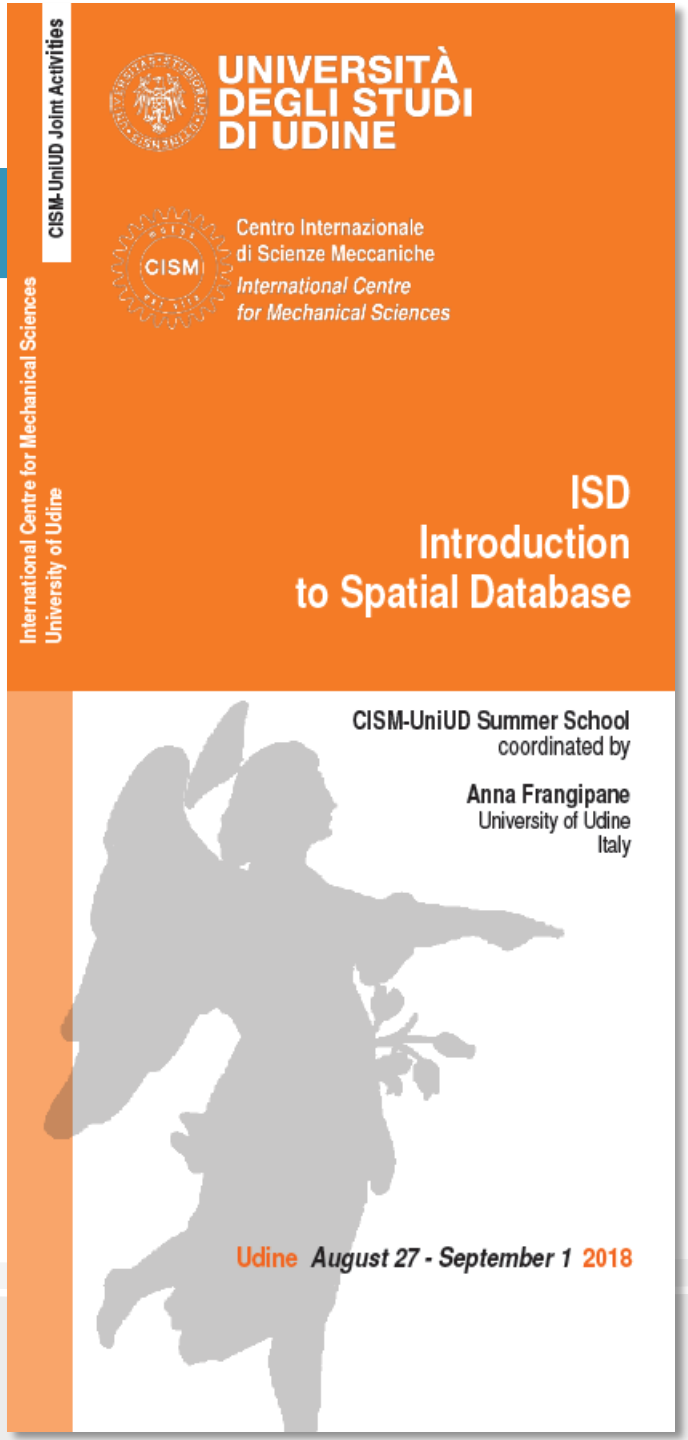

EER Exercises

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University of Udine
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Schedule

