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CSC 423 Database Systems
Group Project

Part 1: Develop a conceptual data model reflecting the following requirements:

- Identify the main entity types.
- Identify the main relationship types between the entity types identified in "a".
- Determine the multiplicity constraints for each relationship identified in "b".
- Identify attributes and associate them with entity or relationship types.
- Determine candidate and primary key attributes for each (strong) entity type.
- Generate the E-R diagram for the conceptual level (no FKs as attributes).

Part 1 : Step a: Identify the main entity types.

- Clients
- Equipment
- Employee
- Requirement

Part 1 : Step b + cl
identify the main relationship types between the entity types identified in "a".

Client (1) → has → **(1…*)Requirement**
Requirement(1…*) → has → **(1) Client**

Employee(1…*) → follows → **(0…*)Requirement** //can have multiple cleaners for 1 job
Requirement(1…*) → uses → **(1…*) Employee**

Requirement(1…*) → uses → **(0…*) Equipment** //may or may not use special equipment
Equipment(0…*) → used by → **(1…*) Requirement**

Part 1 : Step d + e Determine candidate and primary key attributes for each (strong) entity type.

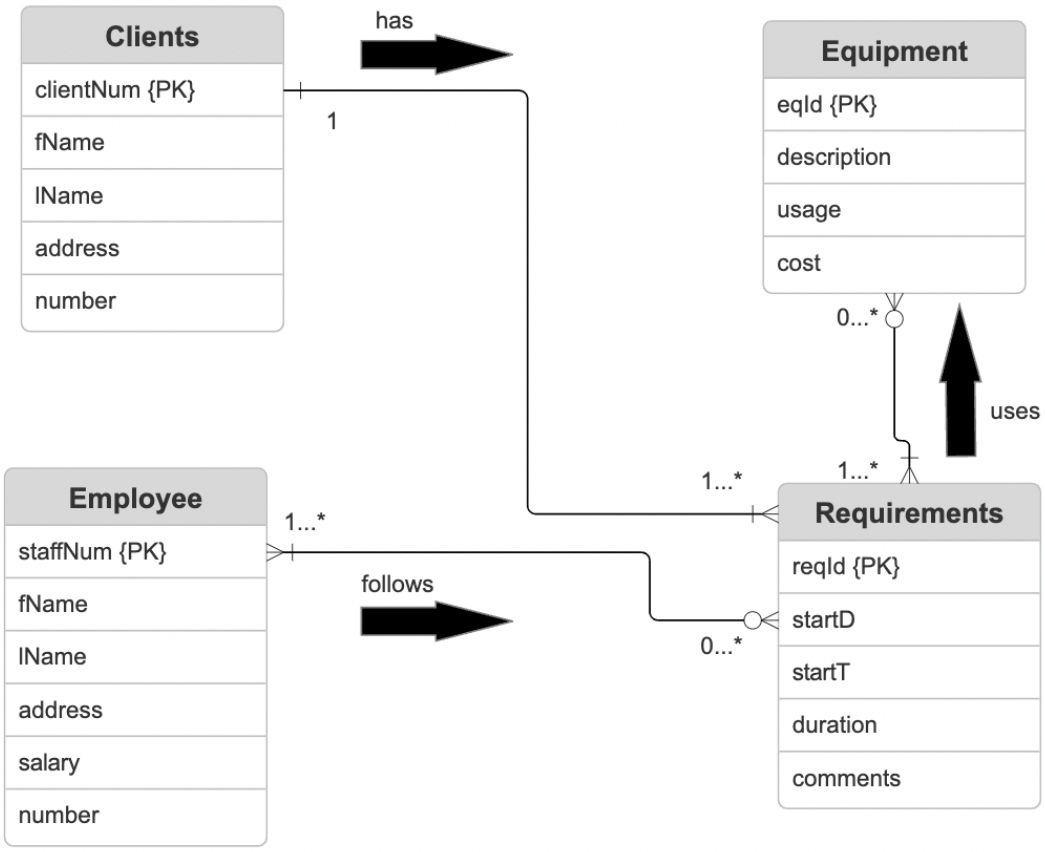
Clients(clientNum{PK} ,fName, lName, address, number{CK}) *// assuming only one number allowed per client*

Equipment(eqID{PK}, description, usage, cost)

Employee(staffNum{PK}, fName, lName, address, salary, number(CK}) *//assuming only one number allowed per employee*

Requirement(reqID{PK}, startD, startT, duration, comments)

Part 1 : Step f:


Clients
clientNum {PK}
fName
lName
address
number
has
1
Equipment
eqId {PK}
description
usage
cost
0...*
uses
1...*
1...*
Employee
staffNum {PK}
fName
lName
address
salary
number
1...*
follows
0...*
Requirements
reqId {PK}
startD
startT
duration
comments