Database Concepts – Assignment 2
Put the solutions to the following tasks into a single MS Word document (MM_Surname_FirstInitial_Ass2) and email not later than 5pm Sunday Dec 1st 2013.

1. Data Modelling [50 Marks]

A database is to be designed for a Mail Order Catalogue system.

The information system should allow information about available products, registered customers, orders placed by customers and payments received from customers. In addition, the system maintains information about the sales representatives appointed to oversee customer accounts.

The following business rules must be implemented:

- The system must distinguish between orders which have been received and orders which have been dispatched.
- The system must be able to identify all orders ever placed by a customer
- The system must be able to determine how many of a given product are currently in stock.
- The system must be able to identify all customers with an outstanding balance
- A customer may not place orders if they have a balance which is outstanding for more than 30 days.
- The system must distinguish between stock which is currently available and stock which is no longer available
- The system must distinguish between current customers and customers which have closed their account
- The system must be able to issue a statement of account (ie. Orders placed and payments received) to customers each month
- A sales representative oversees at most 30 customer accounts.

Draw an Object model diagram (Class, attributes) that captures these data requirements.
If you think there is ambiguity in the requirements, make your assumptions and state them clearly.

2. Relational Schema [25 Marks]

Transform the diagram drawn in part 1 into a ***relational schema***.
Use bracket notation to represent the relations.
Ensure that all relations in the schema are in 3NF.

3. Database Schema [25 Marks]

Write a database schema to represent the normalised relations.
Ensure that *appropriate* data types and sizes are defined.
Specify Primary Key and Foreign Key constraints where required.
Include any other constraints which you feel are required to ensure data consistency.