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Assignment: Normalization_1

Part I

I would reply by saying that this spreadsheet looks good, but it can look better if given the opportunity to improve it.

Installed_packages
PackageID
TagNumber
InstallDate
SoftwareCostUSD
Primary key (packageID, TagNumber)

Part II

Packages_Delivered					
Package_ID	Package_Name	Tag_Number	Computer_Name	Install_Date	Software_Cost_USD
AC01	Eclipse	32808	Acer	2005-09-13	754.95
DB32	Zork	32808	Acer	2005-12-13	380
DB32	Zork	37691	Apple	2005-06-15	380
DB33	Portal	57772	HP	2005-05-27	412.77
WP08	Stars	32808	Acer	2006-01-12	185
WP08	Stars	37691	Apple	2005-06-15	227.5
WP08	Stars	57222	IBM	2005-05-27	170.24
WP09	Linear	59836	Sony	2005-10-30	35
WP09	Linear	77740	Microsoft	2005-05-27	35

Functional Dependencies:

Packages_Delivered: (Package_ID, Tag_Number) → Package_Name, Computer_Name, Install_Date, Software_Cost_USD

Packages_Delivered: (Tag_Number, Package_ID) → Computer_Name, Package_Name, Install_Date, Software_Cost_USD

This table is not in third normal form because there are partial dependencies of attributes depending on all primary key. This table has a composite Primary key [Package_ID, Tag_Number]. However the non-key attributes Package_Name only depends on Package_ID which is a partial primary key, and Computer_Name only depends on Tag_Number which is again a partial primary key.

Part III

Primary Key

Packages: Package_ID

Computers: Tag_Number

Functional Dependencies

Packages: (Package_ID) → Package_Name

Computers: (Tag_Number) → Computer_Name

These new tables are in third normal form because we have eliminated partial dependencies on non-key attributes. There is also no transitive dependency and all attributes are dependent on the key, the whole key, and nothing but the key.

