

## Lab 7: Normalization part 1

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1.

- a. When he asks me what I think of it, I tell him that it is a great start and praise it to keep his mood up.

b.

PackageID	TagNumber	InstallDate	SoftwareCostUSD
AC01	32808	9/13/2005	754.95
DB32	32808	12/3/2005	380
DB32	37691	6/15/2005	380
DB33	57772	5/27/2005	412.77
WP08	32808	1/12/2006	185
WP08	37691	6/15/2005	227.5
WP08	57222	5/27/2005	170.24
WP09	59536	10/30/2005	35
WP09	77740	5/27/2005	35

- c. The primary key is {PackageID, TagNumber}

2.

a.

PackageID	TagNumber	InstallDate	SoftwareCostUSD	SoftwareName	ComputerModel
AC01	32808	9/13/2005	754.95	Zork	Lenovo
DB32	32808	12/3/2005	380	Portal	Apple
DB32	37691	6/15/2005	380	Portal	IBM
DB33	57772	5/27/2005	412.77	DOTA	Apple
WP08	32808	1/12/2006	185	D&D	Lenovo
WP08	37691	6/15/2005	227.5	D&D	IBM
WP08	57222	5/27/2005	170.24	D&D	Lenovo
WP09	59536	10/30/2005	35	Sims	Lenovo
WP09	77740	5/27/2005	35	Sims	IBM

- b. PackageID → SoftwareName

TagNumber → ComputerModel

{PackageID, TagNumber} → SoftwareCostUSD, Install Date

- c. This is not in third normal form because it has multiple key dependencies

3.

a.

PackageID	Software Name
AC01	Zork
DB32	Portal
DB33	DOTA
WP08	D&D
WP09	Sims

TagNumber	ComputerModel
32808	Lenovo
37691	IBM
57772	Apple
57222	Lenovo
59536	Lenovo
77740	IBM

OrderID	PackageID	TagNumber	InstallDate	SoftwareCostUSD
1	AC01	32808	9/13/2005	754.95
2	DB32	32808	12/3/2005	380
3	DB32	37691	6/15/2005	380
4	DB33	57772	5/27/2005	412.77
5	WP08	32808	1/12/2006	185
6	WP08	37691	6/15/2005	227.5
7	WP08	57222	5/27/2005	170.24
8	WP09	59536	10/30/2005	35
9	WP09	77740	5/27/2005	35

The primary keys are PackageID, TagNumber, and OrderID

b. PackageID → SoftwareName

TagNumber → Computer Model

OrderID → PackageID, TagNumber, InstallDate, SoftwareCostUSD

c. These are in 3NF because they follow all of the rules for 2NF and there are no multiple key dependencies

d.

