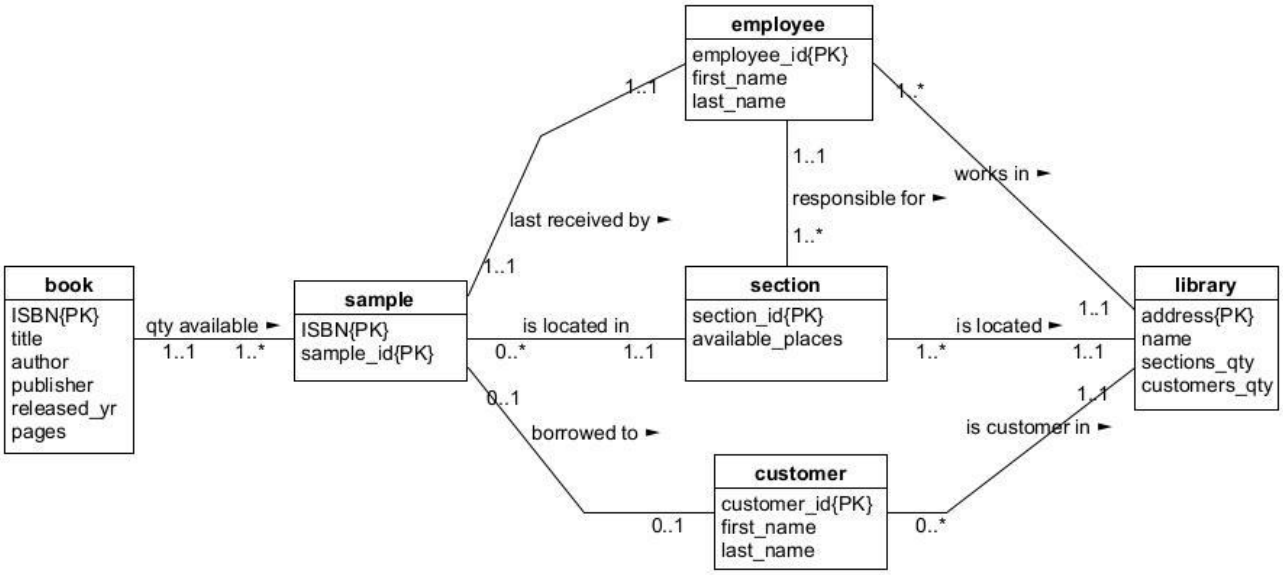
Excercise 1.1

You need to create a database for a library, focusing on info about books.

Show relation between a book and its multiple samples in ER-diagram. A book can be identified with ISBN-number. Suggest other appropriate attributes as well.

Draw ER-diagram, and translate it to tables in relational model.

Answer:



book(ISBN, title, author, publisher, released_yr, pages)

sample(ISBN*, sample_id, section_id*, received_by*, borrowed_to*)

employee(employee_id, first_name, last_name, resp_for_section*)

section(section_id, available_places)

customer(customer_id, first_name, last_name)

library(address, name, sections_qty, customers_qty)

Excercise 1.2

Show relation between book and a keyword. One book can have many keywords, and same keyword can be found in many books. A books identifies with ISBN number. Suggest some other attributes as well.

Draw ER-diagram, and translate it to tables in relational model.

Answer:

book(ISBN, title, author, publisher, released_yr, pages)

keyword(keyword_id, language, word, length)

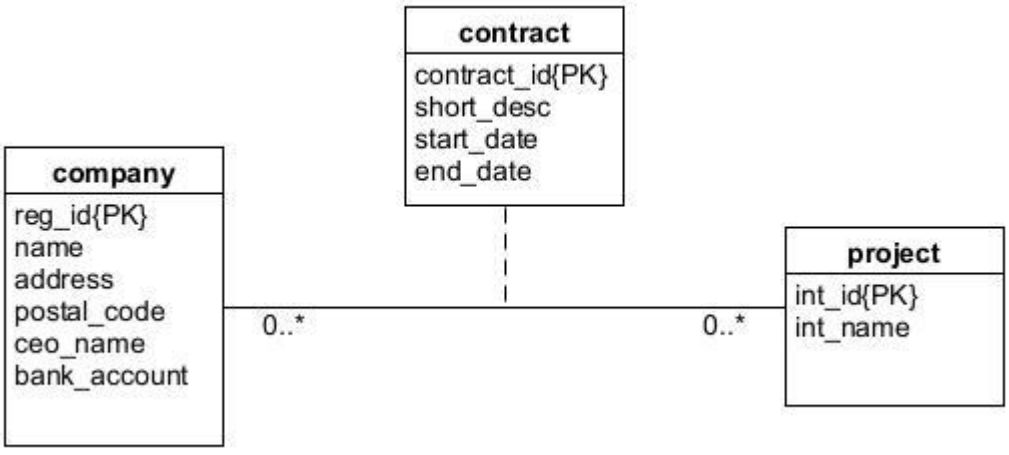
book_keyword(ISBN*, keyword*)

Excercise 1.3

Show relation between company and projects. A company has following attributes: address, account number, postal code, and name of CEO. Suggest other appropriate attributes as well.

Draw ER-diagram, and translate it to tables in relational model.

Answer:



company(reg_id, name, address, postal_code, ceo_name, bank_account)

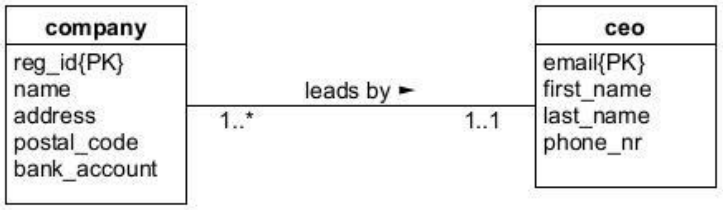
project(int_id, int_name)

contract(contract_id, reg_id*, int_id*)

Excercise 1.4

There is a need to have more info about CEO from exc. 1.3. Actual attributes are CEO name, email and phone number. Show relation between CEO and company in ER-diagram. Translate it to relational model as well.

Answer:



company(reg_id, name, address, postal_code, ceo_name, bank_account)

ceo(email, first_name, last_name, phone_nr)

ceo_company(company_id*, ceo_id*)