Jonathan Pistilli
Normalization Homework #1

Part One

1. You let him know that you think the spreadsheet looks really well put together,
however, you can make accessing, collecting, and creating data and information
much easier and more efficient through a database system.

2.

OrderNo	PackageID	TagNumber	InstallDate	SoftwareCostUSD
1	AC01	32808	09-13-2005	754.95
2	DB32	32808	12-03-2005	380.00
3	DB32	37691	06-15-2005	380.00
4	DB33	57772	05-27-2005	412.77
5	WP08	32808	01-12-2006	185.00
6	WP08	37691	06-15-2005	227.50
7	WP08	57222	05-27-2005	170.24
8	WP09	59836	10-30-2005	35.00
9	WP09	77740	05-27-2005	35.00

3. The primary key is OrderNo, which had to be created to provide a unique value
for each row

Part Two

1.

SoftwarePackageName	CompModel	OrderNo	PackageID	TagNumber	InstallDate	SoftwareCostUSD
Rush	Apple	1	AC01	32808	09-13-2005	754.95
Origins	Apple	2	DB32	32808	12-03-2005	380.00
Origins	Dell	3	DB32	37691	06-15-2005	380.00
Westeros	Lenovo	4	DB33	57772	05-27-2005	412.77
Agartha	HP	5	WP08	32808	01-12-2006	185.00
Agartha	Dell	6	WP08	37691	06-15-2005	227.50
Agartha	Lenovo	7	WP08	57222	05-27-2005	170.24
Maxis	Asus	8	WP09	59836	10-30-2005	35.00
Maxis	Acer	9	WP09	77740	05-27-2005	35.00

2. Functional Dependencies

TagNumber → CompModel
PackageID → SoftwarePackageName
OrderNo → InstallDate
OrderNo, SoftwarePackageName, CompModel, InstallDate → SoftwareCostUSD

3. This table is not in third normal form because not all column values are dependent upon the primary key.

Part Three

1.

software_products

PackageID	SoftwarePackageName
AC01	Rush
DB32	Origins
DB33	Westeros
WP08	Agartha
WP09	Maxis

computers

TagNumber	CompModel
32808	Apple
37691	Dell
57772	Lenovo
32808	HP
59836	Asus
77740	Acer

orders

OrderNo	PackageID	TagNumber	InstallDate	SoftwareCostUSD
1	AC01	32808	09-13-2005	754.95
2	DB32	32808	12-03-2005	380.00
3	DB32	37691	06-15-2005	380.00
4	DB33	57772	05-27-2005	412.77
5	WP08	32808	01-12-2006	185.00
6	WP08	37691	06-15-2005	227.50
7	WP08	57222	05-27-2005	170.24
8	WP09	59836	10-30-2005	35.00
9	WP09	77740	05-27-2005	35.00

1. Primary Keys

PackageID is the primary key for *software_products*.
TagNumber is the primary key for *computers.*
OrderNo is the primary key for *orders.*

2. Functional Dependencies

- *software_products*
  PackageID → SoftwarePackageName

- *computers*
  TagNumber → CompModel

- *orders*
  OrderNo → InstallDate
  OrderNo, PackageID, TagNumber, InstallDate → SoftwareCostUSD

3. These tables are in third normal form because everything in each table is fully dependent upon the primary key. Also, from the requirements of second normal form, the tables make use of foreign keys to show relationships between tables. From the requirements for first normal form, each table has a primary key and no duplicative columns.

4. ER Diagram