

DATABASE DESIGN & MANAGEMENT

SI10317

PROGRAM STUDI SISTEM INFORMASI
UNIVERSITAS TARUMANAGARA

Pertemuan 5: Exercises

Normalization: Review

**Latihan ini sudah diampaiakan di matakuliah
Database Systems.**



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Table transaction

custNo	custName	postNo	Regency	supNo	supName	address	salNo	salPerson	comment
C105	George Mile	17114	Nevada	S103	Digital Image	04 Hossier	L502	Anderson	Good
C105	George Mile	17114	Nevada	S101	Casual Design	23 Oak St	L503	Tucker	Good
C102	Perry Smith	17114	Nevada	S102	Puma	8 Hoosier	L201	Arnold S.	Bad
C103	Conn Wide	26742	Norvegia	S101	Casual Design	23 Oak St	L503	Tucker	-
C103	Conn Wide	26742	Norvegia	S103	Digital Image	04 Hossier	L404	Smith Loo	Good
C103	Conn Wide	26742	Norvegia	S103	Digital Image	04 Hossier	L502	Anderson	-
C106	Lucas	54444	Saint Mo	S104	Zest	Five Street	L202	Michael	Bad



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Berdasarkan pada table transaction tersebut, kerjakan soal-soal berikut ini !

1. Tentukan ketergantungan fungsionalnya (parisal dan transitive) !
2. Normalisasikan sampai dengan tahap ke-3 !
3. Tentukan primary key dan foreign key dari masing-masing table yang sudah 3NF !
4. Berdasarkan jawaban 2 (table yang sudah 3NF) gambarkan dalam model ER (entity relationship diagram) tentukan multiplicity constraintsnya !



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Menentukan Ketergantungan Fungsional terhadap PK

custNo	custName	postNo	Regency	supNo	supName	address	salNo	salPerson	comment
C105	George Mile	17114	Nevada	S103	Digital Image	04 Hossier	L502	Anderson	Good
C105	George Mile	17114	Nevada	S101	Casual Design	23 Oak St	L503	Tucker	Good
C102	Perry Smith	17114	Nevada	S102	Puma	8 Hoosier	L201	Arnold S.	Bad
C103	Conn Wide	26742	Norvegia	S101	Casual Design	23 Oak St	L503	Tucker	-
C103	Conn Wide	26742	Norvegia	S103	Digital Image	04 Hossier	L404	Smith Loo	Good
C103	Conn Wide	26742	Norvegia	S103	Digital Image	04 Hossier	L502	Anderson	-
C106	Lucas	54444	Saint Mo	S104	Zest	Five Street	L202	Michael	Bad

Diagram showing functional dependencies (FDs) indicated by arrows pointing to the primary key (PK) column (comment):

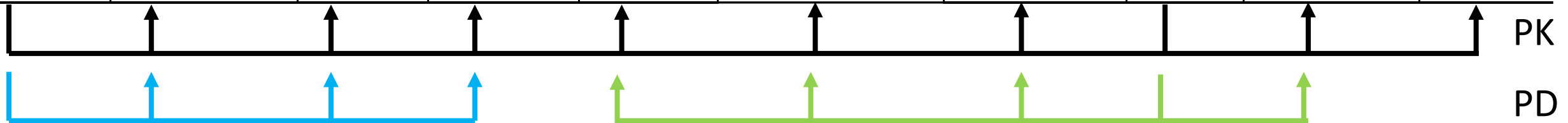
- custNo → PK
- custName → PK
- postNo → PK
- Regency → PK
- supNo → PK
- supName → PK
- address → PK
- salNo → PK
- salPerson → PK



