

Andrew Lohr

## Lab 7

1. The spreadsheet is nice, but to me it seems the software cost need some more clarification as to what currency was used to purchase the software. Also each intersection of row and column is not one atomic piece of data. We can fix this for you!

2.

TagNum	PackID	SoftwareCostUSD	InstallDate
32808	AC01	754.95	9-13-1995
32808	DB32	380.00	12-03-1995
32808	WP08	185.00	1-12-1996
37691	DB32	380.00	6-15-1995
37691	WP08	227.50	6-15-1995
57772	DB33	412.77	5-27-1995
57222	WP08	170.24	5-27-1995
59836	WP09	35.00	10-30-1995
77740	WP09	35.00	5-27-1995

3. Primary Key will be the TagNum and PackID.

4.

TagNum	PackID	SoftwareCostUSD	InstallDate	SoftwarePackageName	CompModel
32808	AC01	754.95	9-13-1995	Shiek	Hp
32808	DB32	380.00	12-03-1995	Zora	Hp
32808	WP08	185.00	1-12-1996	Goron	Hp
37691	DB32	380.00	6-15-1995	Zora	Lenovo
37691	WP08	227.50	6-15-1995	Goron	Lenovo
57772	DB33	412.77	5-27-1995	Hyrule	Apple
57222	WP08	170.24	5-27-1995	Goron	Apple
59836	WP09	35.00	10-30-1995	Gerudu	Toshiba
77740	WP09	35.00	5-27-1995	Gerudu	Dell

5. Functional Dependencies

- a. PackID → SoftwarePackageName
- b. TagNum → CompModel

6. Because it does not satisfy second normal form. A non-key attribute softwarePackageName is only dependent on PackID, which is only part of the primary key.

7.

Computers	
ComputerID	TagNum
1	32808
2	37691
3	57772
4	59836
5	77740
6	57222

Software	
SoftwareID	PackID
1	AC01
2	DB32
3	DB33
4	WP08
5	WP09

Computer Software Packages				
CompSoftwareID	ComputerID	SoftwareID	InstallDate	SoftwareCostUSD
1	1	1	9-13-1995	754.95
2	1	2	12-03-1995	380.00
3	1	4	1-12-1996	185.00
4	2	2	6-15-1995	380.00
5	2	4	6-15-1995	227.50
6	3	3	5-27-1995	412.77
7	4	5	10-30-1995	35.00
8	5	5	5-27-1995	35.00
9	6	4	5-27-1995	170.24

Primary Keys are ComputerID, SoftwareID, and CompSoftwareID

8. Functional dependencies

- a. ComputerID → TagNum
- b. SoftwareID → PackID
- c. CompSoftwareID → computerID, SoftwareID, InstallDate, SoftwareCostUSD

9. IT is in 3<sup>rd</sup> NF because the tables are in 1<sup>st</sup> NF (Contains only atomic values, and there are no repeating groups) and 2<sup>nd</sup> NF (All non-key attributes are fully functional dependent on the primary key), and each column is fully dependent on the primary key in each table.

E/R model

