Ryan Fredericks

Data Management

Normalization 1

Part One

1. I would explain to him that while the data listed is fine, it is not organized in the optimal way and can cause redundancies and duplicate data if not handled correctly.
2. (Below)

Output pane

Data Output | Explain | Messages | History

	packageid character(5)	tagnumber integer	installdate date	softwarecostusd numeric(5,2)
1	AC01	32808	2005-09-13	754.95
2	DB32	32808	2005-12-03	380.00
3	DB32	37691	2005-06-15	380.00
4	DB33	57772	2005-12-03	412.77
5	WP08	32808	2006-01-12	185.00
6	WP08	37691	2005-06-15	227.50
7	WP08	57222	2005-05-27	170.24
8	WP09	59836	2005-10-30	35.00
9	WP09	77740	2005-05-27	35.00

3. The primary key is packageID + tagNumber

Part Two

4. Output pane

Data Output | Explain | Messages | History

	packageid character(5)	tagnumber integer	installdate date	softwarecostusd numeric(5,2)	softwarepackage text	computermodel text
1	AC01	32808	2005-09-13	754.95	RACF	HP
2	DB32	32808	2005-12-03	380.00	MS Office	HP
3	DB32	37691	2005-06-15	380.00	MS Office	Apple
4	DB33	57772	2005-12-03	412.77	Portal	IBM
5	WP08	32808	2006-01-12	185.00	Zone	HP
6	WP08	37691	2005-06-15	227.50	Zone	Apple
7	WP08	57222	2005-05-27	170.24	Zone	IBM
8	WP09	59836	2005-10-30	35.00	Linux	IBM
9	WP09	77740	2005-05-27	35.00	Linux	Apple

5. packageID -> softwarePackage

tagNumber -> computerModel

{tagNumber, packageID} -> {softwareCostUSD, installDate}

6. It is not in the third normal form because all the data does not depend on the primary key.

Part Three

7.
    a. Packages -> Primary Key is packageID
    b. Computers -> Primary Key is tagNumber
    c. Installations -> Primary Key is packageID + tagNumber
8.
    a. Packages
        i. packageID -> softwarePackage
    b. Computers
        i. tagNumber -> computerModel
    c. Installations
        i. {packageID, tagNumber} -> {installDate, costUSD}
9. It is in the third normal form because the data in each of the tables depend on the primary key of that table, making sure that the functional dependencies all work correctly.
10. (below)