

Database Systems

CMPT 308

- Lab 9: Normalization 3 - 20 points

Goals	To further develop your facility with the art and science of normalization.
Scenario	<p>Design and document with a fully annotated ER diagram a relational database for NASA using the following data. You may create primary keys for strong entities.</p> <ul style="list-style-type: none">• Engineers: first name, last name, highest academic degree earned, age, favorite video game• Astronauts: first name, last name, years flying, age, golf handicap, spouse name• Flight Control Operators: first name, last name, chair preference, age, preferred drink, recommended hangover cure• Spacecraft: name, tail number, weight in tons, fuel type, crew capacity• Crew: who (which astronauts) flew on what spacecraft• Systems: name, description, costUSD (a spacecraft has many systems)• Parts: name, description, costUSD (a system has many parts)• Suppliers: name, address, payment terms (suppliers supply parts for systems for spacecraft)• Catalog: who supplies what parts
Deliverables	<ol style="list-style-type: none">1. Identify and document all functional dependencies.2. Draw a fully annotated E/R diagram using LucidChart that illustrates the Platonic ideal of beautiful and correct relational database design.3. Convince me that your database is in 3NF (or even better, in Boyce-Codd Normal Form).
Hint	Use entity subtypes wherever possible.
Resources	<ul style="list-style-type: none">• Chapters 3 and 4.1 and 4.6 in our text, especially 4.1.11 and 4.6• Stack Overflow - http://stackoverflow.com/questions/tagged/normalization• Microsoft on Normalization - http://support.microsoft.com/kb/283878
Submitting	Submit your ER diagram and documentations as a PDF. Push them to your GitHub repository before the due date (see syllabus). Remember to include your name and date. Neatness counts.

