COMP231 Project Part 1
Spring 2009

__Due date: 23 March 2009, Monday, 5:00pm__

- Students can work individually or in a group of two members. If you cannot find a project partner, please work individually. Do not ask the TAs to find a project partner for you.
- Students in different lab sections and lecture sections are allowed to form groups.

Project Specification

We want to create a database for a telecommunication company that provides Broadband (BB) and Home Telephone (HT) services offered through service plans. For each service plan, we need to keep the plan code, name, service type (BB or HT), description (detailed information about the service), contract period and monthly fee.

The followings are some examples of the service plans. BB stands for Broadband and HT for Home Telephone.

Plan code	Name	Service Type	Description	Contract period	Monthly Fee
0005	Broadband 10Mb plan	BB	- Transmission speed ~=10Mbps. - 1GB email box	18 months	$150
0007	Broadband 100Mb plan	BB	- Transmission speed ~=100Mbps. - 1GB email box	18 months	$290
0019	Home Tel service basic plan	HT	Basic service plan - no telephone set rental	24 months	$60
…	…	…	…	…	…

- For each customer, we create a record with his/her HKID, full name, contact phone number, billing address, payment method.
- A customer subscribes to at least a service plan.
- A subscription has a subscription ID, activation date and installation address and belongs to a single customer. Each subscription is either a BB plan or HT plan subscription, but not both. A BB plan subscription has additional email and password attributes. A HT plan subscription has additional phone number attribute.
- Every customer must select one payment method for all his subscriptions – cash or auto-pay using credit card. If the customer uses auto-pay, his/her credit card information (i.e., card number, owner name, expiry date) must be stored.

Tasks

1. You need to create an ER diagram for the above description (20%). Please make your own reasonable assumptions (if any) and state them clearly.

2. Convert your ER diagram to tables and create appropriate constraints/triggers (80%) capturing the following additional knowledge:

   i. Each customer can subscribe to at least one service plan and to a maximum of three service plans.

   ii. An installation address can be referred to by only one BB plan subscription.

   iii. A phone number can be referred to by only one HT plan subscription, but a customer can subscribe more than one phone line with different phone number at a single service installation address.

   iv. A customer can select his/her own login ID and password for email access, but the login ID must be unique even if the customer subscribes multiple Broadband service plans.

Submission

1. ER diagram – Hard copy, to the collection rack at 4th floor outside room 4213A. No late assignment will be accepted.

2. SQL file – Soft copy, to CASS at https://course.cs.ust.hk/cass/submit.html. The soft copy submission includes the following three SQL files with the specified file name and content:
   i. create.sql – all table creation statements are put in this file
   ii. triggers.sql – all trigger creation statements are put in this file
   iii. drop.sql – all table and trigger dropping statements are put in this file.

Note

Put the names and lab sections of your group members in both the hard copy and soft copy submissions. We will need this information for grading demos.