LAB-7

1. As he shows you the spreadsheet, having just signed your consulting agreement, he asks what you think of it. How do you reply?

The given sample table looks in such a way that it contains too much data and repeating group of fields and this table doesn't give a clarity in understanding the spread sheet.

2. Put his data in 1NF and display it?

PackId	TagNum	InstalDate	Software cost
AC01	32808	09-13-1995	754.95
DB32	32808	12-09-1995	380.00
DB32	37691	06-15-1995	380.00
DB33	57772	05-27-1995	412.77
WP08	32808	01-12-1996	185.00
WP08	37691	06-15-1995	227.50
WP08	57222	05-27-1995	170.24
WP09	59836	10-30-1995	35.00
WP09	77740	05-27-1995	35.00

3. What is the Primary key?

The combination of PackId and TagNum gives us the primary key.

4. Display New Table?

PackId	TagNum	InstalDate	SoftwareCost	Software	PCModel
AC01	32808	09-13-1995	754.95	Zork	HP
DB32	32808	12-09-1995	380.00	Portal	HP
DB32	37691	06-15-1995	380.00	Portal	Acer
DB33	57772	05-27-1995	412.77	WindowsNT	Apple
WP08	32808	01-12-1996	185.00	DirectX	HP
WP08	37691	06-15-1995	227.50	DirectX	Acer
WP08	57222	05-27-1995	170.24	DirectX	Lenova
WP09	59836	10-30-1995	35.00	Tracker	IBM
WP09	77740	05-27-1995	35.00	Tracker	Sony

5. Identify and document all the Functional Dependencies ?

From the above table Software Name depends on PackId and Computer Name depends on TagNum. So, these two are functionally dependent.

6. Explain why this new table is not in third normal form ?

The above table doesn't satisfy the 2nd normal form and the all columns are not dependent on the primary keys of the table. So, it is not in 3rd normal form.

Decompose your 1NF table into a set of tables that are in at least third normal form.

Applications

PackId	Software
AC01	Zork
DB32	Portal
DB33	WindowsNT
WP08	DirectX
WP09	Tracker

Systems

TagNum	PCModel
32808	HP
37691	Acer
57772	Apple
57222	Lenova
59836	IBM
77740	Sony

Installation

TagNum	InstalDate	SoftwareCost
32808	09-13-1995	754.95
32808	12-09-1995	380.00
37961	06-15-1995	380.00
57772	05-27-1995	412.77
32808	01-12-1996	185.00
37691	06-15-1995	227.50
57222	05-27-1995	170.24
59836	10-30-1995	35.00
77740	05-27-1995	35.00

7. Identify all primary keys (determinants) for all tables?

 (PackId} from Applications,{TagNum} from Systems and {TagNum+InstalDate} from Installations are primary keys of all the decomposed tables.

8. Identify all functional dependencies for all tables?

   a. { PackId➔Software } :: from Application
   b. { TagNum➔PCModel } :: Systems
   c. { TagNum,InstalDate➔SoftwareCost } :: Installation

9. Explain why the new tables are in third normal form?

From the definition of the 3rd normal form it is known that is should satisfy the 2nd normal form and the columns in a table should depend on the primary key of the table. These two conditions are satisfied in the above tables. So these are in 3NF.