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Labouseur

### Normalization 3

(to be seen with Lab9ERDiagram.pdf)

1. This explains the functional dependencies of all the tables

People

PeopleID -> First Name and Last Name

FlightOperator (Sub-type of People)

PeopleID (People) -> First Name (People), Last Name (People), Chair, Age, Drink and Cure

Engineer (Subtype of People)

PeopleID (People) -> First Name (People), Last Name (People), Degree, Age, VideoGame

Astronauts (Subtype of People)

PeopleID (People) -> FirstName (People), Last Name (People), YearsFlying, Age, Handicap, Spouse

Crew (Links Astronauts and Spacecraft)

PeopleID (Astronaut), Tail Number (Space) -> LaunchDate

SpaceCraft

Tail Number -> Name, Weight, Fuel type, CrewCapacity

Installs (Links SpaceCraft and Systems)

Tail Number, SystemID -> Install Date

Systems

System ID -> Name, Description, CostUSD

Composed (Links Systems and Parts)

SystemID. PartID -> Order Date, Quantity

Parts

PartID -> Name, Description, CostUSD

Catalog (Links Parts and Suppliers)

Part ID, Supplier ID -> Supply Date

Suppliers

SupplierID -> Name, Address, Payment

How is this in 3<sup>rd</sup> Normal Form?

To be in the 3<sup>rd</sup> normal form, the database needs to achieve 1<sup>st</sup> and 2<sup>nd</sup> normal form first.

There are no areas where duplicate data entry could be input. Each table has a unique identifier consisting of one or two rows depending on the table. These two things allow for the database to be in the 1<sup>st</sup> normal form.

The only tables with more than one key column are Crew, Installs, Composed, and Catalog. The non-key attributes rely on both of the key attributes, giving the database 2<sup>nd</sup> normal form.

The third normal form requires that all columns of all table be dependent on the key. In each of the tables not mentioned above, this rule applies. (the reason for not mentioning the tables above is because those tables are already in the third normal form) This way, the database is in third normal form.