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Identifikasi ketergantungan parsial (PD) dan lakukan normalisasi bentuk ke-2

custNo	custName	postNo	Regency	supNo	supName	address	salNo	salPerson	comment
C105	George Mile	17114	Nevada	S103	Digital Image	04 Hossier	L502	Anderson	Good
C105	George Mile	17114	Nevada	S101	Casual Design	23 Oak St	L503	Tucker	Good
C102	Perry Smith	17114	Nevada	S102	Puma	8 Hoosier	L201	Arnold S.	Bad
C103	Conn Wide	26742	Norvegia	S101	Casual Design	23 Oak St	L503	Tucker	-
C103	Conn Wide	26742	Norvegia	S103	Digital Image	04 Hossier	L404	Smith Loo	Good
C103	Conn Wide	26742	Norvegia	S103	Digital Image	04 Hossier	L502	Anderson	-
C106	Lucas	54444	Saint Mo	S104	Zest	Five Street	L202	Michael	Bad

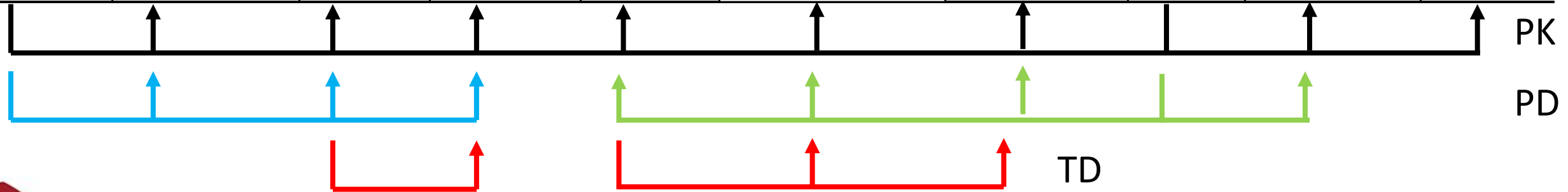


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custNo	custName	postNo	Regency	supNo	supName	address	salNo	salPerson	comment
C105	George Mile	17114	Nevada	S103	Digital Image	04 Hossier	L502	Anderson	Good
C105	George Mile	17114	Nevada	S101	Casual Design	23 Oak St	L503	Tucker	Good
C102	Perry Smith	17114	Nevada	S102	Puma	8 Hoosier	L201	Arnold S.	Bad
C103	Conn Wide	26742	Norvegia	S101	Casual Design	23 Oak St	L503	Tucker	-
C103	Conn Wide	26742	Norvegia	S103	Digital Image	04 Hossier	L404	Smith Loo	Good
C103	Conn Wide	26742	Norvegia	S103	Digital Image	04 Hossier	L502	Anderson	-
C106	Lucas	54444	Saint Mo	S104	Zest	Five Street	L202	Michael	Bad



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Tabel/Relasi Normal Bentuk Ke-2, menghilangkan PD

CustSal

custNo	salNo	comment
C105	L502	Good
C105	L503	Good
C102	L201	Bad
C103	L503	-
C103	L404	Good
C103	L502	-
C106	L202	Bad

CustPost

custNo	custName	postNo	Regency
C105	George Mile	17114	Nevada
C105	George Mile	17114	Nevada
C102	Perry Smith	17114	Nevada
C103	Conn Wide	26742	Norvegia
C103	Conn Wide	26742	Norvegia
C103	Conn Wide	26742	Norvegia
C106	Lucas	54444	Saint Mo

SupSal

salNo	salPerson	supNo	supName	address
L502	Anderson	S103	Digital Image	04 Hossier
L503	Tucker	S101	Casual Design	23 Oak St
L201	Arnold S.	S102	Puma	8 Hoosier
L503	Tucker	S101	Casual Design	23 Oak St
L404	Smith Loo	S103	Digital Image	04 Hossier
L502	Anderson	S103	Digital Image	04 Hossier
L202	Michael	S104	Zest	Five Street



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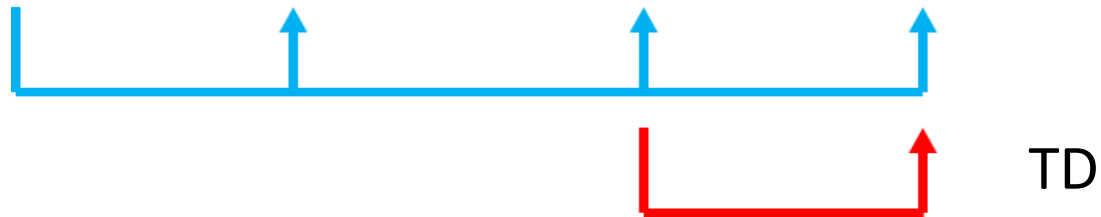
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2

