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DBMGMT

Normalization HW 1

Part 1

I would say the data needs to be normalized.

| PackageID | TagNumber | InstallDate | SoftwareCostUSD |
|-----------|-----------|-------------|-----------------|
| DB32 | 32808 | 12/3/2005 | 380.00 |
| AC01 | 32808 | 9/13/2005 | 754.95 |
| WP08 | 32808 | 1/12/2006 | 185.00 |
| DB32 | 37691 | 6/15/2005 | 380.00 |
| WP08 | 37691 | 6/15/2005 | 227.50 |
| DB33 | 57772 | 5/27/2005 | 412.77 |
| WP08 | 57772 | 5/27/2005 | 170.24 |
| WP09 | 77740 | 5/27/2005 | 35.00 |
| WP09 | 59836 | 10/30/2005 | 35.00 |

The primary key is a composite key of PackageID and TagNumber

Part 2

| PackageID | PackageName | TagNumber | ComputerModel | InstallDate | SoftwareCostUSD |
|-----------|----------------|-----------|-------------------|-------------|-----------------|
| AC01 | Portal | 32808 | Apple MacBook Pro | 9/13/2005 | 754.95 |
| DB32 | Space Invaders | 32808 | Apple MacBook Pro | 12/3/2005 | 380.00 |
| DB32 | Space Invaders | 37691 | Honeywell 316 | 6/15/2005 | 380.00 |
| WP08 | Goldeneye 007 | 37691 | Honeywell 316 | 6/15/2005 | 227.50 |
| DB33 | Defenders | 57772 | Toshiba Satellite | 5/27/2005 | 412.77 |
| WP08 | Goldeneye 007 | 57222 | HP Pavilion | 5/27/2005 | 170.24 |
| WP09 | Half Life | 77740 | IBM Thinkpad | 5/27/2005 | 35.00 |
| WP08 | Goldeneye 007 | 32808 | Apple MacBook Pro | 1/12/2006 | 185.00 |
| WP09 | Half Life | 59836 | Falcon DRX | 10/30/2005 | 35.00 |

The functional dependences are: PackageID and SoftwareName, TagNumber and ComputerModel.

It is not in 3rd normal form because it uses a composite key as its primary key.

Part 3

Table Name: **Software**

| PackageID | PackageName |
|-----------|----------------|
| ACO1 | Portal |
| DB32 | Space Invaders |
| WP08 | Goldeneye 007 |
| DB33 | Defenders |
| WP09 | Half Life |

Table Name: **Computers**

| TagNumber | ComputerModel |
|-----------|-------------------|
| 32808 | Apple MacBook Pro |
| 37691 | Honeywell 316 |
| 57772 | Toshiba Satellite |
| 57222 | HP Pavilion |
| 77740 | IBM Thinkpad |
| 59836 | Falcon DRX |

Table Name: **Installations**

| InstallDate | ComputerModel | PackageName | InstallNumber |
|-------------|-------------------|----------------|---------------|
| 9/13/2005 | Apple MacBook Pro | Portal | 1 |
| 12/3/2005 | Apple MacBook Pro | Space Invaders | 2 |
| 6/15/2005 | Honeywell 316 | Space Invaders | 3 |
| 6/15/2005 | Honeywell 316 | Goldeneye 007 | 4 |
| 5/27/2005 | Toshiba Satellite | Defenders | 5 |
| 5/27/2005 | HP Pavilion | Goldeneye 007 | 6 |
| 5/27/2005 | IBM Thinkpad | Half Life | 7 |
| 1/12/2006 | Apple MacBook Pro | Goldeneye 007 | 8 |
| 10/30/2005 | Falcon DRX | Half Life | 9 |

Table Name: **Costs**

| PackageName | ComputerModel | SoftwareCostUSD | CostNumber |
|----------------|-------------------|-----------------|------------|
| Portal | Apple MacBook Pro | 754.95 | 1A |
| Space Invaders | Apple MacBook Pro | 380.00 | 2B |
| Space Invaders | Honeywell 316 | 380.00 | 3C |
| Goldeneye 007 | Honeywell 316 | 227.5 | 4D |
| Defenders | Toshiba Satellite | 412.77 | 5E |
| Half Life | IBM Thinkpad | 35.00 | 6F |
| Goldeneye 007 | HP Pavilion | 170.24 | 7G |
| Goldeneye 007 | Apple MacBook Pro | 185.00 | 8H |
| Half Life | Falcon DRX | 35.00 | 9I |

Note: SoftwareCostUSD depends on ComputerModel *and* PackageName

- 1) The primary keys for my tables are
 - a. PackageID for Software,
 - b. TagNumber for Computers,
 - c. InstallNumber for Installations,
 - d. CostNumber for Costs.

- 2) The functional dependences for each table are;
 - a. In Software – PackageID and PackageName
 - b. In Computers - TagNumber and ComputerModel
 - c. In Installations - Date, ComputerModel and PackageName
 - d. In Costs – PackageName, ComputerModel and SoftwareCostUSD

- 3) The new table are in 3rd normal form since each one has a whole, primary key.

| TagNumber | ComputerModel |
|-----------|-------------------|
| 32808 | Apple MacBook Pro |
| 37691 | Honeywell 316 |
| 57772 | Toshiba Satellite |
| 57222 | HP Pavilion |
| 77740 | IBM Thinkpad |
| 59836 | Falcon DRX |

| InstallDate | ComputerModel | PackageName | InstallNumber |
|-------------|-------------------|----------------|---------------|
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| 12/3/2005 | Apple MacBook Pro | Space Invaders | 2 |
| 6/15/2005 | Honeywell 316 | Space Invaders | 3 |
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| 10/30/2005 | Falcon DRX | Half Life | 9 |

| PackageID | PackageName |
|-----------|----------------|
| ACO1 | Portal |
| DB32 | Space Invaders |
| WP08 | Goldeneye 007 |
| DB33 | Defenders |
| WP09 | Half Life |

| PackageName | ComputerModel | SoftwareCostUSD | CostNumber |
|----------------|-------------------|-----------------|------------|
| Portal | Apple MacBook Pro | 754.95 | 1A |
| Space Invaders | Apple MacBook Pro | 380.00 | 2B |
| Space Invaders | Honeywell 316 | 380.00 | 3C |
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