

ACTIVITY 10

NORMALISATION

Nama : Kosmas Rio Legowo

NIM : 23/51012/PA/21863

Normalization Exercise 1

<u>PET ID</u>	<u>PET NAME</u>	<u>PET TYPE</u>	<u>PET AGE</u>	<u>OWNER</u>	<u>VISIT DATE</u>	<u>PROCEDURE</u>
246	ROVER	DOG	12	SAM COOK	JAN 13/2002	01 - RABIES VACCINATION
					MAR 27/2002	10 - EXAMINE and TREAT WOUND
					APR 02/2002	05 - HEART WORM TEST
298	SPOT	DOG	2	TERRY KIM	JAN 21/2002	08 - TETANUS VACCINATION
					MAR 10/2002	05 - HEART WORM TEST
341	MORRIS	CAT	4	SAM COOK	JAN 23/2001	01 - RABIES VACCINATION
					JAN 13/2002	01 - RABIES VACCINATION
519	TWEEDY	BIRD	2	TERRY KIM	APR 30/2002	20 - ANNUAL CHECK UP
					APR 30/2002	12 - EYE WASH

UNF:

<u>PET ID</u>	<u>PET NAME</u>	<u>PET TYPE</u>	<u>PET AGE</u>	<u>OWNER</u>	<u>VISIT DATE</u>	<u>PROCEDURE</u>
246	ROVER	DOG	12	SAM COOK	JAN 13/2002	01 - RABIES VACCINATION
246	ROVER	DOG	12	SAM COOK	MAR 27/2002	10 - EXAMINE AND TREAT WOUND
246	ROVER	DOG	12	SAM COOK	APR 02/2002	05 - HEART WORM TEST
298	SPOT	DOG	2	TERRY KIM	JAN 21/2002	08 - TETANUS VACCINATION
298	SPOT	DOG	2	TERRY KIM	MAR 10/2002	05 - HEART WORM TEST
341	MORRIS	CAT	4	SAM COOK	JAN 23/2001	01 - RABIES VACCINATION
341	MORRIS	CAT	4	SAM COOK	JAN 13/2002	01 - RABIES VACCINATION
519	TWEEDY	BIRD	2	TERRY KIM	APR 30/2002	20 - ANNUAL CHECKUP
519	TWEEDY	BIRD	2	TERRY KIM	APR 30/2002	12 - EYE WASH

Tabel VISIT di atas mempunyai primary key gabungan dari pet id, visit date dan procedure.

1NF:

Terdapat atribut berulang yaitu PET AGE, PET NAME dan PET OWNER kita pindahkan menjadi tabel baru tabel PET dengan KEY PET ID.

Juga untuk kolom procedure dapat kita pecah supaya value nya atomik menjadi kolom PROCEDURE ID dan PROCEDURE DESCRIPTION.

Tabel VISIT dengan primary key gabungan dari PET ID, VISIT DATE, dan PROCEDURE ID.

<u>PET ID*</u>	<u>VISIT DATE</u>	<u>PROCEDURE ID</u>	PROCEDURE DESCRIPTION
246	JAN 13/2002	01	RABIES VACCINATION
246	MAR 27/2002	10	EXAMINE AND TREAT WOUND
246	APR 02/2002	05	HEART WORM TEST
298	JAN 21/2002	08	TETANUS VACCINATION
298	MAR 10/2002	05	HEART WORM TEST
341	JAN 23/2001	01	RABIES VACCINATION
341	JAN 13/2002	01	RABIES VACCINATION
519	APR 30/2002	20	ANNUAL CHECKUP
519	APR 30/2002	12	EYE WASH

Tabel PET dengan primary key PET ID.

<u>PET ID</u>	PET NAME	PET TYPE	PET AGE	OWNER
246	ROVER	DOG	12	SAM COOK
298	SPOT	DOG	2	TERRY KIM
341	MORRIS	CAT	4	SAM COOK
519	TWEEDY	BIRD	2	TERRY KIM

2NF:

Kemudian, terdapat partial dependency dari procedure description terhadap procedure id (bagian dari compound key), kita dapat memindahkannya menjadi tabel baru PROCEDURE

Table VISIT dengan primary key gabungan dari PET ID, VISIT DATE, dan PROCEDURE ID.