Identifikasi ketergantungan transitif (TD) dan membuat Normal Ke-3

Cust_Post

custNo	custName	postNo	Regency
C105	George Mile	17114	Nevada
C102	Perry Smith	17114	Nevada
C103	Conn Wide	26742	Norvegia
C106	Lucas	54444	Saint Mo



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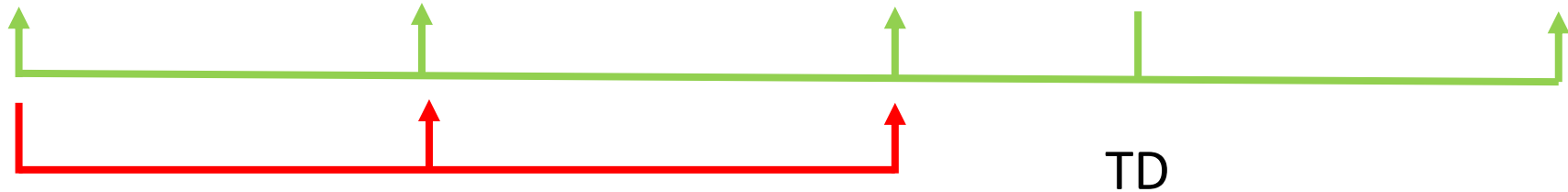
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2

Identifikasi ketergantungan transitif (TD) dan membuat Normal Ke-3

Sup_Sal

supNo	supName	address	salNo	salPerson
S103	Digital Image	04 Hossier	L502	Anderson
S101	Casual Design	23 Oak St	L503	Tucker
S102	Puma	8 Hoosier	L201	Arnold S.
S103	Digital Image	04 Hossier	L404	Smith Loo
S104	Zest	Five Street	L202	Michael



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Tabel/Relasi Normal Bentuk Ke-3, menghilangkan TD
CustSal bentuk Normal Ke-2 sudah dalam bentuk Normal Ke-3

CustSal

custNo	salNo	comment
C105	L502	Good
C105	L503	Good
C102	L201	Bad
C103	L503	-
C103	L404	Good
C103	L502	-
C106	L202	Bad

Sales

salNo	salPerson	supNo
L502	Anderson	S103
L503	Tucker	S101
L201	Arnold S.	S102
L404	Smith Loo	S103
L202	Michael	S104

Supplier

supNo	supName	address
S103	Digital Image	04 Hossier
S101	Casual Design	23 Oak St
S102	Puma	8 Hoosier
S104	Zest	Five Street

Customer

custNo	custName	postNo
C105	George Mile	17114
C102	Perry Smith	17114
C103	Conn Wide	26742
C106	Lucas	54444

Post

postNo	Regency
17114	Nevada
26742	Norvegia
54444	Saint Mo



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Menentukan PK dan FK relasi normal bentuk ke-3

CustSal : custNo, salNo (PK)

custNo (FK) reference to Customer

salNo (FK) reference to Sales

Customer : custNo (PK)

pstNo (FK) reference to Post

Post : postNo (PK)

