

Omar Mahmud  
Lab 7 – Normalization Part 1

PackageID	TagNumber	InstallDate	SoftwareCostUSD
AC01	32808	09-13-2005	754.95
DB32	32808	12-03-2005	380.00
	37691	06-15-2005	380.00
DB33	57772	05-27-2005	412.77
WP08	32808	01-12-2006	185.00
	37691	06-15-2005	227.50
	57222	05-27-2005	170.24
WP09	59836	10-30-2005	35.00
	77740	05-27-2005	35.00

1. I think the collection of data is thorough, I just think there might be better ways to display this data to make everything more consistent and less confusing. Like there are tag numbers that are the same for different packages, and same dates of installation.

2.

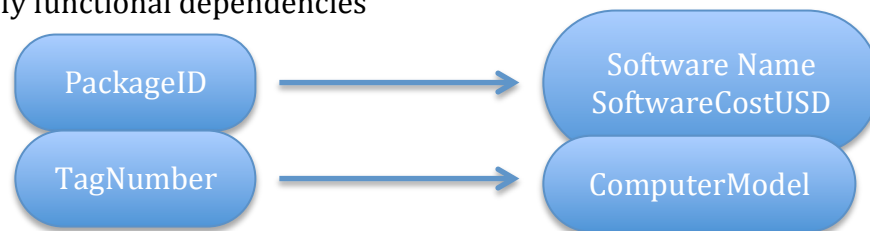
PackageID	TagNumber	InstallDate	SoftwareCostUSD
AC01	32808	09-13-2005	754.95
DB32	32808	12-03-2005	380.00
DB32	37691	06-15-2005	380.00
DB33	57772	05-27-2005	412.77
WP08	32808	01-12-2006	185.00
WP08	37696	06-15-2005	227.50
WP08	57222	05-27-2005	170.24
WP09	59836	10-30-2005	35.00
WP09	77740	05-27-2005	35.00

3. The Primary Key is the PackageID

4. Add two columns

PackageID	TagNumber	InstallDate	SoftwareCostUSD	SoftwareName	ComputerModel
AC01	32808	09-13-2005	754.95	Adobe Studio 6	MacBook Pro
DB32	32808	12-03-2005	380.00	Microsoft Office	MacBookPro
	37691	06-15-2005	380.00	Microsoft Office	Lenovo T540
DB33	57772	05-27-2005	412.77	Oracle	Gateway NV52
WP08	32808	01-12-2006	185.00	Zork	MacBookPro
	37691	06-15-2005	227.50	Zork	Lenovo T540
	57222	05-27-2005	170.24	Zork	Gateway NV52
WP09	59836	10-30-2005	35.00	VirtualDJ Pro	MacBook Air
	77740	05-27-2005	35.00	VirtualDJ Pro	Lenovo Yoga 3

5. Identify functional dependencies



6. This isn't in 3NF because the table would not show the computer models in the table—that would be a different table. The first table would include the tag number, and then a separate table would show the tag number with the associated computer model. There are two primary keys in this table and the non-prime attributes are not all dependent on them.

7. **3NF**

PackageID	SoftwareName	SoftwareCostUSD	InstallDate	TagNumber
AC01	Adobe Studio 6	754.95	09-13-2005	32808
DB32	Microsoft Office	380.00	12-03-2005	32808
	Microsoft Office	380.00	06-15-2005	37691
DB33	Oracle	412.77	05-27-2005	57772
WP08	Zork	185.00	01-12-2006	32808
	Zork	227.50	06-15-2005	37691
	Zork	170.24	05-27-2005	57222
WP09	VirtualDJ Pro	35.00	10-30-2005	59836
	VirtualDJ Pro	35.00	05-27-2005	77740

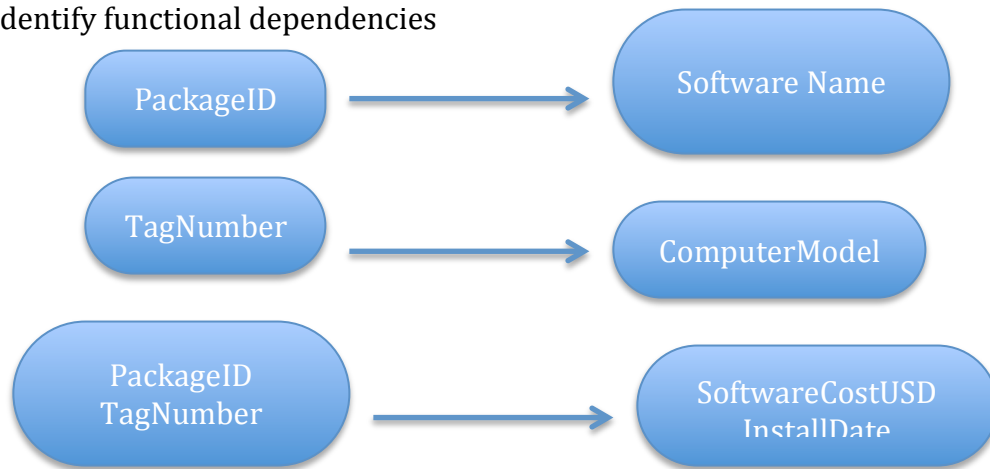
TagNumber	ComputerModel
32808	MacBook Pro
37691	Lenovo T540
57772	Gateway NV52
59836	MacBook Air
77740	Lenovo Yoga 3

**Identify Primary Keys**

Primary Key: PackageID

Primary Key: TagNumber

8. Identify functional dependencies



9. The new tables are in 3NF because now the functional dependences are apparent in the tables. The package ID wasn't unique for the computer models. Now, their in a table in which the Tag Number is unique to the computer model

10.