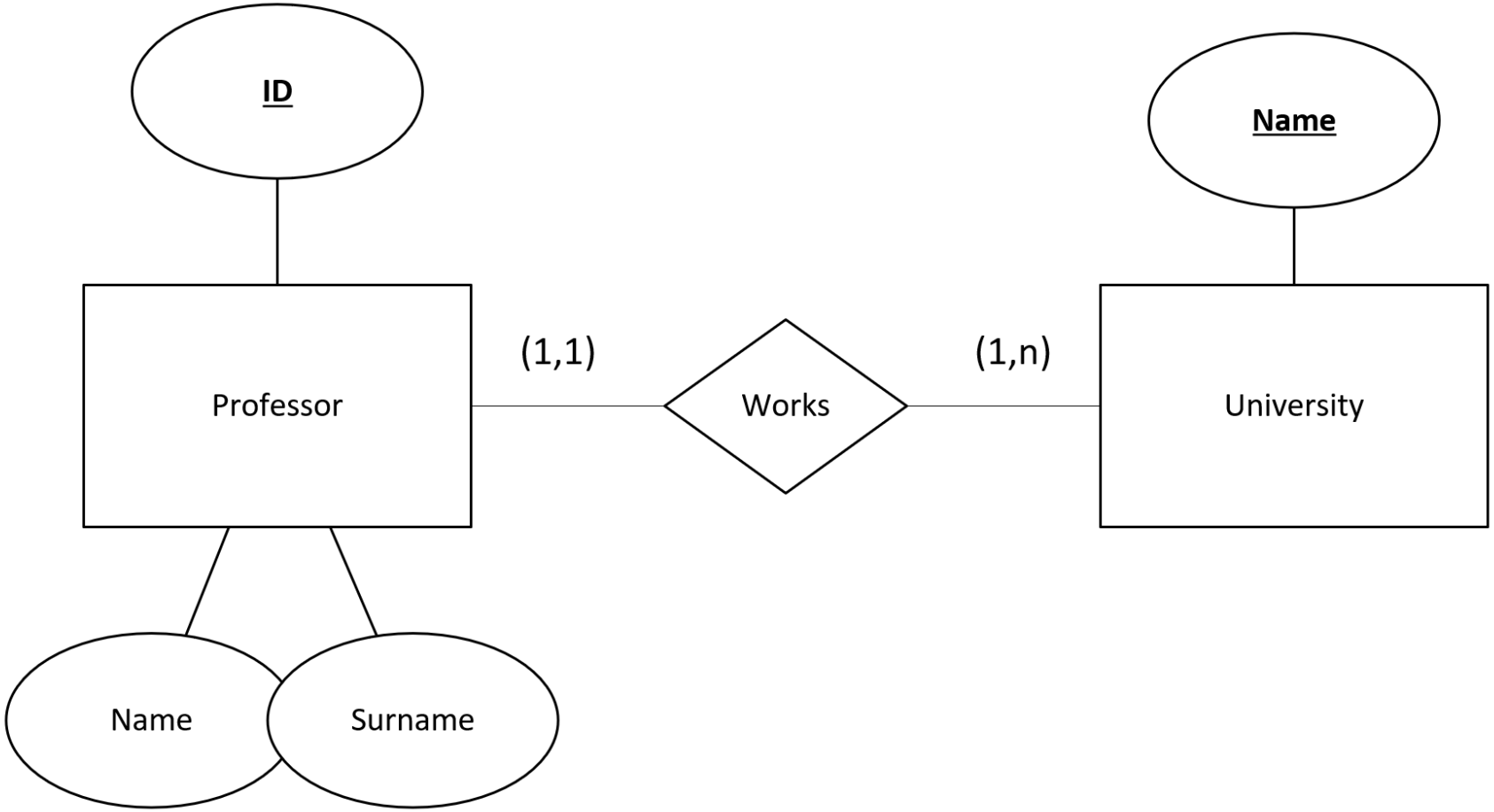
- 09:00 – 10:30:
  Exercises on the Entity/Relationship model
- 11.00 – 12.30:
  Introduction so SQL

ER Model Exercises

- Text of the exercise here or online
- Online repository:
  `https://github.com/basaldella/isd2018`

