



ERD exercise

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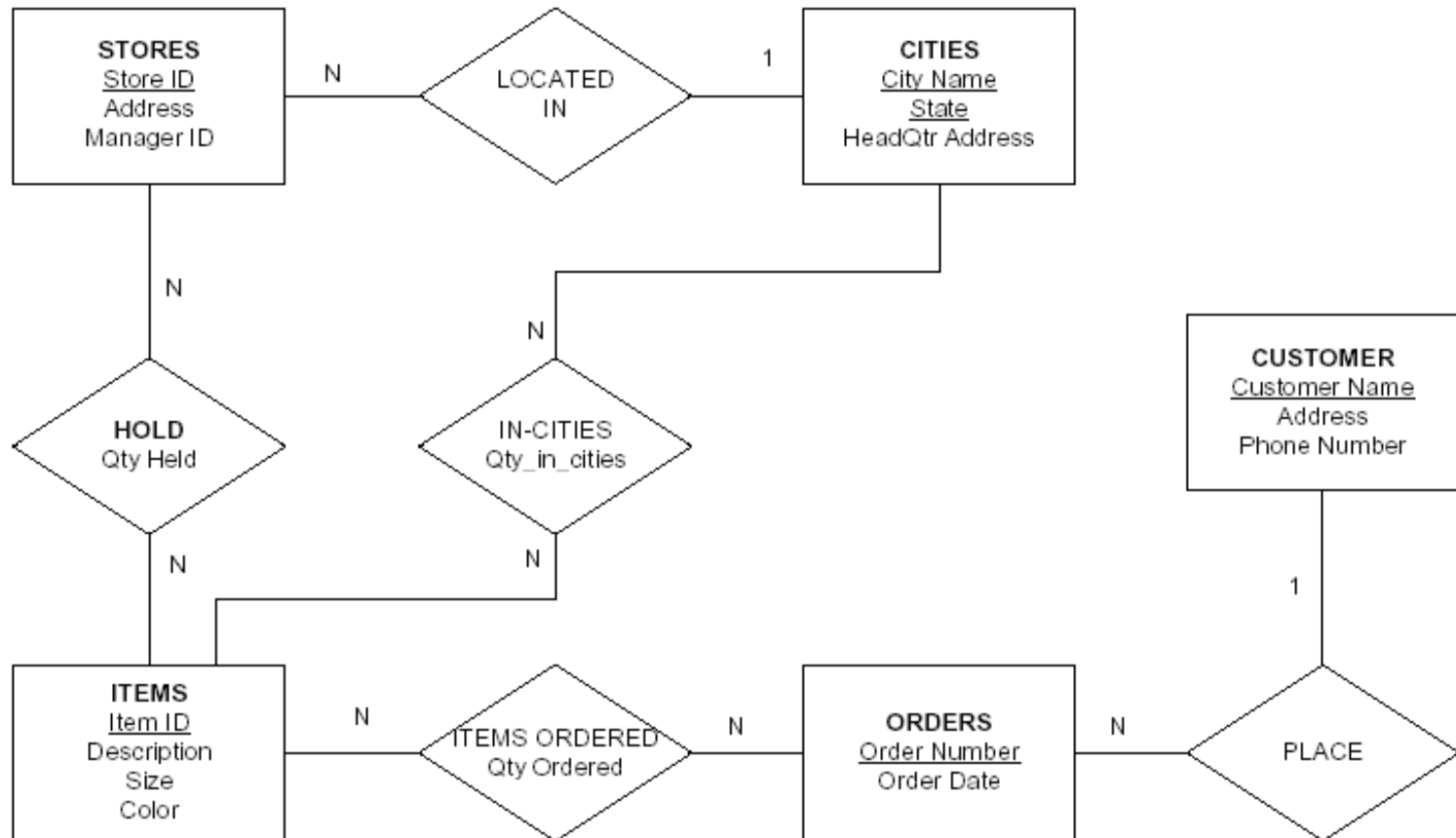
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[Example: Department Store]

- A department store operates in several cities
- In a city there is one headquarter coordinating the local operations
- A city may have several stores
- Stores hold any amount of items
- Customers place their orders for any number of items to a given store
- **GOAL:** Optimize shopping in each city