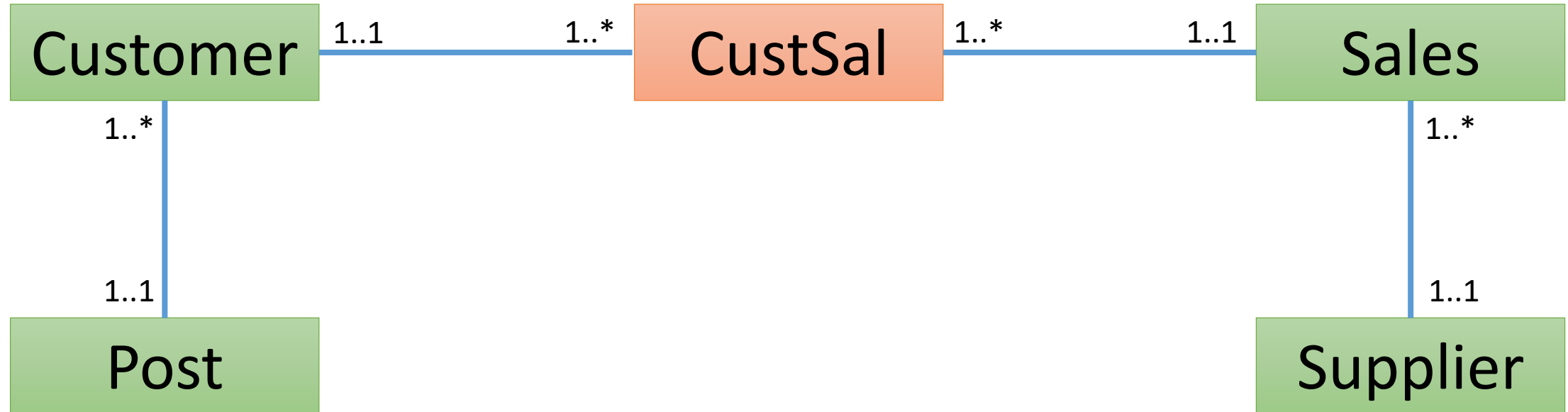
Sales : salesNo (PK)

supNo (FK) reference to Supplier

Supplier : supNo (PK)

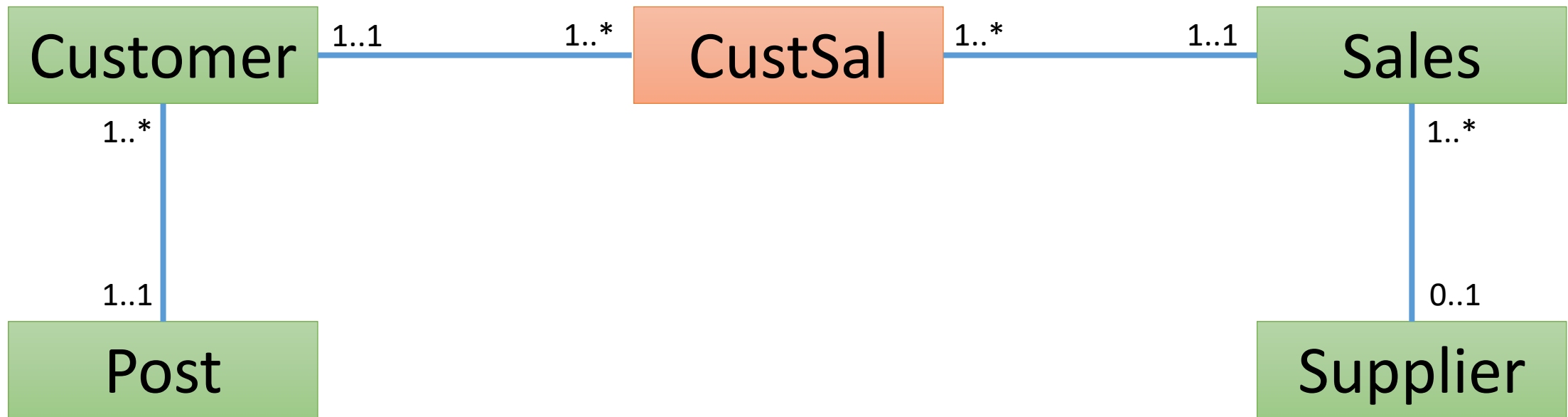


Model ER atau Entity Relationship Diagram)



Model ER atau Entity Relationship Diagram)

Jika diasumsikan bahwa satu Supplier pasti memiliki lebih dari satu Sales, kemudian Sales bisa saja tidak memiliki atau hanya memiliki satu Supplier, maka model ER nya seperti berikut



Thank You

Reference: Database Systems A Practical Approach to Design, Implementation, and Management Fourth Edition.

Thomas M. Connolly and Carolyn E. Begg



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