

Normalization One

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QUESTION ONE

When asked for my constructive criticism I would commend CEO Fred Johnson for his efforts, however, I would explain to Mr. Johnson that although he has the some of rudimentary concepts down he is still missing a few key elements.

QUESTION TWO

<u>PackageID</u>	<u>TagNumber</u>	<u>InstallDate</u>	<u>SoftwareCostUSD</u>
AC01	32808	9/13/05	754.95
DB32	32808	12/3/05	380
DB32	37691	6/25/05	380
DB33	57772	5/27/05	412.77
WP08	32808	1/12/06	185
WP08	37691	6/15/05	227.5
WP08	57222	5/27/05	170.24
WP09	59836	10/30/05	35
WP09	77740	5/27/05	35

QUESTION THREE

The primary key for this table will be the combination of PackageID and TagNumber. The combination of these two values can be referred to as a composite key.

QUESTION FOUR

PackageID	TagNumber	InstallDate	<u>SoftwareCostUSD</u>	ComputerModel	<u>SoftwarePackageName</u>
AC01	32808	9/13/05	754.95	Apple	Zork
DB32	32808	12/3/05	380.00	Apple	Portal
DB32	37691	6/25/05	380.00	HP	Portal
DB33	57772	5/27/05	412.77	Lenovo	Minx
WP08	32808	1/12/06	185.00	Apple	Trunks
WP08	37691	6/15/05	227.50	HP	Trunks
WP08	57222	5/27/05	170.24	Lenovo	Trunks
WP09	59836	10/30/05	35.00	Asus	COD
WP09	77740	5/27/05	35.00	Dell	COD

QUESTION FIVE

FUNCTIONAL DEPENDENCIES

1. **PackageID \rightarrow SoftwarePackageName**
2. **TagNumber \rightarrow ComputerModel**
3. **PackageID & TagNumber \rightarrow InstallDate, SoftwareCost**

QUESTION SIX

This table fails to meet the standard necessary to qualify for third normal form because its not even in second normal form. The table has several partial and multiple key dependencies. Ultimately, not all data values stored within the table can be determined by the candidate key.

QUESTION SEVEN

IDENTIFY ALL PRIMARY KEY (DETERMINANTS) FOR ALL TABLES.

- 1. SoftwarePackage Primary Key: PackageID**
- 2. Installations Primary Key: PackageID, TagNumber**
- 3. Computers Primary Key: TagNumber**

QUESTION EIGHT

IDENTIFY ALL FUNCTIONAL DEPENDENCIES FOR ALL TABLES.

- 1. SoftwarePackage: PackageID \rightarrow SoftwarePackageName**
- 2. Installations: PackageID & TagNumber \rightarrow InstallDate, SoftwareCostUSD**
- 3. Computers: TagNumber \rightarrow ComputerModel**

QUESTION NINE

WHY ARE THE NEW TABLES IN THIRD NORMAL FORM?

These new tables are now in third normal form because the possibility of duplications are drastically reduced. The attributes of the new tables now depend on nothing but their primary keys. Also, the tables no longer have contain multiple or partial dependencies. This new design implementation ensures referential integrity throughout the tables.

QUESTION TEN