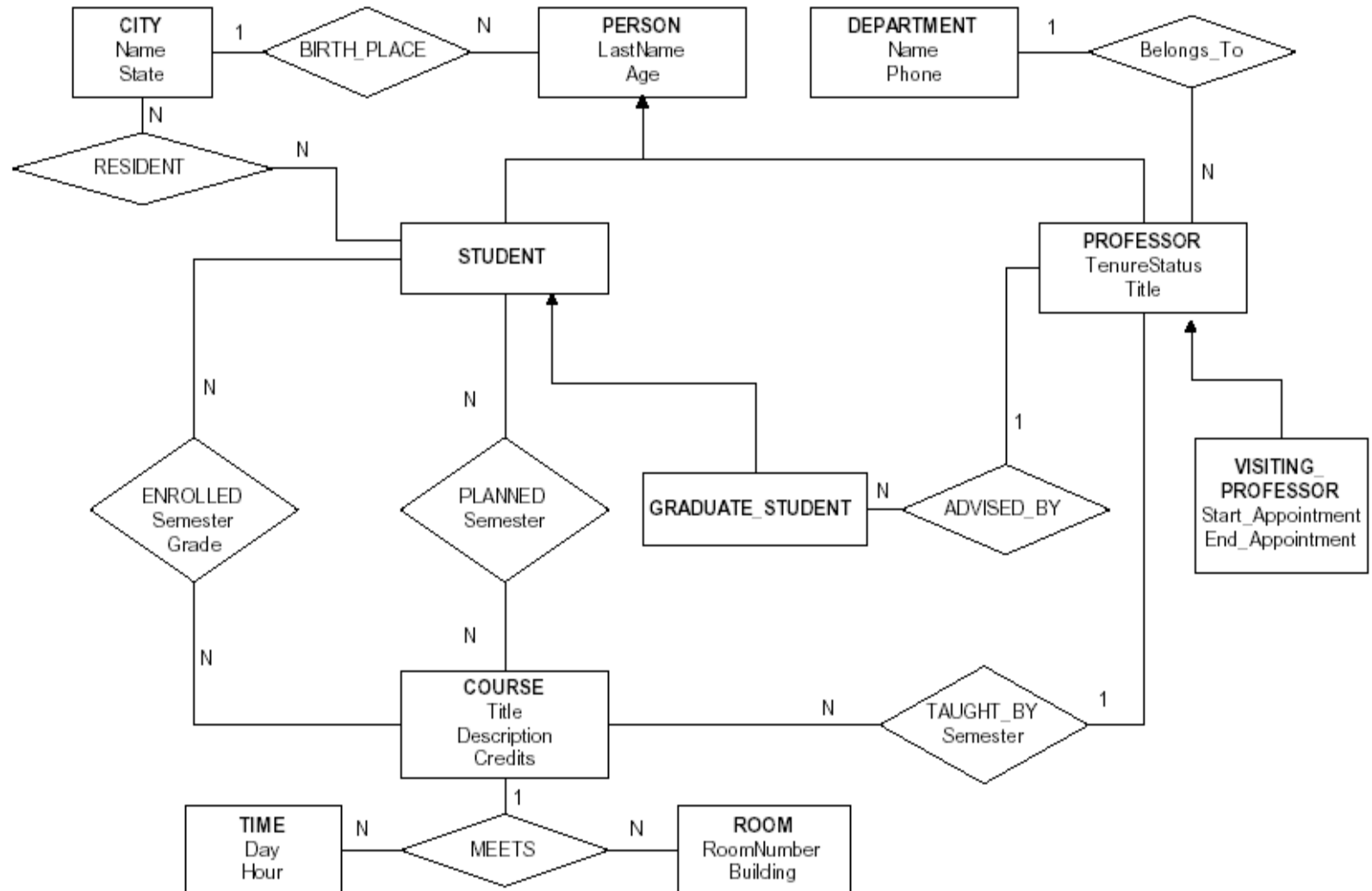
Department Store



[Example: University Database]

- Professors work for only one department
- Departments have many professors
- Each course is taught by only one professor
- Students make a planor program of study
- A course could meet in several rooms/times
- Graduate students must have an advisor
- Cities are categorized as resident/BirthPlace
- Visiting prof. need an End/Start date

