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Database Design

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Part 1:

   1.The table you have provided me is very useful, however I'm going to have to alter it slightly to make it fit the guidelines of a functional relational database. This will make sure your data stays intact and safe, keeping it both reliable and organized. Also, for future's sake, what currency does your company mainly deal with? It would be easier to design a database knowing the currencies used.

2.

PackID	TagNum	InstallDate	SoftwareCost
AC01	32808	09-13-1995	754.95
DB32	32808	12-03-1995	380.00
DB32	37691	06-15-1995	380.00
DB33	57772	05-27-1995	412.77
WP08	32808	01-12-1996	185.00
WP08	37691	06-15-1995	227.50
WP08	57222	05-27-1995	170.24
WP08	59836	10-30-1995	35.00
WP09	77740	05-27-1995	35.00

3. The primary key is the combination of PackID and TagNum.

Part 2.

4.

PackID	TagNum	InstallDate	SoftwareCost	SoftwarePkg Name	CmptModel
AC01	32808	09-13-1995	754.95	Zork	Apple
DB32	32808	12-03-1995	380.00	Portal	HP
DB32	37691	06-15-1995	380.00	Portal	Dell
DB33	57772	05-27-1995	412.77	Wireshark	HP
WP08	32808	01-12-1996	185.00	MS_Office	Dell
WP08	37691	06-15-1995	227.50	MS_Office	Lenovo
WP08	57222	05-27-1995	170.24	MS_Office	Acer
WP08	59836	10-30-1995	35.00	MS_Office	Dell
WP09	77740	05-27-1995	35.00	Netlimiter	HP

5. Functional dependences are as follows:

PackID -> SoftwarePkgName

TagNum -> CmptModel

PackID,TagNum -> InstallDate, SoftwareCost

6. This is not 3NF because there are multiple key dependencies. SoftwarePkgName is only dependent on PackID and TagNum is only dependent on CmptModel. Both of these atributes would need to be dependent on both PackID and TagNum.

Part 3

Software_Pkgs (PK = PackID,   PackId ->SoftwarePkgName

PackID	SoftwarePkgName
AC01	Zork
DB32	Portal
DB32	Portal
DB33	Wireshark
WP08	MS_Office
WP08	MS_Office
WP08	MS_Office
WP08	MS_Office
WP09	Netlimiter

Computers (PK = TagNum,   TagNum ->CmptModel

TagNum	CmptModel
32808	Apple
32808	HP
37691	Dell
57772	HP
32808	Dell
37691	Lenovo
57222	Acer
59836	Dell
77740	HP

Installations (PK = PackId,TagNum,   PackId,TagNum->InstallDate,SoftwareCost

PackID	TagNum	InstallDate	SoftwareCost
AC01	32808	09-13-1995	754.95
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WP08	59836	10-30-1995	35.00
WP09	77740	05-27-1995	35.00

The tables are in 3NF because the attributes in each table depend only on the primary keys of their respective tables.