

Lab 07

Part 1

1.) Using a spreadsheet is an inefficient way to store data. Its hard to maintain and update the data. Their is no way to query the data set. Their is no way to verify and efforce the integrity of the data. It is also insecure. This data should be stored in a database. This will provide all the above mentioned functionality.

2.)

	tagnum integer	packid character(5)	installdate date	cost numeric(5,2)
1	32808	AC01	1995-09-13	754.95
2	32808	DB32	1995-12-03	380.00
3	37691	DB32	1995-06-15	380.00
4	57772	DB33	1995-05-27	412.77
5	32808	WP08	1996-01-12	185.00
6	37691	WP08	1995-06-15	227.50
7	57222	WP08	1995-05-27	170.24
8	59836	WP09	1995-10-30	35.00
9	77740	WP09	1995-05-27	35.00

3.) The primary key is a composite key of "TagNum" and "PackID" (TagNum, PackID).

Part 2

4.)

	tagnum integer	packid charact	installdate date	cost numeric	packagename text	computermodel text
1	32808	AC01	1995-09-13	754.95	Microsoft Visual Studio 2012	HP
2	32808	DB32	1995-12-03	380.00	Adobe Photoshop	HP
3	37691	DB32	1995-06-15	380.00	Adobe Photoshop	DELL
4	57772	DB33	1995-05-27	412.77	Maya	APPLE
5	37691	WP08	1995-06-15	227.50	Microsoft Office 2012	DELL
6	32808	WP08	1996-01-12	185.00	Microsoft Office 2012	HP
7	57222	WP08	1995-05-27	170.24	Microsoft Office 2012	GATEWAY
8	59836	WP09	1995-10-30	35.00	AutoCAD	COMPAQ
9	77740	WP09	1995-05-27	35.00	AutoCAD	ACER

- 5.) TagNum -> ComputerModel
 PackID -> PackageName
 PackageName -> PackID
 TagNum, PackID -> * The set and all subsets of
 { Install Date, Cost, PackageName, ComputerModel }

6.) This table is not in NF3, as it violates NF2. This is due to a violation of a non-prime attribute being dependent on just part of the candidate key for this table. These non-prime attributes are ComputerModel (dependent on TagNum), and PackageName (dependent on PackID). Both TagNum and PackageName are subsets of the candidate key, violating NF2.

Part 3

7.) Table 'software_packages' primary key is 'PackID'. Table 'assets' primary key is 'TagNum'. Table 'installations' primary key is a composite key, (TagNum, PackID).

8.) 'software_packages' :
 Packid -> Name
 Name -> PackID

'assets' :
 TagNum -> ComputerModel

'installations' :
 TagNum, PackID -> * The set and all subsets of { Install Date, Cost }

9.) First, the tables are now in NF2. Second, there only transient dependencies where (A->B and B->A). There are no transient dependencies in the form A->B and B->C so A->C, where A != C.

10.)

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Entity Relationship Diagram



