# Assignment requirements

**Prescription Contest Management System**

This case study is relatively straightforward, and hence can be tackled by most beginning modelers fairly effortlessly.

**Background**

An university wishes for us to design and develop an automated Contest Management System (CMS). The requirements are as follows:

The system is to keep track of the following information for each order, customers and list of items are bought by customers.

1) Information of a Contestant (thí sinh)

1. Contestant name as a string
2. Contestant id as a string
3. Contestant email as a string
4. Contestant mobilephone as a string
5. Contestant rank as a non-negative integer

2) Information of a problem (đề bài)

1. Problem id as a string
2. Date created as a string
3. Problem name as a string
4. Short description as a string
5. Link to full description as a string
6. Mark weight (trọng số điểm của bài) as a double
7. Category (thể loại bài: giả sử có 5 loại: toán giải tích | toán hình | tham lam | quy hoạch động | đồ thị)
8. Author as a string

The system is required to support the following queries:

1. Login system for Contestant (information of contestants stored in constestants.dat)
2. Change profile information of Contestant include change password.
3. Add a new problem to the Question Bank (QB) (information of problems stored in QBs.dat)
4. Update full information for a particular problem by Problem ID
5. A list of all available problems in the QB
6. Generate a new Contest (sinh ra một đề gồm 5 câu, lấy ngẫu nhiên 5 problems thuộc 5 chủng loại nêu trên: toán giải tích | toán hình | tham lam | quy hoạch động | đồ thị) => write to Contest\_TimeStamp.txt với đầy đủ thông tin về mã đề, ngày tạo đề, người tạo đề (theo login info), các câu hỏi trong đề, trọng số điểm từng câu, và tổng điểm của 5 câu.
7. Print information of a Contest by ContestID (mã đề)
8. Sort all problems by Category as ascending order
9. Save, load, and export information functions from QBs.dat file or other specific files. When system start running, load default QBs.dat file into memory to use.

Important to note:

* Problem ID, Contest ID and Contestant ID should be generated by system
* Validate all entered data, make sure that a string value cannot be null or empty, a number value must be correctly format.