

I would tell Mr. Meservy that the spreadsheet looks great.

Kramerica

| 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 |

The primary key of this table is the composite key of (TagNumber, PackageID)

Kramerica

| PackageID | TagNumber | InstallDate | SoftwareCostUSD | PackageName | ComputerModel |
|-----------|-----------|-------------|-----------------|-------------|---------------|
| AC01 | 32808 | 09-13-2005 | 754.95 | Cassandra | Acer |
| DB32 | 32808 | 12-03-2005 | 380.00 | Lotus Notes | Acer |
| DB32 | 37691 | 06-15-2005 | 380.00 | Lotus Notes | Lenovo |
| DB33 | 57772 | 05-27-2005 | 412.77 | MySQL | HP |
| WP08 | 32808 | 01-12-2006 | 185.00 | Oracle | Acer |
| WP08 | 37691 | 06-15-2005 | 227.50 | Oracle | Lenovo |
| WP08 | 57222 | 05-27-2005 | 170.24 | Oracle | Toshiba |
| WP09 | 59836 | 10-30-2005 | 35.00 | Mongo | Apple |
| WP09 | 77740 | 05-27-2005 | 35.00 | Mongo | Asus |

Functional Dependencies

TagNumber → ComputerModel

PackageID → PackageName

(TagNumber, PackageID) → InstallDate

(TagNumber, PackageID) → SoftwareCostUSD

This new table is not in 3NF because it is also not in 2NF. The table is not in 2NF

because there is a partial key dependency – PackageName depends on PackageID but not on (TagNumber, PackageID).

Table ComputerModels

| TagNumber | ComputerModel |
|-----------|---------------|
| 32808 | Acer |
| 37691 | Lenovo |
| 57772 | HP |
| 57222 | Toshiba |
| 59836 | Apple |
| 77740 | Asus |

Primary Key: TagNumber

Functional Dependency: TagNumber \rightarrow ComputerModel

Table PackageNames

| PackageID | PackageName |
|-----------|-------------|
| AC01 | Cassandra |
| DB32 | Lotus Notes |
| DB33 | MySQL |
| WP08 | Oracle |
| WP09 | Mongo |

Primary Key: PackageID

Functional Dependency: PackageID \rightarrow PackageName

Table PackageInfo

| 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 |

Primary Key: (TagNumber, PackageID)

Foreign Keys: TagNumber, PackageID

Functional Dependencies: (TagNumber, PackageID → InstallDate

(TagNumber, PackageID → SoftwareCostUSD

These tables are in 3NF because they are in 1NF and 2NF. These tables are in 1NF because each intersection of a row and a column is atomic and the value of each intersection of a row and a column contains one value. These tables are in 2NF because each attribute that is not prime is dependent on the entire key.

ER Diagram