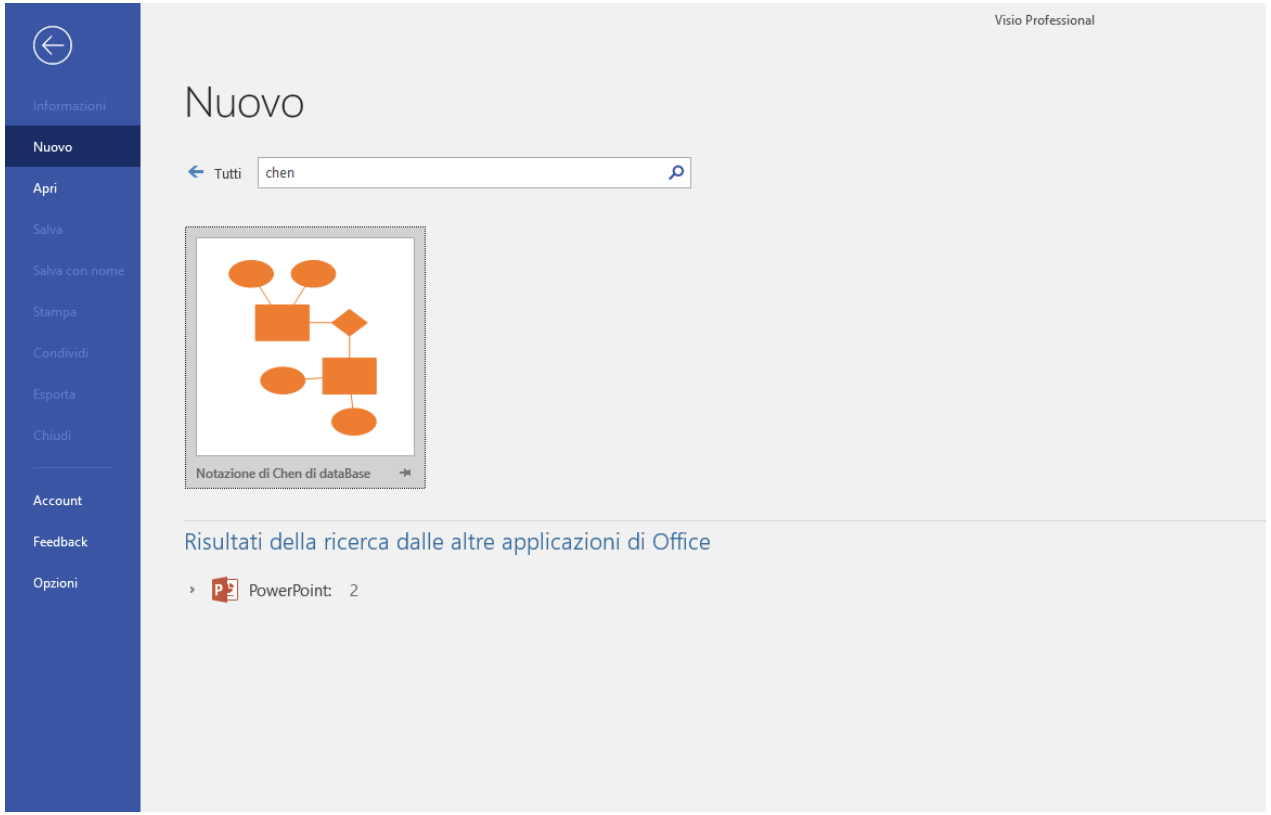
  Look for the folder ‘Day One’ and download the lecture notes. We’ll do exercises 4 and 5 (page 9)
- Schedule: 30 min on your own/15 min correction
- If you have any questions **feel free to ask!**

