

## ST207 Assignment 2 MT2022

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### Miniworld: Company database

- The company has different departments. Each department is identified by a unique identifier and department name.
- Employees worked for departments of the company. Each employee is identified by a unique identifier, first and last name, date of birth, hire date, sex and salary.
- Supervisor manages the employees at the departments. The start date of the manager working at the department is recorded.
- All employees' salaries cannot be negative. An employee's salary cannot be higher than his or her supervisor's salary.
- Data of the deleted employee would be recorded in a table.
- Departments of the company liaise with suppliers to buy products. Supplier's is identified by its brand name.
- Unique identifier, price, cost and product type of product supplied by supplier are recorded.
- Clients work with departments. Clients are also attended by employees where the employees sell products to the clients. Each client is identified by a unique identifier and name.

**The <entity; attributes> of the conceptual model are :**

1. <DEPARTMENT; department\_id(PK), department\_name, supervisor\_start\_date, supervisor\_id>
2. <EMPLOYEE; employee\_id(PK), first\_name, last\_name, date\_of\_birth, hire\_date, sex, salary, supervisor\_id, department\_id>

3. <DEPARTMENT\_SUPPLIER; department\_id, supplier\_brand, product\_id>
4. <PRODUCTS; product\_id(PK), cost, price, product\_type>
5. <CLIENT; client\_id(PK), client\_name, department\_id>
6. <ATTENDS\_TO; employee\_id, client\_id, product\_id>
7. <EMPLOYEE\_LOG; employee\_id, description>

**The relationships and cardinalities of the conceptual model are:**

1. A department can have (1,N) employees, leading to total participation.
2. An employee can work for (1,N) department, leading to total participation.
3. Each supervisor can have (1,N) supervisees, leading to total participation.
4. Each employee can have (0,N) supervisor.
5. (0,N) employees might manage the department as some employees are not supervisors.
6. Each department can have (1,N) supervisor, leading to total participation.
7. Each department buys inventory from (0,N) suppliers.
8. Each supplier supplies to (1,N) department, leading to total participation.
9. Clients can work with (1,N) departments, leading to total participation.
10. Each department works with (0,N) clients.
11. Each client can be attended by (1,N) employees, leading to total participation.
12. Each employee attends (0,N) clients.