

*Data modeling*

# What is data modeling?

- Data modeling is the process of creating a visual representation of either a whole information system or parts of it to communicate connections between data points and structures.

# Starting with services

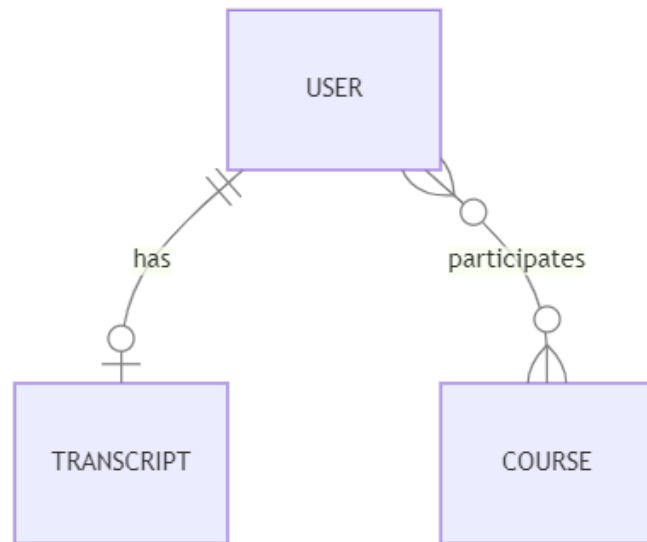
- Identify 1-2 entities per service

- \* User account management
  - user
- \* Courses and enrollments
  - course
- \* Student records
  - transcript

# Relationships

- Identify entity relationships:
  - one-to-one (user-transcript)
  - one-to-many
  - many-to-many (users-courses)

# ER diagram



# Identifying fields (data model)

- basic fields

```
* user
  - username
  - password
  - courses
* course
  - dept_code
  - course_num
  - title
  - sections
    - people
* transcript
  - student_id
  - semesters
    - courses
      - grades
```

# Modeling relationships

- embedding vs. references
- where to store references?
- more on these topics later

# Pydantic models