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Assigned on 10/19/2016

Due on 11/3/2016

Lab 7 – Normalization One

PART ONE:

1. I would reply by telling him that given enough time and money I can make this in any form he wants. Also, the fact that he has his data in a spreadsheet is both garish and unsafe. On top of all that, the data is not in 1NF and therefore lacks atomic data.

2.

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

3. In this case, I would make the primary key a composite key made up of PackageID and TagNumber.

PART TWO:

4.

| PackageID | TagNumber | InstallDate | SoftwareCostUSD | SoftwareName | ComputerModel |
|-----------|-----------|-------------|-----------------|--------------|---------------|
| AC01 | 32808 | 09-13-2005 | 754.95 | Zork | IBM |
| DB32 | 32808 | 12-03-2005 | 380.00 | Portal | IBM |
| DB32 | 37691 | 06-15-2005 | 380.00 | Portal | HP |
| DB33 | 57772 | 05-27-2005 | 412.77 | Portal 2 | Apple |
| WP08 | 32808 | 01-12-2006 | 185.00 | Oblivion | IBM |
| WP08 | 37691 | 06-15-2005 | 227.50 | Oblivion | HP |
| WP08 | 57222 | 05-27-2005 | 170.24 | Oblivion | Asus |
| WP09 | 59836 | 10-30-2005 | 35.00 | Skyrim | Razer |
| WP09 | 77740 | 05-27-2005 | 35.00 | Skyrim | Dell |

5. TagNumber → ComputerModel
PackageID → SoftwareName

6. Because ComputerModel depends on TagNumber alone and not the composite key made up of TagNumber and PackageID. Also, the same thing applies for SoftwareName. Therefore, this table is not in 2NF, which also make it impossible to reach 3NF.

PART THREE:

7. PackageID is the primary key for the Softwares table. TagNumber is the Primary key for the Computers table. And PackageID and TagNumber form a composite Primary Key together.
8. SoftwareName has a functional dependency on PackageID, ComputerModel has a functional dependency on TagNumber. I don't believe Install Date or SoftwareCostUSD are dependencies.
9. The new tables are in 1NF because all intersections of rows and columns are atomic. The tables are in 2NF because they are in 1NF and there are no partial dependencies. The tables are in 3NF because they are in 2NF and there are no transitive dependencies.
- 10.

