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 Database Management
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Lab 7: Normalization

1a) As a response: The spreadsheet has the right details and it is on the right track. However, there are a couple of improvements that can be made on the spreadsheet.

1b)

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	57222	05-27-2005	170.24
WP09	59536	10-30-2005	35.00
WP09	77740	05-27-2005	35.00

1c) The primary key is (PackageID, TagNumber)

2a)

PackageID	Software PackageName	Computer Model	TagNumber	InstallDate	Software Cost USD
AC01	Zork	IBM	32808	09-13-2005	754.95
DB32	Portal	Apple	32808	12-03-2005	380.00
DB32	Portal	Apple	37691	06-15-2005	380.00
DB33	Java	HP	57772	05-27-2005	412.77

WP08	JavaScript	Lenovo	32808	01-12-2006	185.00
WP08	JavaScript	Lenovo	37691	06-15-2005	227.50
WP08	JavaScript	Lenovo	57222	05-27-2005	170.24
WP09	C	Asus	59536	10-30-2005	35.00
WP09	C	Asus	77740	05-27-2005	35.00

2b)

(PackageID, TagNumber) → SoftwarePackageName, Computer Model, InstallDate, SoftwareCostUSD

Package ID → SoftwarePackageName

2c) The table is not in third normal form because the table is not in second normal form. The table has a couple of partial key dependencies. In order for the table to be in third normal form it has to meet the previous requirements from the normal forms prior to it.

3)

PackageID	ComputerModel	TagNumber	InstallDate	SoftwareCostUSD
AC01	IBM	32808	09-13-2005	754.95
DB32	Apple	32808	12-03-2005	380.00
DB32	Apple	37691	06-15-2005	380.00
DB33	HP	57772	05-27-2005	412.77
WP08	Lenovo	32808	01-12-2006	185.00
WP08	Lenovo	37691	06-15-2005	227.50
WP08	Lenovo	57222	05-27-2005	170.24
WP09	Asus	59536	10-30-2005	35.00
WP09	Asus	77740	05-27-2005	35.00

PackageId	PackageName
AC01	Zork
DB32	Portal
DB33	Java
WP08	JavaScript
WP09	C

3a) First Table Primary Key: (PackageID, TagNumber)

Second Table Primary Key: PackageID

3b)

First Table Dependencies:

(PackageID, TagNumber) → ComputerModel, InstallDate, SoftwareCostUSD

Second Table Dependencies:

PackageID → SoftwarePackageName

3c) The new tables are in third normal form because they have met the requirements of being in second normal form; they have no partial key dependencies, and the primary key in both tables are the candidate key.

3d)

