

Kelly Maud  
Normalization 1  
October 27<sup>th</sup> 2013

Part One:

I would say "the spreadsheet has lots of duplicate data and we should try to rename columns better. If someone looked at this they wouldn't necessarily know that TagNumber means the computer. Let's try to organize this better so it is self-explanatory and more efficient."

Ordno	PackageID	TagNumber	InstallDate	SoftwarePriceUSD
AC01, 32808	AC01	32808	09-13-2005	754.00
DB32, 32808	DB32	32808	12-03-2005	380.00
DB32, 37961	DB32	37691	06-15-2005	380.00
DB32, 57772	DB33	57772	05-27-2005	412.77
WP08, 32808	WP08	32808	01-12-2006	185.00
WP08, 37691	WP08	37691	06-15-2005	227.50
WP08, 57222	WP08	57222	05-27-2005	170.24
WP09, 59836	WP09	59836	10-30-2005	35.00
WP09, 77740	WP09	77740	05-27-2005	35.00

The primary key is a combination of the PackageID and TagNumber.

Part Two:

Ordno	PackageID	TagNumber	InstallDate	SoftwarePriceUSD	SoftwarePackageName	ComputerModel
AC01, 32808	AC01	32808	09-13-2005	754.00	Zork	Dell
DB32, 32808	DB32	32808	12-03-2005	380.00	Portal	Dell
DB32, 37961	DB32	37691	06-15-2005	380.00	Portal	Apple
DB32, 57772	DB33	57772	05-27-2005	412.77	Adobe	Apple
WP08, 32808	WP08	32808	01-12-2006	185.00	Microsoft Word	Dell
WP08, 37691	WP08	37691	06-15-2005	227.50	Microsoft Word	HP
WP08, 57222	WP08	57222	05-27-2005	170.24	Microsoft Word	Lenovo
WP09, 59836	WP09	59836	10-30-2005	35.00	Microsoft Excel	HP
WP09, 77740	WP09	77740	05-27-2005	35.00	Microsoft Excel	HP

PackageID -> SoftwarePackageName

TagNumber -> ComputerModel

Ordno -> PackageID

Ordno -> TagNumber

Ordno -> InstallDate

Ordno -> SoftwarePriceUSD

Ordno -> SoftwarePackageName

Ordno -> ComputerModel

This is not in third Normal Form because there are multiple key dependencies in non-key attributes. The first two dependencies should not exist in the same table as the rest of the dependencies. In this table, SoftwarePackageName is dependent on PackageID which is dependent on Ordno. This is a multiple key dependency and it proves that this table is not in third Normal Form.

Part Three:

Orders

Ordno	PackageID	TagNumber	InstallDate	SoftwarePriceUSD
AC01, 32808	AC01	32808	09-13-2005	754.00
DB32, 32808	DB32	32808	12-03-2005	380.00
DB32, 37961	DB32	37691	06-15-2005	380.00
DB32, 57772	DB33	57772	05-27-2005	412.77
WP08, 32808	WP08	32808	01-12-2006	185.00
WP08, 37691	WP08	37691	06-15-2005	227.50
WP08, 57222	WP08	57222	05-27-2005	170.24
WP09, 59836	WP09	59836	10-30-2005	35.00
WP09, 77740	WP09	77740	05-27-2005	35.00

Primary Key:

Ordno

Dependencies:

Ordno -> PackageID

Ordno -> TagNumber

Ordno -> InstallDate

Ordno -> SoftwarePriceUSD

ComputerModels

TagNumber	ComputerModel
32808	Dell
37691	Apple
57772	Apple
57222	Lenovo
59836	HP
77740	HP

Primary Key:

TagNumber

Dependencies:

TagNumber -> ComputerModel

#### SoftwarePackages

PackageID	SoftwarePackageName
AC01	Zork
DB32	Portal
DB33	Adobe
WP08	MicrosoftWord
WP09	Microsoft Excel

Primary Key:

PackageID

Dependencies:

PackageID -> SoftwarePackageName

These tables are in third Normal Form because they are in second Normal Form and there are no multiple key dependencies in non-key attributes. In all of these tables attributes depend on the key, the whole key and nothing but the key.

Orders

<u>Ordno</u>	<u>PackageID</u>	<u>TagNumber</u>	<u>InstallDate</u>	<u>SoftwarePriceUSD</u>
AC01, 32808	AC01	32808	09-13-2005	754.00
DB32, 32808	DB32	32808	12-03-2005	380.00
DB32, 37691	DB32	37691	06-15-2005	380.00
DB32, 57772	DB33	57772	05-27-2005	412.77
WP08, 32808	WP08	32808	01-12-2006	185.00
WP08, 37691	WP08	37691	06-15-2005	227.50
WP08, 57222	WP08	57222	05-27-2005	170.24
WP09, 59836	WP09	59836	10-30-2005	35.00
WP09, 77740	WP09	77740	05-27-2005	35.00

SoftwarePackages

<u>PackageID</u>	<u>SoftwarePackageName</u>
AC01	Zork
DB32	Portal
DB33	Adobe
WP08	MicrosoftWord
WP09	Microsoft Excel

ComputerModels

<u>TagNumber</u>	<u>ComputerModel</u>
32808	Dell
37691	Apple
57772	Apple
57222	Lenovo
59836	HP
77740	HP