

Introduction to Data Base

CIS 317 DL

Homework # 1

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1.

a. Identify main entity types for the company

- Instructors
- Trainees
- Sessions
- Courses
- Teams
- research

b. Identify the main relationship types and specify the multiplicity for each relationship.

State any assumptions you make about the data.

- Course are taught by teams (1.1)
- Teams teach course (1.5)
- Instructors are assigned to teams (0.2)
- Instructors are assigned to research (0.1)
- Trainees take courses (1.1)
- Courses are taken by trainees (1.*)
- Trainees are handled by instructors (1.300)
- Instructors handle trainees (1.1000)

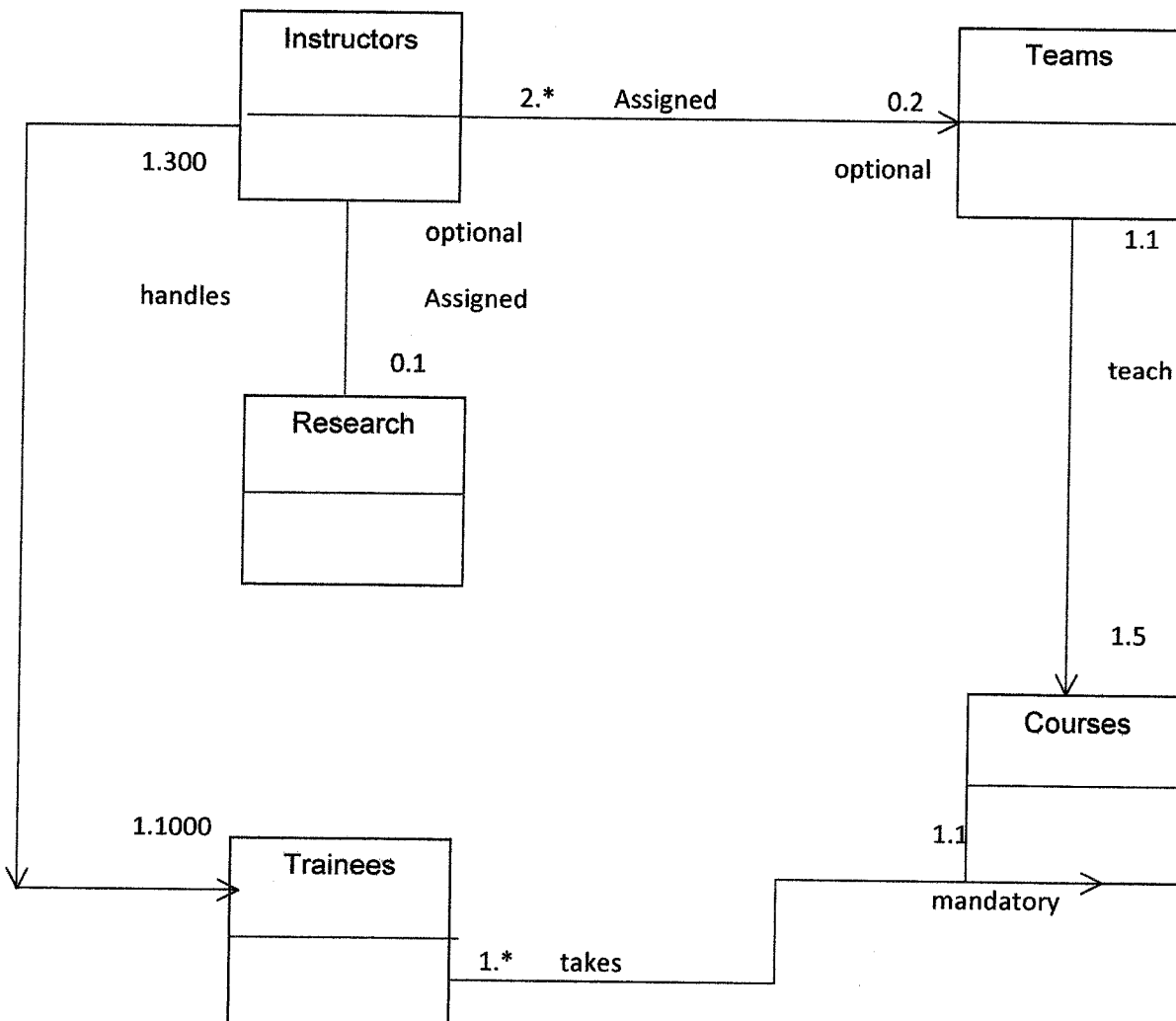
*Assumption is that at least one trainee takes a course otherwise it is cancelled

1. You are required to create a conceptual data model of the data requirements for a company that specializes in IT training. The Company has 300 instructors and can handle up to 1000 trainees per training session. The Company offers five advanced technology courses, each of which is taught by a teaching team of two or more instructors. Each instructor is assigned to a maximum of two teaching teams or may be assigned to do research. Each trainee undertakes one advanced technology course per training session.

(a) Identify the main entity types for the company.

(b) Identify the main relationship types and specify the multiplicity for each relationship. State any assumptions you make about the data.

(c) Using your answers for (a) and (b), draw a single ER diagram to represent the data requirements for the company.



2. Create an ER diagram for each of the following descriptions:

Each company operates four departments, and each department belongs to one company. Each department employs one or more employees, and each employee works for one department. Each of the employees may or may not have one or more dependants, and each dependant belongs to one employee. Each employee may or may not have an employment history.

