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CMPT 308N 114

11/3/16

Part One:

1. Since I just signed with the company and Fred Johnson worked so hard to collect all the data himself, I'll be kind and tell him it's a great start to the process. Then I will let him know that the package IDs can't be grouped together and that the table must be in first normal form.

2.

PackageID	TagNumber	InstallDate	SoftwareCostUSD
AC01	32808	09-13-2005	745.95
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	59836	10-30-2005	35.00
WP09	77740	05-27-2005	35.00

3. The primary key is {PackageID,TagNumber}, which makes a composite key.

Part Two:

4.

Package ID	Tag Number	Install Date	Software CostUSD	Software PackageName	Computer Model
AC01	32808	09-13-2005	745.95	GIMP	Lenovo
DB32	32808	12-03-2005	380.00	Ubuntu	Dell
DB32	37691	06-15-2005	380.00	Ubuntu	Acer
DB33	57772	05-27-2005	412.77	LibreOffice	Dell
WP08	32808	01-12-2006	185.00	Linux	Sony
WP08	37691	06-15-2005	227.50	Linux	Apple
WP08	57222	05-27-2005	170.24	Linux	IBM
WP09	59836	10-30-2005	35.00	Thunderbird	Sony
WP09	77740	05-27-2005	35.00	Thunderbird	Apple

5. PackageID $\longrightarrow$ SoftwarePackageName

   TagNumber $\longrightarrow$ ComputerModel

   {PackageID, TagNumber} $\longrightarrow$ SoftwareCostUSD, InstallDate

6. This table is not in third normal form because it has multiple key dependencies.

Part Three:

Packages:

PackageID	Software PackageName
AC01	GIMP
DB32	Ubuntu
DB33	LibreOffice
WP08	Linux
WP09	Thunderbird

Computers:

Tag Number	Computer Model
32808	Lenovo
32808	Dell
37691	Acer
57772	Dell
32808	Sony
37691	Apple
57222	Dell
59836	Sony
77740	Apple

Installations:

PackageID	TagNumber	InstallDate	SoftwareCostUSD
AC01	32808	09-13-2005	745.95
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	59836	10-30-2005	35.00
WP09	77740	05-27-2005	35.00

7. The first table's primary key is PackageID. Second table's primary key is TagNumber. Third table's primary key is {PackageID, TagNumber}.

8. PackageID ⟶ SoftwarePackageName

   TagNumber ⟶ ComputerModel

   {PackageID, TagNumber} ⟶ InstallDate, SoftwareCostUSD

9. These tables are in third normal form because each table has their own primary key that has functional dependencies. There aren't any tables that have partial or multiple key dependencies.

Packages
- 🔑 PackageID VARCHAR(45)
- ◇ SoftwarePackageName VARCHAR(45)

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Computers
- 🔑 TagNumber INT
- ◇ ComputerModel VARCHAR(45)

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Installations
- 🔑 PackageID VARCHAR(45)
- 🔑 TagNumber INT
- ◇ InstallDate VARCHAR(45)
- ◇ SoftwareCostUSD INT
- 🔶 Packages_PackageID VARCHAR(45)
- 🔶 Computers_TagNumber INT

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