ER: Recap



ER With Microsoft Visio

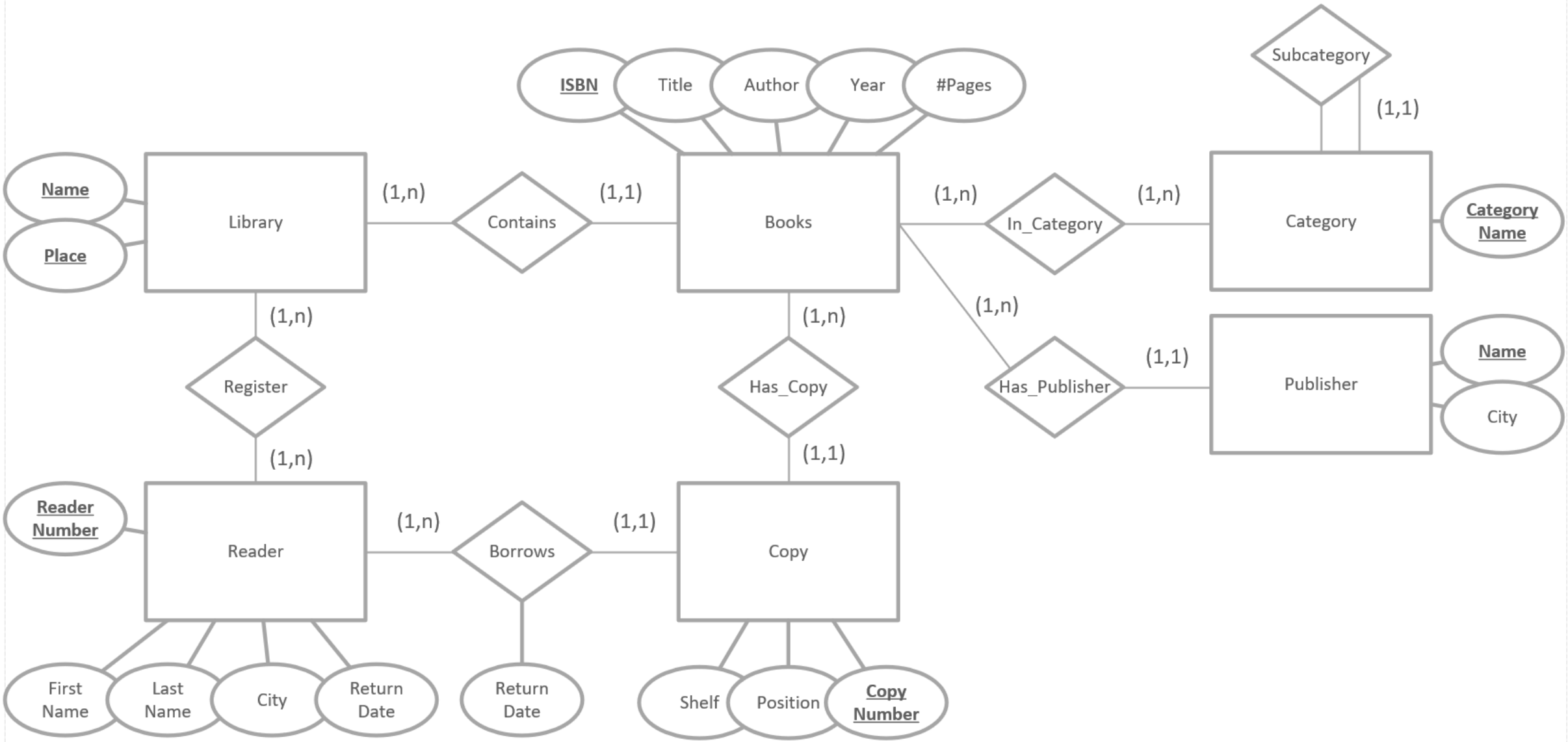
- Open ‘Microsoft Visio’
- Click on ‘Cerca Modelli Online/Online Models’
- Look for ‘Chen’
- Open the model



Exercise

Assume there is a library system with the following properties.

- The library contains one or several copies of the same book. Every copy of a book has a copy number and is located at a specific location in a shelf. A copy is identified by the copy number and the ISBN number of the book.
- Every book has a unique ISBN, a publication year, a title, an author, and a number of pages. Books are published by publishers. A publisher has a name as well as a location.
- Within the library system, books are assigned to one or several categories. A category can be a subcategory of exactly one other category. A category has a name and no further properties.
- Each reader needs to provide his/her family name, his/her first name, his/her city, and his/her date of birth to register at the library. Each reader gets a unique reader number.
- Readers borrow copies of books. Upon borrowing the return date is stored.