<u>PET ID*</u>	<u>VISIT DATE</u>	<u>PROCEDURE ID*</u>
246	JAN 13/2002	01
246	MAR 27/2002	10
246	APR 02/2002	05
298	JAN 21/2002	08
298	MAR 10/2002	05
341	JAN 23/2001	01
341	JAN 13/2002	01
519	APR 30/2002	20
519	APR 30/2002	12

Table PET dengan primary key PET ID.

<u>PET ID</u>	PET NAME	PET TYPE	PET AGE	OWNER
246	ROVER	DOG	12	SAM COOK
298	SPOT	DOG	2	TERRY KIM
341	MORRIS	CAT	4	SAM COOK
519	TWEEDY	BIRD	2	TERRY KIM

Tabel PROCEDURE dengan primary key PROCEDURE ID.

<u>PROCEDURE ID</u>	PROCEDURE DESCRIPTION
01	RABIES VACCINATION
05	HEART WORM TEST
08	TETANUS VACCINATION
10	EXAMINE AND TREAT WOUND
12	EYE WASH
20	ANNUAL CHECKUP

3NF:

Tidak ada atribut non-key yang lebih bergantung pada atribut non-key lain disbanding dengan primary key masing-masing tabel di atas. Maka sudah dalam bentuk normal ke-3.

Normalization Exercise 2

INVOICE

HILLTOP ANIMAL HOSPITAL

DATE: JAN 13/2002

INVOICE # 987

MR. RICHARD COOK

123 THIS STREET

MY CITY, ONTARIO

Z5Z 6G6

<u>PET</u>	<u>PROCEDURE</u>	<u>AMOUNT</u>
ROVER	RABIES VACCINATION	30.00
MORRIS	RABIES VACCINATION	24.00
	TOTAL	54.00
	TAX (8%)	<u>4.32</u>
	AMOUNT OWING	58.32

UNF:

<u>INVOICE NO</u>	DATE	CUSTOMER NAME	ADDRESS	PET NAME	PROCEDURE	AMOUNT
987	JAN 13/2002	RICHAD COOK	123 This Street, My City, Ontario, Z5Z 6G6	ROVER	RABIES VACCINATION	30.00
987	JAN 13/2002	RICHAD COOK	123 This Street, My City, Ontario, Z5Z 6G6	MORRIS	RABIES VACCINATION	24.00

Tabel INVOICE di atas mempunyai primary key gabungan dari invoice no dan pet name.

1NF:

Terdapat atribut berulang yaitu INVOICE NO kita dapat pindahkan ke tabel baru INVOICE DETAIL untuk memuat PET dan PROCEDURE apa saja yang ada dalam suatu invoice.

Juga untuk kolom address dapat kita pecah supaya value nya atomik menjadi kolom address, city, province dan postal code.

Tabel INVOICE

<u>INVOICE NO*</u>	DATE	CUSTOMER NAME	ADDRESS	CITY	PROVINCE	POSTAL CODE
987	JAN 13/2002	RICHAD COOK	123 This Street	MY CITY	ONTARIO	Z5Z G6G

Tabel INVOICE DETAIL

<u>INVOICE NO</u>	PET NAME	PROCEDURE	AMOUNT
987	ROVER	RABIES VACCINATION	30.00
987	MORRIS	RABIES VACCINATION	24.00

2NF:

Tidak ada atribut non-key yang bergantung sebagian dari compound key (tidak ada compound key pada tabel tersebut). Tidak ada partial dependency maka sudah dalam bentuk normal ke-2.

3NF:

Kemudian, terdapat transitive dependency di mana address, city, province dan postal code lebih bergantung terhadap CUSTOMER NAME dibanding key tabel tersebut yang adalah INVOICE NO, kita dapat memindahkannya menjadi tabel baru CUSTOMER.

Tabel INVOICE

<u>INVOICE NO*</u>	DATE	CUSTOMER NAME*
987	JAN 13/2002	RICHAD COOK

Tabel CUSTOMER

<u>CUSTOMER NAME</u>	ADDRESS	CITY	PROVINCE	POSTAL CODE
RICHAD COOK	123 This Street	MY CITY	ONTARIO	Z5Z G6G

Tabel INVOICE DETAIL

<u>INVOICE NO</u>	PET NAME	PROCEDURE	AMOUNT
987	ROVER	RABIES VACCINATION	30.00
987	MORRIS	RABIES VACCINATION	24.00

Normalization Exercise 3

Gallery Customer History Form

Customer Name

Jackson, Elizabeth

Phone (206) 284-6783

123 - 4th Avenue

Fonthill, ON

L3J 4S4

Purchases Made

Artist	Title	Purchase Date	Sales Price
03 - Carol Channing	Laugh with Teeth	09/17/2000	7000.00
15 - Dennis Frings	South toward Emerald Sea	05/11/2000	1800.00
03 - Carol Channing	<u>At</u> the Movies	02/14/2002	5550.00
15 - Dennis Frings	South toward Emerald Sea	07/15/2003	2200.00

The Gill Art Gallery wishes to maintain data on their customers, artists and paintings. They may have several paintings by each artist in the gallery at one time. Paintings may be bought and sold several times. In other words, the gallery may sell a painting, then buy it back at a later date and sell it to another customer.

