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March 21, 2017

Lab 7

Part One:

1. I think that this table is OK but it is not normalized. Therefore, it will create anomaly problems such as update, delete, and insert.
2. Data in 1NF:

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. The primary key is a composite key of TagNumber and PackageID.

Part Two:

4. New table with added columns:

PackageID	TagNumber	SoftwarePackage Name	ComputerModel	InstallDate	SoftwareCostUSD
AC01	32808	Zork	Apple	09-13-2005	754.95
DB32	32808	Portal	Apple	12-03-2005	380.00
DB32	37691	Portal	Dell	06-15-2005	380.00
DB33	57772	Zork	Dell	05-27-2005	412.77
WP08	32808	Portal	Apple	01-12-2006	185.00
WP08	37691	Portal	Dell	06-15-2005	227.50
WP08	57222	Portal	HP	05-27-2005	170.24
WP09	59836	Zork	IBM	10-30-2005	35.00
WP09	77740	Zork	Dell	05-27-2005	35.00

5. Functional dependencies include:

PackageID, TagNumber \rightarrow InstallDate, SoftwareCostUSD

TagNumber \rightarrow ComputerModel

PackageID \rightarrow SoftwarePackageName

6. This new table is not in third normal form because there are partial dependencies. In

order for a table to be in third normal form, it has to be in second normal form, which it is not because of these partial dependencies.

Part Three:

Package Table			
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

Asset Tag Table	
TagNumber	ComputerModel
32808	Apple
32808	Apple
37691	Dell
57772	Dell
32808	Apple
37691	Dell
57222	HP
59836	IBM

77740	Dell
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Software Table	
PackageID	SoftwarePackageName
AC01	Zork
DB32	Portal
DB32	Portal
DB33	Zork
WP08	Portal
WP08	Portal
WP08	Portal
WP09	Zork
WP09	Zork

7. All primary keys (determinants) for all tables are (PackageID, TagNumber), PackageID, TagNumber

8. Functional dependencies for all tables include:

PackageID, TagNumber \rightarrow InstallDate, SoftwareCostUSD

TagNumber \rightarrow ComputerModel

PackageID \rightarrow SoftwarePackageName

9. The new tables are in third normal form because there are no multi-key dependencies or anomalies.

10. E/R Diagram:

