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Database Systems Lab 7 – Normalization One

***Part One***

1. The spreadsheet shown has pretty column names however, there are some under the tag number that have two values which goes against the First Normal Form rule, as well some tag numbers being repeated which makes it unable to be the primary key.
2. Here is what a table fitting the first normal rule should look like:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PackageID | Ordno | TagNumber | InstallDate | SoftwareCostUSD |
| AC01 | AC01-32808 | 32808 | 09-13-2005 | 754.95 |
| DB32 | DB32-328080 | 32808 | 12-03-2005 | 380.00 |
| DB32A | DB32A-37691 | 37691 | 06-15-2005 | 380.00 |
| DB33 | DB33-5772 | 57772 | 05-27-2005 | 412.77 |
| WP08 | WP08-32808 | 32808 | 01-12-2006 | 185.00 |
| WP08A | WP08A-37691 | 37691 | 06-15-2005 | 227.50 |
| WP08B | WP08B-5722 | 57222 | 05-27-2005 | 170.24 |
| WP09 | WP09-59836 | 59836 | 10-30-2005 | 35.00 |
| WP09A | WP09A-7740 | 77740 | 05-27-2005 | 35.00 |

1. The primary key of this table would be Ordno which is combination of packageid and tag number.

***Part Two***

New Table with more columns.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PackageID | Ordno | TagNumber | InstallDate | SoftwareCostUSD | ComputerModel | PackageName |
| AC01 | AC01-32808 | 32808 | 09-13-2005 | 754.95 | Apple | Zork |
| DB32 | DB32-32808 | 32808 | 12-03-2005 | 380.00 | IBM | Portal |
| DB32A | DB32A-37691 | 37691 | 06-15-2005 | 380.00 | PC | CounterStrike |
| DB33 | DB33-5772 | 57772 | 05-27-2005 | 412.77 | IBM | PayDay |
| WP08 | WP08-32806 | 32808 | 01-12-2006 | 185.00 | Apple | Bond |
| WP08A | WP08A-37691 | 37691 | 06-15-2005 | 227.50 | PC | GoldFinger |
| WP08B | WP08B-5722 | 57222 | 05-27-2005 | 170.24 | Apple | GoldenGun |
| WP09 | WP09-59836 | 59836 | 10-30-2005 | 35.00 | IBM | GoldenEye |
| WP09A | WP09A-77740 | 77740 | 05-27-2005 | 35.00 | PC | Meow |

1. Above Table.
2. Dependences:
   1. packageID -> SoftwarePackageName
   2. TagNumber -> ComputerModel
   3. Ordno -> PackageID
   4. Ordno -> TagNumber
   5. Ordno -> InstallDate
   6. Ordno -> SoftwarePriceUSD
   7. Ordno -> SoftwarePackageName
   8. Ordno -> ComputerModel
3. This new table that I created is not in Third Normal Form because there are muitlple key dependcies which according to the text book should not happen in Third Normal Form.

***Part Three***

1. The primary key is Ordno.
2. All the tables have the following dependenicies:
   1. Ordno -> PackageId
   2. Ordno -> TagNumber
   3. Ordno -> InstallDate
   4. Ordno -> SoftwarePriceUSD

|  |  |
| --- | --- |
| ***TagNumber*** | ***ComputerModel*** |
| ***32808*** | ***Apple*** |
| ***37691*** | ***PC*** |
| ***57772*** | ***Apple*** |
| ***5772*** | ***IBM*** |
| ***59836*** | ***IBM*** |
| ***77740*** | ***PC*** |

|  |  |
| --- | --- |
| ***SoftwarePackageName*** | ***PackageID*** |
| ***Zork*** | ***AC01*** |
| ***Portal*** | ***DB32*** |
| ***CounterStrike*** | ***DB32A*** |
| ***PayDay*** | ***DB33*** |
| ***Bond*** | ***WP08*** |
| ***GoldenGun*** | ***WP08B*** |
| ***GoldenFinger*** | ***WP09*** |
| ***Meow*** | ***WP09A*** |

1. These tables are in Third Normal Form because there are no muitple key dependices. They all depend on one single key.
2. ER DIAGRAM IS ANOTHER FILE IN THIS REPO.