UNF:

<u>Name</u>	Address	Phone Number	<u>Artist</u>	<u>Art Title</u>	<u>Purchase Date</u>	Sales Price
Elizabeth Jackson	123-4th Avenue Fonthill, ON L3J 4S4	(206) 284-6783	03-Carol Channing	Laugh with Teeth	9/17/2000	7000.00

Elizabeth Jackson	123-4th Avenue Fonthill, ON L3J 4S5	(206) 284-6783	15-Dennis Frings	South Toward Emerald Sea	5/11/2000	1800.00
Elizabeth Jackson	123-4th Avenue Fonthill, ON L3J 4S6	(206) 284-6783	03-Carol Channing	At the Movies	2/14/2002	5550.00
Elizabeth Jackson	123-4th Avenue Fonthill, ON L3J 4S7	(206) 284-6783	15-Dennis Frings	South Toward Emerald Sea	7/15/2003	2200.00

Tabel Customer History di atas mempunyai primary key gabungan dari customer name, artist, title dan purchase date.

1NF:

Terdapat atribut berulang yaitu ADDRESS, PHONE NUMBER kita pindahkan menjadi tabel baru tabel CUSTOMER dengan NAME.

Juga untuk kolom address dapat kita pecah supaya value nya atomik menjadi kolom address, city, province dan postal code.

Juga untuk kolom artist dapat kita pecah supaya value nya atomik menjadi kolom artist code dan artist name.

Tabel CUSTOMER HISTORY

<u>NAME</u>	<u>ARTIST CODE</u>	ARTIST NAME	<u>ART TITLE</u>	<u>PURCHASE DATE</u>	SALES PRICE
Elizabeth Jackson	03	Carol Channing	Laugh with Teeth	9/17/2000	7000.00
Elizabeth Jackson	15	Dennis Frings	South Toward Emerald Sea	5/11/2000	1800.00
Elizabeth Jackson	03	Carol Channing	At the Movies	2/14/2002	5550.00
Elizabeth Jackson	15	Dennis Frings	South Toward Emerald Sea	7/15/2003	2200.00

Tabel CUSTOMER

<u>NAME</u>	ADDRESS	CITY	PROVINCE	POSTAL CODE	PHONE NUMBER
Elizabeth Jackson	123-4th Avenue	Fonthill	ON	L3J 4S4	(206) 284-6783

2NF:

Kemudian, terdapat partial dependency dari artist name terhadap artist code (bagian dari compound key) kita dapat memindahkannya menjadi tabel baru ARTIST.

Tabel CUSTOMER HISTORY

<u>NAME</u>	<u>ARTIST CODE</u>	<u>ART TITLE</u>	<u>PURCHASE DATE</u>	<u>SALES PRICE</u>
Elizabeth Jackson	03	Laugh with Teeth	9/17/2000	7000.00
Elizabeth Jackson	15	South Toward Emerald Sea	5/11/2000	1800.00
Elizabeth Jackson	03	At the Movies	2/14/2002	5550.00
Elizabeth Jackson	15	South Toward Emerald Sea	7/15/2003	2200.00

Tabel CUSTOMER

<u>NAME</u>	<u>ADDRESS</u>	<u>CITY</u>	<u>PROVINCE</u>	<u>POSTAL CODE</u>	<u>PHONE NUMBER</u>
Elizabeth Jackson	123-4th Avenue	Fonthill	ON	L3J 4S4	(206) 284-6783

Tabel ARTIST.

<u>ARTIST CODE</u>	<u>ARTIST NAME</u>
03	Carol Channing
15	Dennis Frings

3NF:

Tidak ada atribut non-key yang lebih bergantung pada atribut non-key lain disbanding dengan primary key masing-masing tabel di atas. Maka sudah dalam bentuk normal ke-3.