

## Normalization Lab 1

### Part 1

- 1.) Thank him for collecting the data, and then inform him that you will need to modify the table a few times to avoid redundancies and other issues with aggregated data.
- 2.) 1NF

PackID	TagNum	Month	Day	Year	SoftwareCost
AC01	32808	Sep	13	1995	754.95
DB32	32808	Dec	3	1995	380.00
DB32	37691	Jun	15	1995	380.00
DB33	57772	May	27	1995	412.77
WP08	32808	Jan	13	1996	185.00
WP08	37691	Jun	15	1995	227.50
WP08	57222	May	27	1995	170.24
WP09	59836	Oct	30	1995	35.00
WP09	77740	May	27	1995	35.00

- 3.) The Primary Key is PackID, TagNum

### Part 2

- 4.)

PackID	SoftName	TagNum	CompModel	Month	Day	Year	SoftwareCost
AC01	Skyrim	32808	Lenovo	Sep	13	1995	754.95
DB32	Half Life	32808	Lenovo	Dec	3	1995	380.00
DB32	Half Life	37691	HP	Jun	15	1995	380.00
DB33	Counter Strike	57772	Dell	May	27	1995	412.77
WP08	Portal	32808	Lenovo	Jan	13	1996	185.00
WP08	Portal	37691	HP	Jun	15	1995	227.50
WP08	Portal	57222	Acer	May	27	1995	170.24
WP09	Zork	59836	Toshiba	Oct	30	1995	35.00
WP09	Zork	77740	Apple	May	27	1995	35.00

5.) PackID → SoftName

TagNum → CompModel

PackID, TagNum → SoftwareCost, Month, Day, Year

6.) This table is not in third normal form because SoftName is only dependent on PackID, which is a partial key dependency. This partial key dependency is a violation of second normal form and, as a consequence, third normal form.

### **Part 3**

7.)

Software	
PackID	SoftName
AC01	Skyrim
DB32	Half Life
DB32	Half Life
DB33	Counter Strike
WP08	Portal
WP08	Portal
WP08	Portal
WP09	Zork
WP09	Zork

Computer	
TagNum	CompModel
32808	Lenovo
32808	Lenovo
37691	HP
57772	Dell
32808	Lenovo
37691	HP
57222	Acer
59836	Toshiba
77740	Apple

Install					
PackID	TagNum	Month	Day	Year	SoftwareCost
AC01	32808	Sep	13	1995	754.95
DB32	32808	Dec	3	1995	380.00
DB32	37691	Jun	15	1995	380.00
DB33	57772	May	27	1995	412.77
WP08	32808	Jan	13	1996	185.00
WP08	37691	Jun	15	1995	227.50
WP08	57222	May	27	1995	170.24
WP09	59836	Oct	30	1995	35.00
WP09	77740	May	27	1995	35.00

Primary Key for Software Table: PackID

Primary Key for Computer Table: TagNum

Primary Key for Install Table: PackID, TagNum

8.) Software table:  
PackID → SoftName

Computer table:  
TagNum → CompModel

Install table:  
Pack ID, TagNum → Month, Day, Year, SoftwareCost

9.) The tables are now in third normal form because there are no longer any partial key dependencies and the non-key attributes are not dependent on any other non-key attributes.

10.)

