

DT249: BSc in Information Systems and Information
Technology
SDEV2002: Database Systems

Lab Exercise 3

Normalization

In this exercise the idea is to practice the techniques of normalization to third normal form (3NF). I'll go through the solution in the next class.

Read every word of this assignment in its entirety before you begin.
ABSOLUTELY DO NOT "SKIM"

1. Examine the table shown below.

<i>branchNo</i>	<i>branchAddress</i>	<i>telNos</i>
B001	8 Jefferson Way, Portland, OR 97201	503-555-3618, 503-555-2727, 503-555-6534
B002	City Center Plaza, Seattle, WA 98122	206-555-6756, 206-555-8836
B003	14 – 8th Avenue, New York, NY 10012	212-371-3000
B004	16 – 14th Avenue, Seattle, WA 98128	206-555-3131, 206-555-4112

- (a) Why is this table not in 1NF?
(b) Describe and illustrate the process of normalizing the data shown in this table to third normal form (3NF).
(c) Identify the primary, alternate and foreign keys in your 3NF relations.

2. Examine the table shown below.

<i>staffNo</i>	<i>branchNo</i>	<i>branchAddress</i>	<i>name</i>	<i>position</i>	<i>hoursPerWeek</i>
S4555	B002	City Center Plaza, Seattle, WA 98122	Ellen Layman	Assistant	16
S4555	B004	16 – 14th Avenue, Seattle, WA 98128	Ellen Layman	Assistant	9
S4612	B002	City Center Plaza, Seattle, WA 98122	Dave Sinclair	Assistant	14
S4612	B004	16 – 14th Avenue, Seattle, WA 98128	Dave Sinclair	Assistant	10

- (a) Why is this table not in 2NF?
(b) Describe and illustrate the process of normalizing the data shown in this table to third normal form (3NF).

(c) Identify the primary, (alternate) and foreign keys in your 3NF relations.

3. Examine the table shown below.

<i>branchNo</i>	<i>branchAddress</i>	<i>telNo</i>	<i>mgrStaffNo</i>	<i>name</i>
B001	8 Jefferson Way, Portland, OR 97201	503-555-3618	S1500	Tom Daniels
B002	City Center Plaza, Seattle, WA 98122	206-555-6756	S0010	Mary Martinez
B003	14 – 8th Avenue, New York, NY 10012	212-371-3000	S0145	Art Peters
B004	16 – 14th Avenue, Seattle, WA 98128	206-555-3131	S2250	Sally Stern

(a) Why is this table not in 3NF?

(b) Describe and illustrate the process of normalizing the data shown in this table to third normal form (3NF).

(c) Identify the primary, (alternate) and foreign keys in your 3NF relations.