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Normalization 1

Part One:

1.) The table is good, however there are two problems. The primary key is a composite key. In addition the data can be reorganized in a better way so that anyone can understand it.

2.)

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	57772	05-27-2005	170.24
WP09	59836	10-30-2005	35.00
WP09	77740	05-27-2005	35.00

3.) The primary key for this table is PackageID and TagNumber. It is both PackageID and TagNumber because only together will the composite key uniquely identify an entity occurrence.

Part Two:

1.)

PackageID	TagNumber	InstallationDate	SoftwareCostUSD	SoftwarePackageName	ComputerModel
AC01	32808	09-13-2005	754.95	TeamViewer	Apple
DB32	32808	12-03-2005	380.00	Portal	Apple
DB32	37691	06-15-2005	380.00	Portal	Lenovo
DB33	57772	05-27-2005	412.77	Microsoft Office	HP
WP08	32808	01-12-2006	185.00	Zork	Apple
WP08	37691	06-15-2005	227.50	Zork	Lenovo
WP08	57772	05-27-2005	170.24	Zork	Gateway
WP09	59836	10-30-2005	35.00	Spotify	Acer
WP09	77740	05-27-2005	35.00	Spotify	Dell

2.) PackageID, TagNumber -> InstallDate, SoftwareCostUSD
   TagNumber -> ComputerModel
   PackageID -> SoftwarePackageName

3.) This table is not in third normal form because there are multiple key dependencies. One example is that ComputerModel depends on TagNumber. Another example is that SoftwarePackageName is dependent on PackageID.

Part Three:

1.) Primary Key for Software is PackageID
   Primary Key for Computers is TagNumber
   Primary Key for Installation is a composite key of PackageID and TagNumber

2.) Software: SoftwarePackageID is dependent on PackageID
   Computers: ComputerModel is dependent on TagNumber
   Installation: IntallDate and SoftwareCostUSD is dependent on PackageID and TagNumber

3.) The three new tables are in third normal form because the columns depend on the primary key of the respective table.

4.)

Software:

PackageID	SoftwarePackageName
AC01	TeamViewer
DB32	Portal
DB32	Portal
DB33	Microsoft Office
WP08	Zork
WP08	Zork
WP08	Zork
WP09	Spotify
WP09	Spotify

Installation:

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	57772	05-27-2005	170.24
WP09	59836	10-30-2005	35.00
WP09	77740	05-27-2005	35.00

Computers:

TagNumber	ComputerModel
32808	Apple
32808	Apple
37691	Lenovo
57772	HP
32808	Apple
37691	Lenovo
57222	Gateway
59836	Acer
77740	Dell