

PackageID	TagNumber	InstallDate	SoftwareCostUSD
AC01	32808	09-12-2005	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	37691	06-15-2005	227.50
WP08	57222	05-27-2005	170.24
WP09	59826	10-30-2005	35.00
WP09	77740	05-27-2005	35.00

Part 1:

1) I would let him know that each intersection of a row and a column should only have one value. So where he has PackageID: 'DB32' followed by two tag numbers, there should only be one tag number per row. To fix this, you simply add another row where PackageID = DB32 and TagNumber = "37691" which allows an individual to specifically reference each different Package.

2) See table above

3) The primary key is PackageID, TagNumber.

Part 2:

4)

PackageID	TagNumber	InstallDate	SoftwareCostUSD	SoftwareName	ComputerModel
AC01	32808	09-12-2005	754.95	Zork	IBM
DB32	32808	12-03-2005	380.00	Portal	IBM
DB32	37691	06-15-2005	380.00	Portal	ASUS
DB33	57772	05-27-2005	412.77	SIMS	Dell
WP08	32808	01-12-2006	185.00	GTA	IBM
WP08	37691	06-15-2005	227.50	GTA	ASUS
WP08	57222	05-27-2005	170.24	GTA	Lenovo
WP09	59826	10-30-2005	35.00	DOTA	Apple
WP09	77740	05-27-2005	35.00	DOTA	AlienWare

5)

TagNumber → ComputerModel

PackageID → SoftwareName

6) This table is not in third normal form because it does not meet the criteria to be in second normal form. We can see that there is a partial key dependency, where SoftwareName is functionally dependent on PackageID but not on TagNumber.

Part Three:

PackageID	SoftwareName
AC01	Zork
DB32	Portal
DB33	SIMS
WP08	GTA
WP09	DOTA

-Primary Key PackageID

PackageID → SoftwareName

TagNumber	ComputerModel
32808	IBM
37691	ASUS
57772	Dell
59826	Apple
57222	Lenovo
77740	AlienWare

-Primary Key TagNumber

TagNumber → ComputerModel

PackageID	TagNumber	InstallDate	SoftwareCostUSD
AC01	32808	09-12-2005	754.95
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WP08	57222	05-27-2005	170.24
WP09	59826	10-30-2005	35.00
WP09	77740	05-27-2005	35.00

-Primary Key PackageId, TagNumber

(PackageId, TagNumber) → InstallDate

(PackageId, TagNumber) → SoftwareCostUSD

-Foreign Keys: PackageId, TagNumber

9) All tables are in third normal form because they exist in second and first normal. All tables are in 1st normal for since each intersection of a row and column only contains 1 atomic value and there are no repeating groups. All tables are in 2nd normal form since all non-key attributes are fully dependent on its primary key; ieSoftwareName is only dependent on its primary key PackageID, ComputerModel is fully dependent on its primary key TagNumber, and InstallDate and SoftwareCostUSD are only determined by their primary key (PackageID, TagNumber).



