	2300	2
3	Simon	Male	1345	1
4	Mary	Female	2567	2
5	Todd	Male	6890	1

DeptId	DeptName	DeptHead
1	IT	John
2	HR	Mike

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Additional Resources

- ## PRAGIM Home Page:

  - www.PragimTech.com

- ## Resources:

  - ASP.NET Interview Questions
  - www.VenkatASPInterview.Blogspot.com
  - C# Interview Questions
  - www.VenkatCSharpInterview.Blogspot.com
  - SQL Server Interview Questions
  - www.venkatsqlinterview.Blogspot.com

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