INFO90002 Week 2 Tutorial Solution

Week 2 Lab

Objectives:

- Conduct a Verb Noun Analysis (10 min)
- Review a case study (20 min)
  - identify entities and attributes
  - identify the participation & cardinality between entities
- Draw a Conceptual model of the case study (10 min)
- Set up & install your MySQL account on the Engineering IT server (10)

Section 1. Investment Bank Verb/Noun Analysis

Verb Noun Analysis

An investment bank has a number of branches. Within each branch a number of departments operate and are structured in a hierarchical manner. The bank employs around 3000 staff who are assigned to work in the various departments across the branches. There are essentially three types of special employees where extra details required by the system. There are dealers who carry out investments who have limits imposed upon them for how much they can spend. There are IT compliance managers who's Basel2 role is required to be stored and there are HR managers that need have their assessment number recorded (along with other details not specified here).

1.1 Identify the nouns and verbs in the Investment Bank text.

Solution: Nouns are in *underlined italics* and verbs are underlined. Remember that we never model any entity that would be a single row in a table (e.g. Investment bank).

An *investment bank* has a number of *branches*. Within each branch a number of *departments* operate and are structured in a hierarchical manner. The bank employs around 3000 *staff* who are *assigned to work* in the various *departments* across the *branches*. There are essentially three types of special *employees* where extra details required by the system. There are *dealers* who carry out investments who have limits imposed upon them for how much they can spend. There are *IT compliance managers* who's Basel2 role is required to be stored and there are *HR managers* that need have their assessment number recorded (along with other details not specified here).

Section 2. Case Study - The Department Store

Case Study: The Department Store

This database is the central component of an information system used to manage a department store that specialises in camping and hiking equipment. The store has several departments. For each department we must record its name and unique department id, phone number, and which floor it is on. Each department has several employees working for it. Each department has a manager. A manager can manage one or more departments.

About each employee we record their first name, last name, a unique employee id, their annual salary, which department they work for and which other employee is their boss. The General Manager of the Department Store has no boss.

The items that the store sells each have a name and id, a type, a colour and the retail price. Whenever a department sells items to customers we record which item was sold, how many were sold, which department sold it. Each sale may contain one or more items Each sale is unique to each department within the store.

Items are delivered to the store by suppliers. Each delivery from a supplier contains one or more items delivered to one or more departments within the department store, and the wholesale price of each item. For each supplier we record a unique supplier id, name and contact phone number.

2.1. Reading the case study, identify what entities need to be tracked?

Employee; Department; Items; Sale; Delivery; Supplier

2.2. What information will be recorded about each entity?

Department: id, name, floor, phone, manager (employee)
Employee: first name, last name, employee id, salary, department, boss (employee)
Item: id, name, type, colour, retail price
Sale: item, quantity, department
Delivery: item, supplier, wholesale price
Supplier: id, name, phone

2.3. What are the participation relationships between the entities?

M=Mandatory O=Optional
Supplier(M)-Delivery(M); Delivery(M)-Item(M); Delivery(M)-Department(M)

2.4. What are the cardinalities of the relationships?

M:M Many to Many 1:M One to Many 1:1 One to One

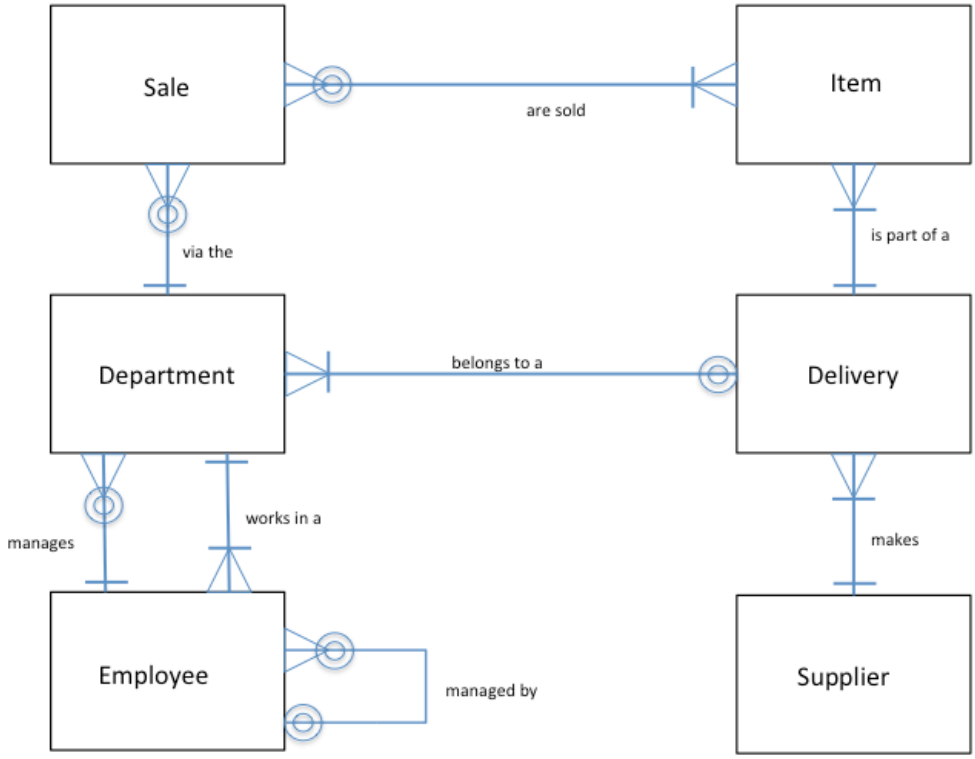
M:M Department-Delivery; Delivery-Item; Item-Sale;

1:M (1 first) Employee-Department; Department-Employee(manager), Employee(boss)-Employee(manager); Supplier-Delivery; Department-Sale;

1:1 NONE - (NB: this is very rare, and usually we would put this in the one entity)

2.5 Draw a conceptual model of the Department Store entities

For the answer 2.3-2.5 please use the ER model for The Department Store



Section 3. MySQL Setup

3.1. Login to your lab computer

3.2 Start MySQL Workbench.

*Hint: To assist with the MySQL Workbench set up please use the **MySQL Workbench Guide** in the Labs folder of LMS*

3.3. Click the + Symbol next to the “My SQL Connections”

3.4. Enter a connection name, hostname, username (student username) and password. Your password will be provided by your tutor.

Username: username
Hostname: info90002db.unimelb.edu.au
Port 3306 (default)
Password: username_2019

3.5. In the bottom right of the window select ‘Test Connection’ if successful click ‘OK’

3.6 Change your password

Changing your password

To change your password, after logging in, enter the command:

```
SET PASSWORD = ‘newpasswordhere’;
```

Now press the leftmost lightning button on the toolbar to run the query. Also remember that your password is case sensitive.

3.7. Download and run the setup script, as directed by your Tutor.

```
labs2018v5.sql
```

Appendix A Password Resets

Tutors are able to reset your password (New in 2019!)

```
SELECT user
FROM mysql.user

ALTER USER username identified by ‘username_2019’;
```