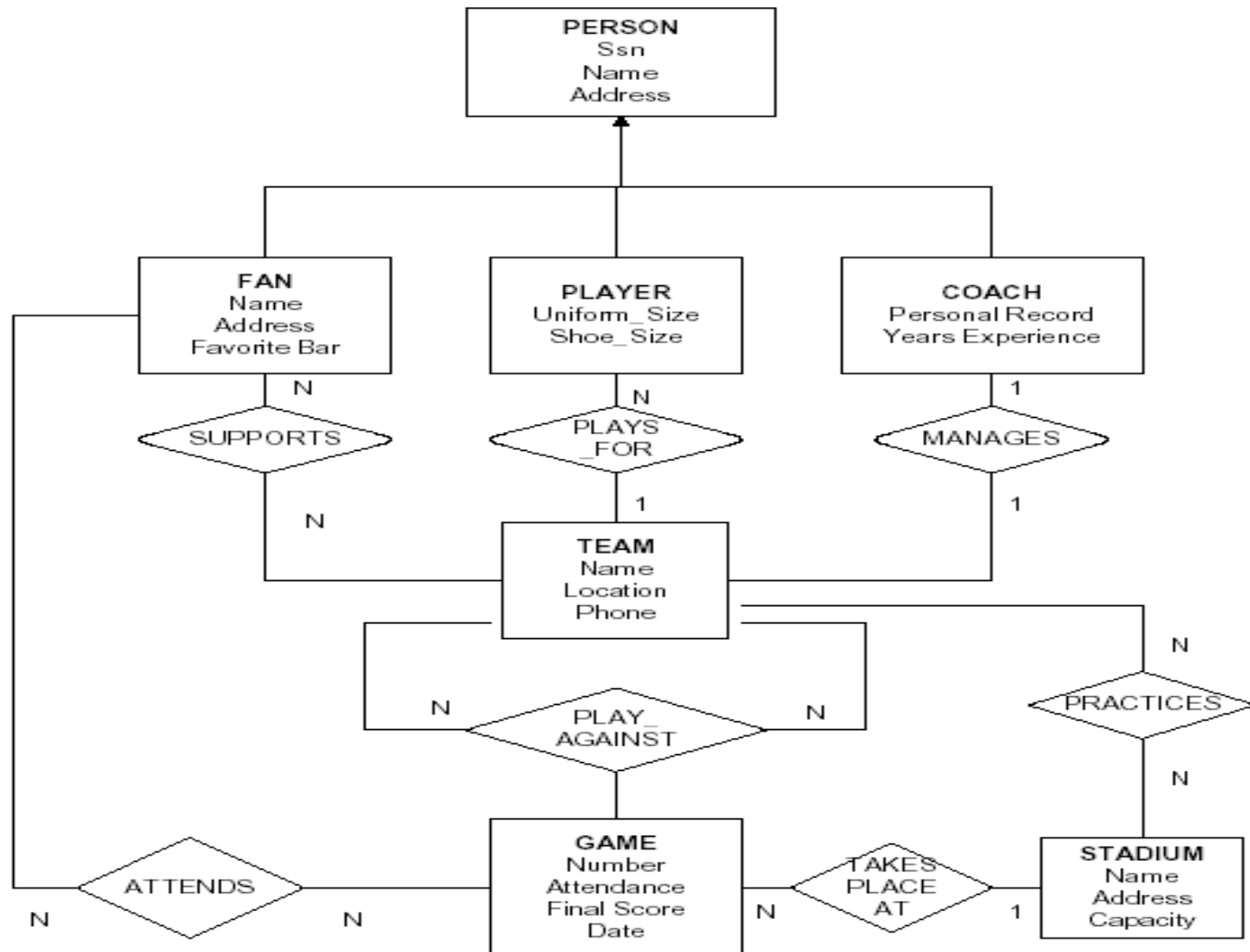
University Database



[Soccer Database]

- A team has players, one coach, fans
- Teams play according to a schedule
- Teams need to practice in a Stadium
- Attendance and scores must be recorded

Soccer Database



[Research Project Database]

- Some employees are researchers
- Every project has a leader investigator
- Every project must be funded by an agency
- A project may include several topics
- A topic could appear in several projects
- Researchers must produce report(s)
- Each employee must have a supervisor

[

Research Project Database

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Contract-Supplies System (1/3)

- A company negotiates contracts with
- suppliers to provide certain amount of items at a fixed price
- Orders are placed against any of the already negotiated contracts
- A contract could provide items to any number of orders

[Contract-Supplies System 2/3]

- An order may include any number of items negotiated in the contract
- Orders should not exceed the maximum amount of items quoted in the contract
- All items in an order must be provided as part of a single contract and a single project

[Contract-Supplies System]

[Manufacturing: Requisitions]

- Projects are broken into tasks
- Tasks are assigned to departments
- A task is created for one project and assigned to one department
- Requisitions are made for projects
- Each requisition could ask for any number of items

Manufacturing: Requisitions

2/3

- Each requisition is for one project and is made to one supplier
- Items could be: equipment or materials and are coded in a similar way
- Suppliers send periodic price notices to advise the company of any changes in their prices

[Manufacturing: Requisitions]

Job-Shop Accounting System (1/4)

- The system is used by a company that manufactures special-purpose assemblies for customers
- To manufacture assemblies the company creates a sequence of processes (steps)
- Each process is supervised by a department
- Assume there are three type of processes: PAINT, FIT, CUT

Job-Shop Accounting System

2/4

- During manufacturing an assembly could pass through any sequence of processes, in any order; it may pass through the same process more than once
- A unique Job# is given to any new assembly.
- Costs and started-terminated dates must be recorded

Job-Shop Accounting System

3/4

- An accounting system is used to keep track expenditure for each:
 - DEPT,
 - PROCESS,
 - ASSEMBLY
- As a job proceeds, cost transactions can be recorded against it.

[Job-Shop Accounting System]
