Jon Higgins

Part One:

After Kramerica CEO Miles Meservy has shown me the spreadsheet and asks me what I think, I would say: "That's a good start, but there is duplicate data and also, some of the column names should be renamed because it is not necessarily clear what each column represents. We should reorganize this better so it is clearer and more efficient so that there is less mistakes."

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 the TagNumber connected by a dash symbol.

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	Cake	HP
WP08-32808	WP08	32808	01-12-2006	185.00	Cougar	Dell
WP08-37691	WP08	37691	06-15-2005	227.50	Cougar	Apple
WP08-57222	WP08	57222	05-27-2005	170.24	Cougar	Asus
WP09-59836	WP09	59836	10-30-2005	35.00	Dream	Lenovo
WP09-77740	WP09	77740	05-27-2005	35.00	Dream	Lenovo

PackageID → SoftwarePackageName

TagNumber →ComputerModel

Ordno → PackageID

Ordno → TagNumber

Ordno → InstallDate

Ordno → SoftwarePriceUSD

Ordno → SoftwarePackageName

Ordno → ComputerModel

This Table is not 3NF because there are multiple key dependencies in non-key attributes. The first couple of dependencies shouldn't exist in the same table as the rest of the dependencies. Also, there is a multiple key dependency with: Ordno→PackageID→SoftwarePackageName which proves that this is not 3NF.

Part 3:

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	HP
57222	Asus
59836	Lenovo
77740	Lenovo

Primary Key: TagNumber
Dependencies:
TagNumber → ComputerModel

SoftwarePackages

SoftwarePackage Name	PackageID
Zork	AC01
Portal	DB32
Cake	DB33
Cougar	WP08
Dream	WP09

Primary Key: PackageID
Dependencies:
PackageID → SoftwarePackageName

These tables are in 3NF because there are no multiple key dependencies in non-key attributes. In the tables the attributes depend on the key and nothing else.

Order

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
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WP09-59836	WP09	59836	10-30-2005	35.00
WP09-77740	WP09	77740	05-27-2005	35.00

ComputerModels

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

SoftwarePackages

SoftwarePackage Name	PackageID
Zork	AC01
Portal	DB32
Cake	DB33
Cougar	WP08
Dream	WP09