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CMPT 308 – Database Management

Lab 7

PART ONE:

- 1.) First of all, I'd like to say thank you Mr. Fred Johnson, for the concise data collection on your part. It is a great start to an idea of a database process. Yet we will have to do a bit of transitioning for the form provided to be a bit more database relational or normalized. For you managers, this form may suffice; I would like to process your info a bit more so that a DBMS can manage this for you and make it much more than merely sufficient! May I?
- 2.) 1NF: every attribute is at its greatest atomically valued state. Each attribute is apparent; whether null or otherwise, yet are appearing with some value, atomically!

PackageID	TagNumber	InstallDate	SoftwareCostUSD
AC01	32808	9/13/2005	754.95
DB32	32808	12/3/2005	380
DB32	37691	6/15/2005	380
DB33	57772	5/27/2005	412.77
WP08	32808	1/21/2006	185
WP08	37691	6/15/2005	227.5
WP08	57772	5/27/2005	170.24
WP09	59836	10/30/2005	35
WP09	77740	5/27/2005	35

- 3.) Primary key... PackageID has a repetition within it, so it can't be use on its own. Yet is an identifier, so it would work well as a primary with something else compositely. Lets devoid CostUSD as implausible and also InstallDate due to their nature of data they aren't very great Primary keys... A composite of PackageID and TagNumber would be a sturdy Primary Key! Caution: not sure how a software reload on would substantiate in this situation...

PART TWO:

4.)

PackageID	TagNumber	InstallDate	SoftwareCostUSD	SoftwarePackage	ComputerModel
AC01	32808	9/13/2005	754.95	Microsoft Windows 10	HP
DB32	32808	12/3/2005	380	BusinessLogic Suite	HP
DB32	37691	6/15/2005	380	BusinessLogic Suite	IBM ThinkPad
DB33	57772	5/27/2005	412.77	Oracle	Apple
WP08	32808	1/21/2006	185	BlackRidge System	HP
WP08	37691	6/15/2005	227.5	BlackRidge System	IBM ThinkPad
WP08	57772	5/27/2005	170.24	BlackRidge System	Apple
WP09	59836	10/30/2005	35	MS Office	Lenovo
WP09	77740	5/27/2005	35	MS Office	Asus

5.) PackageID is functionally dependent upon SoftwarePackage TagNumber is functionally dependent upon ComputerModel

PackageID and TagNumber are functionally dependent on both the InstallDate and the CostUSD

6.) Why isn't this table in 3rd Normal Form (3NF)?

For one, it is a lot of information all confound upon itself and ought to be broken upon into more tables than just one, to which will give us the ability to create relations and embark on a DBMS for TYCHO. Yet why, because there are many attributes in this table are multidependent, which is breaking 3NF. Multidependent keys such as PackageId and Tag Number have to be separated for conciseness... PART THREE:

Software Platforms

PackageID	SoftwarePackage
AC01	Microsoft Windows 10
DB32	BusinessLogic Suite
DB32	BusinessLogic Suite
DB33	Oracle
WP08	Blu Soft

WP08	ReadyRunner PDF
WP08	BlackRidge System
WP09	MS Office
WP09	MS Office

Computer Models

TagNumber	ComputerModel
32808	HP
32808	HP
37691	IBM ThinkPad
57772	Apple
32808	HP
37691	IBM ThinkPad
57772	Apple
59836	Lenovo
77740	Asus

Software Installs

PackageID	TagNumber	InstallDate	SoftwareCostUSD
AC01	32808	9/13/2005	754.95
DB32	32808	12/3/2005	380
DB32	37691	6/15/2005	380
DB33	57772	5/27/2005	412.77
WP08	32808	1/21/2006	185
WP08	37691	6/15/2005	227.5
WP08	57772	5/27/2005	170.24
WP09	59836	10/30/2005	35
WP09	77740	5/27/2005	35

7.) Primary keys for these three Entities: Software Platforms: PackageID

Computer Models: TagNumber

Software Installs: PackageID and TagNumber (composite)

8.) Functional dependencies for these three Entities:

Software Platforms: PackageID is functional dependent on Software Platform

Computer Models: TagNumber is functionally dependent on Computer Model

Software Installs: PackageID with TagNumber is Functionally dependent on both InstallDate and CostUSD.

9.) So, are they now 3NF, and if so why?

Yep, now up to 3NF! For one we have recused the cluster bust of all in one table, and we have also removed the multikey dependencies, so for all its greatness the tables are in Third Normal Form.

10.) E/R Diagram

