Homework 3
Due Wednesday 23 April 7 pm to hwsubmit

The first problem is based on the material from Monday's discussion.

Problems 2 - 4 are from the text. Elmasri & Natathe, Fundamentals of Database Systems, 5th edition.

1. Specify the following queries in relational algebra, based on the database from Monday's discussion. Here's a link to the handout with the database schema on it:
   http://www.classes.cs.uchicago.edu/archive/2008/spring/23500-1/discussion/CMSC23500_SPR08_Discussion-3.pdf

   (a) Select the name of each employee, along with the name of each planet that employee has clearance on, including employees with no clearance.

   (b) Select the contents of all packages in pending shipments (a shipment is pending if its date is set to NULL)

   (c) Select the names of the recipients of packages in pending shipments.

   (d) Select the shipment code and package number of packages delivered by employees having a clearance greater than or equal to 3 on any planet.

   (e) Select the names of employees that have supervised a shipment to a planet where they do not have any clearance on.

2. Exercise 6.18 page 215 - 216 (note part g is on page 216). See section 6.4.2 for aggregate functions.

3. Exercise 6.26 page 218.

4. Exercise 6.30 a, c (the book uses ∗ for natural join), e and g, page 218.