

Kevin Bruce

## Normalization 1

3/28/2014

### Part One:

1. I would tell the client that the data he gave me does not agree with 1NF because some attributes in the field have multiple value.
- 2.

PackageID	TagNum	InstallDate	SoftwareCost
AC01	32808	09-13-1995	754.95
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	15-27-1995	35.00

3. The primary key is PackageID and TagNum

### Part Two:

4.

PackageID	TagNum	InstallDate	SoftwareCost	SoftwarePackage Name	CompModel
AC01	32808	09-13-1995	754.95	Halo	Apple
DB32	32808	12-03-1995	380.00	Sonic	Apple
DB32	37691	06-15-1995	380.00	Sonic	Samsung
DB33	57772	05-27-1995	412.77	FIFA	Apple
WP08	32808	01-12-1996	185.00	Angry Birds	Apple
WP08	37691	06-15-1995	227.50	Angry Birds	Samsung
WP08	57222	05-27-1995	170.24	Angry Birds	HP
WP09	59836	10-30-1995	35.00	Flappy Bird	Lenovo
WP09	77740	15-27-1995	35.00	Flappy Bird	Lenovo

5. SofatwarePackageName is dependent on PackageID, and CompModel is dependent on TagNum.
6. This is not in 3NF because some columns in the table are functionally dependent on other columns.

A.

PackageID	TagNum	InstallDate	SoftwareCost
AC01	32808	09-13-1995	754.95
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	15-27-1995	35.00

B.

PackageID	SoftwarePackage Name
AC01	Halo
DB32	Sonic
DB33	FIFA
WP08	Angry Birds
WP09	Flappy Bird


C.

TagNum	CompID
32808	Apple
37691	Samsung
57772	Apple
57222	HP
59836	Lenovo
77740	Lenovo


7. The primary key for 1 is PackageID and TagNum.  
The primary key for 2 is PackageID.  
The primary key for 3 is TagNum.
8. SoftwarePackageName is dependent on PackageID, and CompModel is dependent on TagNum.
9. The tables are now in 3NF because it is 2NF and all nonprimary fields are dependent on the primary key.

10.

PackageID	SoftwarePackage Name
AC01	Halo
DB32	Sonic
DB33	FIFA
WP08	Angry Birds
WP09	Flappy Bird



PackageID	TagNum	InstallDate	SoftwareCost
AC01	32808	09-13-1995	754.95
DB32	32808	12-03-1995	380.00
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WP08	37691	06-15-1995	227.50
WP08	57222	05-27-1995	170.24
WP09	59836	10-30-1995	35.00
WP09	77740	15-27-1995	35.00



TagNum	CompID
32808	Apple
37691	Samsung
57772	Apple
57222	HP
59836	Lenovo
77740	Lenovo