## Part One

1. The table looks great as an overview of all your data, but there are a few things that we can do to greatly improve it, and add more structure to it.

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. PackageID and TagNumber together form the primary key

## Part Two

1.

| PackageID | TagNumber | InstallDate | SoftwareCostUSD | SoftwarePackageName | ComputerModel |
|-----------|-----------|-------------|-----------------|---------------------|---------------|
| AC01      | 32808     | 09-13-2005  | 754.95          | Portal              | Dell          |
| DB32      | 32808     | 12-03-2005  | 380.00          | Zork                | Dell          |
| DB32      | 37691     | 06-15-2005  | 380.00          | Zork                | Asus          |
| DB33      | 57772     | 05-27-2005  | 412.77          | Halo                | Apple         |
| WP08      | 32808     | 01-12-2006  | 185.00          | Mortal Kombat       | Dell          |
| WP08      | 37691     | 06-15-2005  | 227.50          | Mortal Kombat       | Asus          |
| WP08      | 57222     | 05-27-2005  | 170.24          | Mortal Kombat       | HP            |
| WP09      | 59836     | 10-30-2005  | 35.00           | Super Smash Bros    | Lenovo        |
| WP09      | 77740     | 05-27-2005  | 35.00           | Super Smash Bros    | Alienware     |

2. PackageID → SoftwarePackageName

TagNumber → ComputerModel

PackageID, TagNumber → InstallDate, SoftwareCostUSD

3. It's not in NF3 because it's not dependent on the whole key, and nothing but the key, Software Cost relies on the 2 keys and InstallDate

## Part Three

- 1. PackageID, TagNumber
- 2. PackageID  $\rightarrow$  SoftwarePackageName TagNumber  $\rightarrow$  ComputerModel

- PackageID, TagNumber → InstallDate, SoftwareCostUSD
- 3. The Tables are in third normal form because the tables have no partial dependencies and all of the attributes of any of the tables directly relates to the primary key of that table.