

Lab 7

Part 1:

1. I would say that the structure of the system needs to be redesigned to avoid inconsistent data.
2. Spreadsheet in 1NF

PakID	TagNum	InstallDate	SoftwareCost
AC01	32808	09-13-1995	745.95
DB32	32808	12-03-1995	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. The primary key is the TagNum.

Part 2:

4. New table with two new columns software package name and computer model

PakID	TagNum	InstallDate	SoftwareCost	PackName	CmptModel
AC01	32808	09-13-1995	745.95	Zork	Apple
DB32	32808	12-03-1995	380.00	Portal	Apple
DB32	37691	06-15-1995	380.00	Portal	Toshiba
DB33	57772	05-27-1995	412.77	Microsoft Word	HP
WP08	32808	01-12-1996	185.00	Paint	Apple
WP08	37691	06-15-1995	227.50	Paint	Toshiba
WP08	57222	05-27-1995	170.24	Paint	Dell
WP09	59836	10-30-1995	35.00	Eclipse	Alienware
WP09	77740	05-27-1995	35.00	Eclipse	Samsung

5. Functional Dependencies

TagNum \rightarrow CmptModel

PackID \rightarrow PackName

6. This table is not in 3NF because it has a lot of redundant information therefore breaking the 2NF and there are multiple columns relying on different columns for information. There is no single key for the columns.

Part 3:

Packages

PackID	PackName
AC01	Zork
DB32	Portal
DB33	Microsoft Word
WP08	Paint
WP09	Eclipse

Computers

TagNum	CmptModel
32808	Apple
37691	Toshiba
57772	HP
57222	Dell
59836	Alienware
77740	Samsung

Installations

PakID	TagNum	InstallDate	SoftwareCostUSD
AC01	32808	09-13-1995	745.95
DB32	32808	12-03-1995	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

7. **Primary Keys**

Packages Table: PackID

Computers Table: TagNum

Installations Table: PackID and TagNum

8. **Functional Dependencies**

Packages Table: PackID → PackName

Computers Table: TagNum → CmptModel

Installations Table: PakID, TagNum → InstallDate, SoftwareCostUSD

9. These new tables are in 3NF because there is no data redundancy on any table satisfying the 1NF, every table has a unique key, and there is no key dependency for multiple columns satisfying the 2NF.

10.

