

Lab 7: Normalization 1

Part 1

- 1) I will respond by telling him that the spreadsheet is terrible and needs to be fixed because it is not. Therefore, this needs to be fixed and that is the reason you hired me!
- 2) Here is the data normalized under the first normal form:

PackID	TagNum	InstallMonth	InstallDay	InstallYear	SoftwareCost
AC01	32808	09	13	1995	754.95
DB32	32808	12	03	1995	380.00
DB32	37691	06	15	1995	380.00
DB33	57772	05	27	1995	412.77
WP08	32808	01	12	1996	185.00
WP08	37691	06	15	1995	227.50
WP08	57222	05	27	1995	170.24
WP09	59836	10	30	1995	35.00
WP09	77740	05	27	1995	35.00

- 3) The primary key is PACKID and TagNum

Part 2

- 4)

PackID	Software	TagNum	CompModel	InstallMonth	InstallDay	InstallYear	SoftwareCost
AC01	Portal	32808	Apple	09	13	1995	754.95
DB32	Zork	32808	Apple	12	03	1995	380.00
DB32	Zork	37691	Dell	06	15	1995	380.00
DB33	Bioshock	57772	Lenovo	05	27	1995	412.77
WP08	Minecraft	32808	Apple	01	12	1996	185.00
WP08	Minecraft	37691	Dell	06	15	1995	227.50
WP08	Minecraft	57222	Acer	05	27	1995	170.24
WP09	Starcraft	59836	Samsung	10	30	1995	35.00
WP09	Starcraft	77740	Asus	05	27	1995	35.00

- 5) The following are the functional dependencies of the above table:
PackID → Software
TagNum → CompModel
PackID, TagNum → SoftwareCost, InstallMonth, InstallDay, InstallYear
- 6) This table is not in third normal form because this table does not hold the second normal form. In second normal form, there must be no partial key dependencies and

therefore, since Software is only dependent on PackID and not on TagNum as well, then this doesn't hold for second normal form, and consequently, third normal form.

Part 3

7) Here are the tables that satisfy the third normal form attribute:

SoftwarePackages	
PackID	Software
AC01	Portal
DB32	Zork
DB33	Bioshock
WP08	Minecraft
WP09	Starcraft

ComputerTypes	
TagNum	CompModel
32808	Apple
37691	Dell
57222	Lenovo
57772	Acer
59836	Samsung
77740	Asus

Install					
PackID	TagNum	InstallMonth	InstallDay	InstallYear	SoftwareCost
AC01	32808	09	13	1995	754.95
DB32	32808	12	03	1995	380.00
DB32	37691	06	15	1995	380.00
DB33	57772	05	27	1995	412.77
WP08	32808	01	12	1996	185.00
WP08	37691	06	15	1995	227.50
WP08	57222	05	27	1995	170.24
WP09	59836	10	30	1995	35.00
WP09	77740	05	27	1995	35.00

The following are the primary keys for each table:

The primary key for the SoftwarePackages table is PackID.

The primary key for the ComputerTypes table is TagNum.

The primary key for the Install table is PackID, TagNum.

8) The functional dependency for the SoftwarePackages table:

PackID → Software.

The functional dependency for the ComputerTypes table:
TagName → CompModel.

The functional dependency for the Install table:
PackID, TagName → InstallMonth, InstallDay, InstallYear, SoftwareCost

9) The three tables are now in third normal form because there are no more partial dependencies or multiple dependencies across the tables. As well, the non-key attributes are not dependent on other non-key attributes, therefore solidifying all three normal form rules.

10)

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