COMP 3311: Database Management Systems

Tutorial 2 Relational Model and Relational Database Design

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Submission: Upload this exercise worksheet by <u>11.59pm Friday (25 Feb)</u> (Only one student needs to upload)

Exercise 1: Reduce the bank E-R schema to a relational schema. Specify all referential integrity constraints and actions. ***Where possible use schema combination to reduce relationships.***
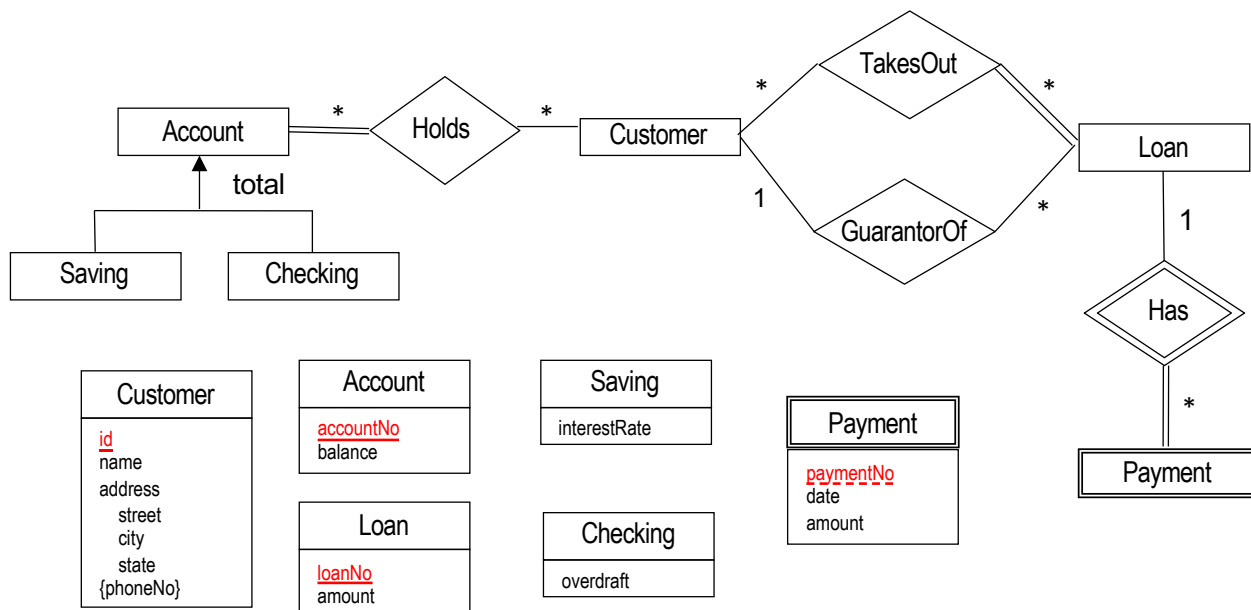
Saving (<u>accountNo</u>, balance, interestRate)

Checking (<u>accountNo</u>, balance, overdraft)

Holds (<u>accountNo</u>, <u>id</u>)
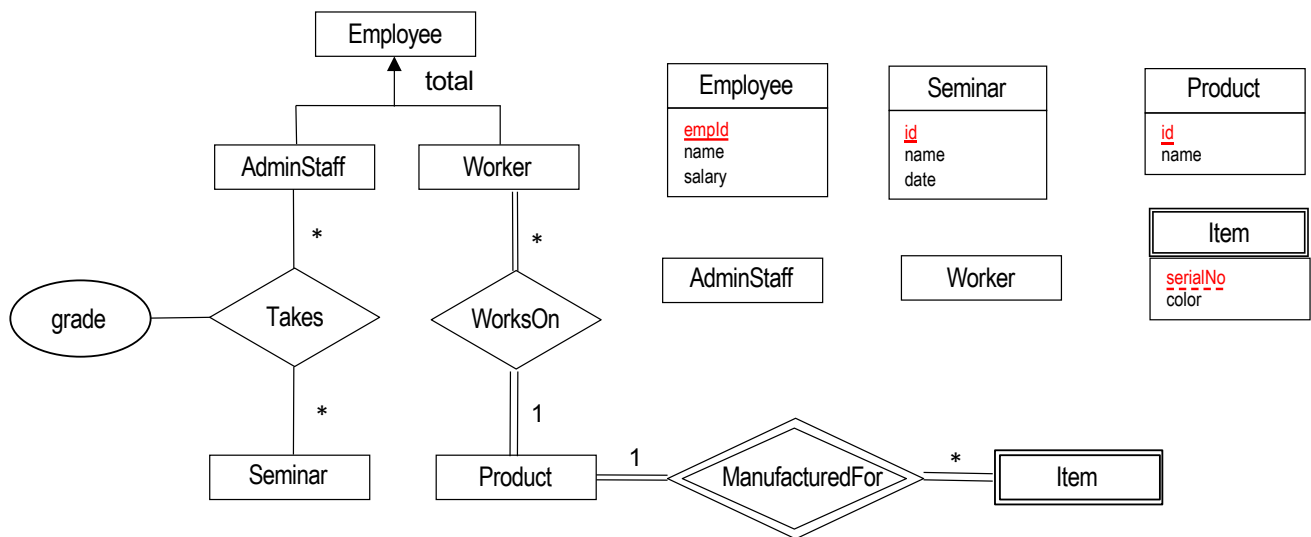
Customer (<u>id</u>, name, street, city, state)

PhoneNo (<u>id</u>, <u>phoneNo</u>)

TakesOut (<u>id</u>, <u>loanNo</u>)

Loan (<u>loanNo</u>, amount, guarantorId)

Payment (<u>loanNo</u>, <u>paymentNo</u>, date, amount)

Exercise 2: Reduce the factory E-R schema to a relational schema. Specify all referential integrity constraints and actions. *Where possible use schema combination to reduce relationships.*

Employee

total

AdminStaff   Worker

*   *

grade — Takes   WorksOn

*   1

Seminar   Product — 1 — ManufacturedFor — * — Item

Employee
empId
name
salary

Seminar
id
name
date

Product
id
name

Item
serialNo
color

AdminStaff   Worker

AdminStaff (empId, name, salary)

Worker (empId, name, salary, prodId)

Takes (empId, semId, grade)

Seminar (id, name, date)

Product (id, name)

Item (serialNo, prodId, color)