ISBN
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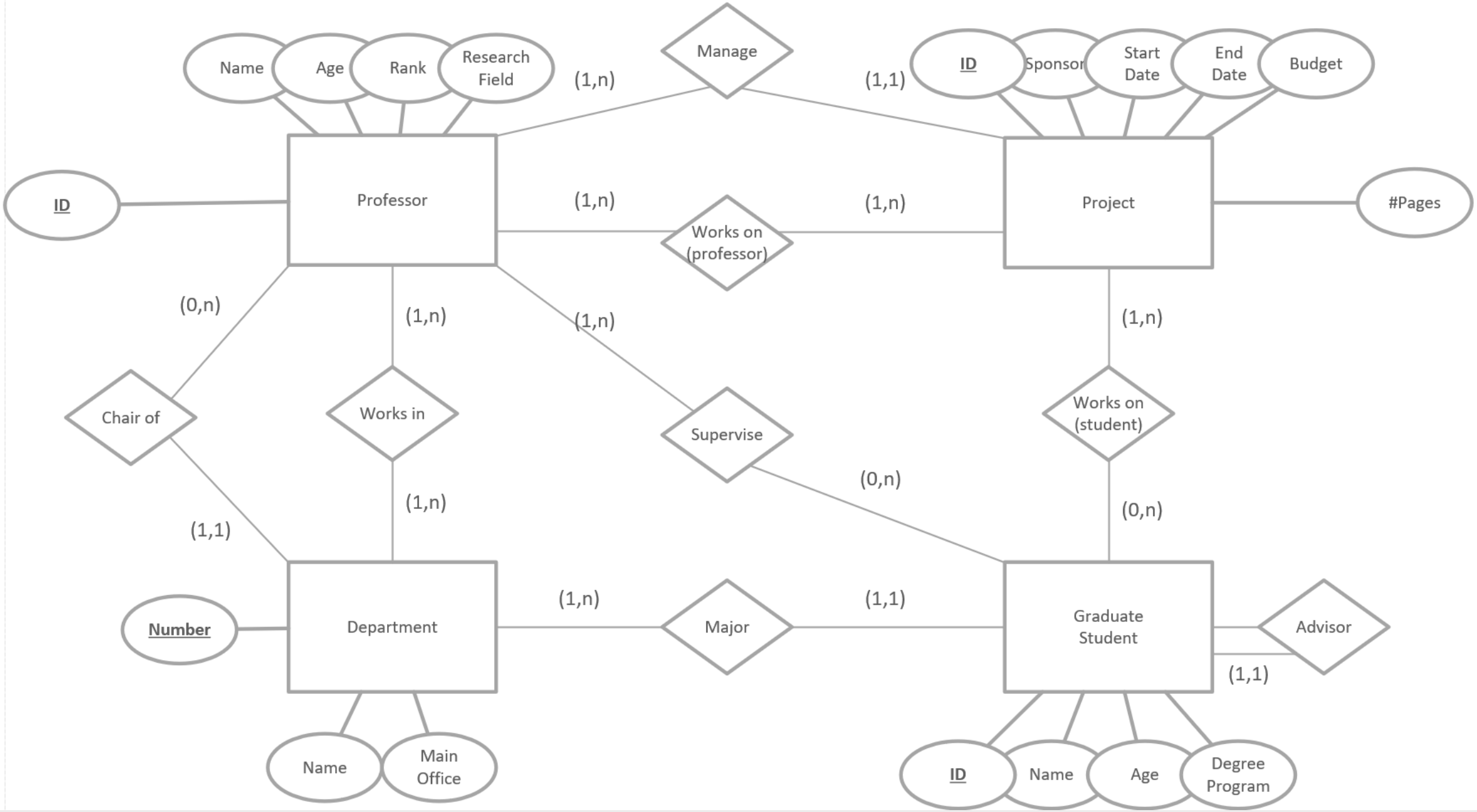
First Name
Last Name
City
Return Date
Return Date
Shelf
Position
Copy Number

We must plan a University Database and we know the following information:

- Professors have an ID, a name, an age, a rank, and a research specialty.
- Projects have a project number, a sponsor name (e.g., NSF), a starting date, an ending date, and a budget. Each project is managed by one professor (known as the project's principal investigator) and it is worked on by one or more professors (known as the project's co-investigators).
- Graduate students have an ID, a name, an age, and a degree program (e.g., M.S. or Ph.D.).
- Professors can manage and/or work on multiple projects. Each project is worked on by one or more graduate students (known as the project's research assistants).
- When graduate students work on a project, a professor must supervise their work on the project. Graduate students can work on multiple projects, in which case they will have a (potentially different) supervisor for each one.
- Departments have a department number, a department name, and a main office. Departments have a professor (known as the chairman) who runs the department. Professors work in one or more departments, and for each department that they work in, a time percentage is associated with their job.
- Graduate students have one major department in which they are working on their degree. Each graduate student has another, more senior graduate student (known as a student advisor) who advises him or her on what courses to take.


Name
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Sponsor
Start Date
End Date
Budget
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