

Bab V

Ketergantungan Fungsional

Simbol: $X \rightarrow Y$

A	B	C	TUPLE#
10	b1	c1	1
10	b2	c2	2
11	b4	c1	3
12	b3	c4	4
13	b1	c1	5
14	b3	c4	6

i. $A \rightarrow B$, ii. $B \rightarrow C$, iii. $C \rightarrow B$, iv. $B \rightarrow A$, v. $C \rightarrow A$

Normalisasi

1 NF

Cek:

1. Repeating group
2. Multivalued attribute

Jika ada, perlu dilakukan dekomposisi

2 NF

Cek:

1. Tabel dg PK > 1
2. Partial dependency

Jika ada partial dependency, dipisahkan dari full dependency

3 NF

Cek:

1. Transitive dependency

Jika ada, dipisahkan dari tabel

Contoh 1 NF

(a)

DEPARTMENT

Dname	<u>Dnumber</u>	Dmgr_ssn	Dlocations

Diagram illustrating functional dependencies: Dnumber → Dname, Dmgr_ssn → Dname, and Dlocations → Dname.

(b)

DEPARTMENT

Dname	<u>Dnumber</u>	Dmgr_ssn	Dlocations
Research	5	333445555	{Bellaire, Sugarland, Houston}
Administration	4	987654321	{Stafford}
Headquarters	1	888665555	{Houston}

(c)

DEPARTMENT

Dname	<u>Dnumber</u>	Dmgr_ssn	<u>Dlocation</u>
Research	5	333445555	Bellaire
Research	5	333445555	Sugarland
Research	5	333445555	Houston
Administration	4	987654321	Stafford
Headquarters	1	888665555	Houston

Kolom 1 – 3 → Repeating group

Kolom 4 → Multivalued attribute

Jadi tidak memenuhi 1 NF → dekomposisi

Menjadi 2 tabel → 1. Dname, Dnumber, Dmgr_ssn

2. Dnumber, Dlocation

(a)

EMP_PROJ

Ssn	Ename	Projs	
		Pnumber	Hours

(b)

EMP_PROJ

Ssn	Ename	Pnumber	Hours
123456789	Smith, John B.	1	32.5
		2	7.5
666884444	Narayan, Ramesh K.	3	40.0
453453453	English, Joyce A.	1	20.0
		2	20.0
333445555	Wong, Franklin T.	2	10.0
		3	10.0
		10	10.0
		20	10.0
999887777	Zelaya, Alicia J.	30	30.0
		10	10.0
987987987	Jabbar, Ahmad V.	10	35.0
		30	5.0
987654321	Wallace, Jennifer S.	30	20.0
		20	15.0
888665555	Borg, James E.	20	NULL

Kolom 1 – 2 → Repeating group

Kolom 3 – 4 → Multivalued attribute

Jadi tidak memenuhi 1 NF → dekomposisi

Menjadi:

(c)

EMP_PROJ1

<u>Ssn</u>	Ename
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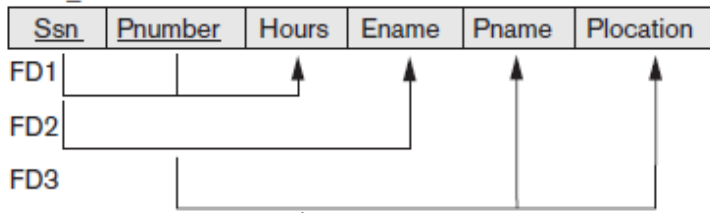
EMP_PROJ2

<u>Ssn</u>	<u>Pnumber</u>	Hours
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Contoh 2 NF

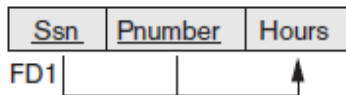
(a)

EMP_PROJ

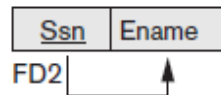


2NF Normalization

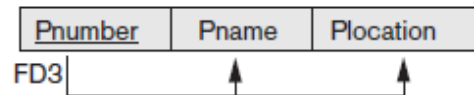
EP1



EP2



EP3



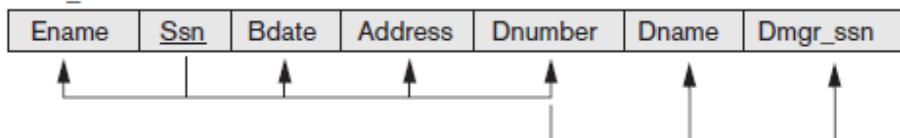
FD 1 → Full Dependency

FD 2 dan FD 3 → Partial Dependency

Contoh 3 NF

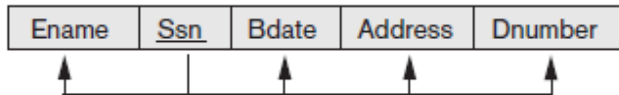
(b)

EMP_DEPT



3NF Normalization

ED1



ED2

