

DATABASE SYSTEMS

Assignment 1: ER Modeling

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tl;dr

- **‘Delivery Hanyang’ App developing scenario**
 - This app (or service) links merchants (seller), customers, and delivery personnel.
 - You are going to build database structure for the app.
- **TODO**
 - Drawing ER Model (Logical Model, Physical Model)
 - Writing a document for your ER Model
 - Submit file: Modeling file, Model captured image file, and Description document in **ONE .zip file** named *NAME_ID_DB01.zip* (e.g. Jones_2018123456_DB01.zip)
- **Submission deadline**
 - Due to Oct. 12th
 - Additional submission: Oct. 14th
 - Additional submission penalty: 50%
 - Overdue penalty: 100%

App scenario

- Every sellers has their own store and offers several services (like food, dishes, laundry service, etc.).
- The customer can search the services via **Delivery Hanyang** app (or service).
- Once the customer makes up their mind, the order created with their payment method and the service are being delivered their shipping address.
- The delivery personnel (the deliveryman) ships the service to the destination on the invoice.

Seller (1)

- *Seller* Has:
 - Shop name, location, address, and type of business.
 - location: (latitude, longitude)
 - address: Korean postal address
 - Many phone numbers.
 - One shop owner.
 - Many services.
 - A business day and hours
 - A store opening date.
- *Seller* can be:
 - Searched by customers with name and address (in si-gun-gu class)
 - Searched by customers as “nearby stores”
- *Seller* must be distinguished each other
 - Store name, location, and address can be the same.

Seller (2)

- *Service of Seller* has:
 - Name and price
 - The additional information such as discount rate.
 - Tags that can be search by customers.
- *Service:*
 - must be distinguished.
 - cannot be exist with the wrong seller.

Seller (3)

- *Shop owner:*
 - Has a information to login
 - ID, email, password
 - ID and email cannot be duplicated.
 - Can have many shops.

Customer

- *Customer* has:
 - Information to login
 - ID, email, password
 - ID and email cannot be duplicated.
 - A phone number.
 - Many payment method
 - Type of method: Credit card, bank account, gift card credit
 - Many shipping address 다수의 배송지를 가지고 있다.
 - Name, address, favorite (Y/N)

Deliveryman

- *Deliveryman* has:
 - Information to login
 - ID, email, password
 - ID and email cannot be duplicated.
 - Many phone number
 - Current Position
 - latitude, longitude, timestamp
 - Business location
 - As Korean postal address
 - Availability
 - The number of left delivery
 - Fees.

Order

- What kind of data would be needed when customer make an order? Create your own *order* detail.
- The order detail may contain:
 - Who ordered? Where? What service? How many of the service?
 - *payment method*
 - *Shipping address*
 - *Shipping date and time**
 - *Timestamp*
 - *Deliveryman*
 - ...and more about your app needs!

* Determining shipping date is NOT calculated on ER Model! It just store the data.

Read more...

- You can draw Logical model and transform it to physical model with ERwin. However, that physical model may need to be handled more.
- Use datatypes from postgresql. It relieves some annoying processes when you are coding application layer.
 - <https://www.postgresql.org/docs/current/static/datatype.html>
 - DATE datatypes
 - <https://www.postgresql.org/docs/current/static/datatype-datetime.html>
- The *point* of Postgresql can be used for Location data, but you don't have to. Making two attributes or columns of lat, lng is quite practical in many existing apps.
 - <https://www.postgresql.org/docs/current/static/datatype-geometric.html>