

Kimberly Tobias  
Assignment 7  
Database Management

1.

a). I would tell him that all the information is there, but that the way it is organized is incorrect for a database. I would say that I would need to reorganize the data in order to have a successful, non duplicated data database.

b).

| PackID | TagNum | InstallDate | SoftwareCost |
|--------|--------|-------------|--------------|
| AC01   | 32808  | 9/13/95     | 754.95       |
| DB32   | 32808  | 12/3/95     | 380          |
| DB32   | 37691  | 6/15/95     | 380          |
| DB33   | 57772  | 5/27/95     | 412.77       |
| WP08   | 32808  | 1/12/96     | 185          |
| WP08   | 37691  | 6/15/95     | 227.5        |
| WP08   | 57222  | 5/27/95     | 170.24       |
| WP09   | 59836  | 10/30/95    | 35           |
| WP09   | 77740  | 5/27/95     | 35           |

c). The primary key would be a compound key of the PackId and TagNum, you need both in order to represent the data.

2.

a).

| PackID | TagNum | InstallDate | SoftwareCost | SoftwarePackage | ComputerModel |
|--------|--------|-------------|--------------|-----------------|---------------|
| AC01   | 32808  | 9/13/95     | 754.95       | Zork            | HP            |
| DB32   | 32808  | 12/3/95     | 380          | Portal          | HP            |
| DB32   | 37691  | 6/15/95     | 380          | Portal          | Dell          |
| DB33   | 57772  | 5/27/95     | 412.77       | Bootstrap       | Windows       |
| WP08   | 32808  | 1/12/96     | 185          | Gimp            | HP            |
| WP08   | 37691  | 6/15/95     | 227.5        | Gimp            | Dell          |
| WP08   | 57222  | 5/27/95     | 170.24       | Gimp            | Linux         |
| WP09   | 59836  | 10/30/95    | 35           | Fabulous        | Apple         |
| WP09   | 77740  | 5/27/95     | 35           | Fabulous        | Toshiba       |

b). Functional Dependencies

PackID → SoftwarePackage

TagNum → ComputerModel

PackID, TagNum → SoftwareCost

c). This table is not in third normal form because SoftwarePackage and ComputerModel are not dependent on the primary key. These should be in their own separate tables for the third normal form rule to not be violated.

3.

Software-----

| PackID | SoftwarePackage |
|--------|-----------------|
| AC01   | Zork            |
| DB32   | Portal          |
| DB33   | Bootstrap       |
| WP08   | Gimp            |
| WP09   | Fabulous        |

Computer-----

| TagNum | ComputerModel |
|--------|---------------|
| 32808  | HP            |
| 37691  | Dell          |
| 57772  | Windows       |
| 57222  | Linux         |
| 59836  | Apple         |
| 77740  | Toshiba       |

Installations-----

| InstallID | PackID | TagNum | InstallDate | SoftwareCost |
|-----------|--------|--------|-------------|--------------|
| 1         | AC01   | 32808  | 9/13/95     | 754.95       |
| 2         | DB32   | 32808  | 12/3/95     | 380          |
| 3         | DB32   | 37691  | 6/15/95     | 380          |
| 4         | DB33   | 57772  | 5/27/95     | 412.77       |
| 5         | WP08   | 32808  | 1/12/96     | 185          |
| 6         | WP08   | 37691  | 6/15/95     | 227.5        |
| 7         | WP08   | 57222  | 5/27/95     | 170.24       |
| 8         | WP09   | 59836  | 10/30/95    | 35           |
| 9         | WP09   | 77740  | 5/27/95     | 35           |

a). Primary Keys

Software: PackID

Computer: TagNum

Installations: InstallID and compound primary key: PackID, TagNum

b). Functional Dependencies

Software: PackID → SoftwarePackage

Computer: TagNum → ComputerModel

Installations: InstallID → PackID, TagNum, InstallDate, SoftwareCost

c). The new tables are in third normal form because everything is dependent on the primary key. The columns that were not dependent on the primary key have been removed and a new table has been created.

d).

