Lap 1

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EXAMPLE 2

University

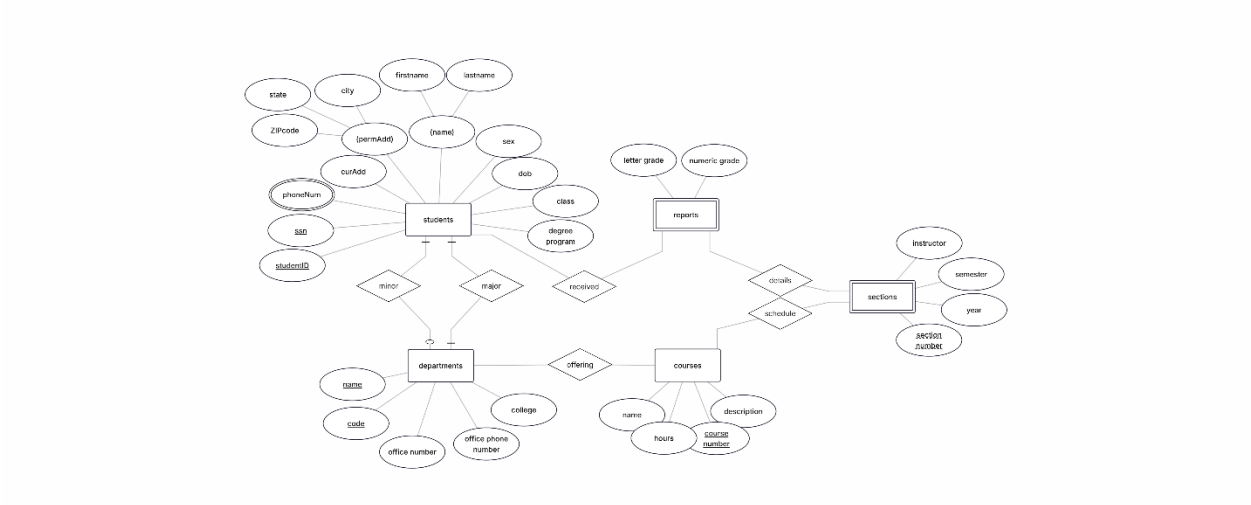
1. Entities

    - Students
    - Departments
    - Courses
    - Sections (Weak): can’t exist without course || sections || <=> courses
    - Reports (Weak): can’t exist without student || reports || <=> students

2. Attributes

    - Students
        - Name (Composite)
        - Student ID (Unique)
        - Social security number (Unique)
        - Current address (Composite)
        - Phone number
        - Permanent address (Composite) {city, state, ZIP code}
        - Birth date
        - Sex
        - Class
        - Major department
        - Minor department
        - Degree program
    - Departments
        - Name (Unique)
        - Code (Unique)
        - Office number
        - Office phone number
        - College
    - Courses
        - Name
        - Description
        - Course number (Unique)
        - Number of semester hours
        - Offering department
    - Sections

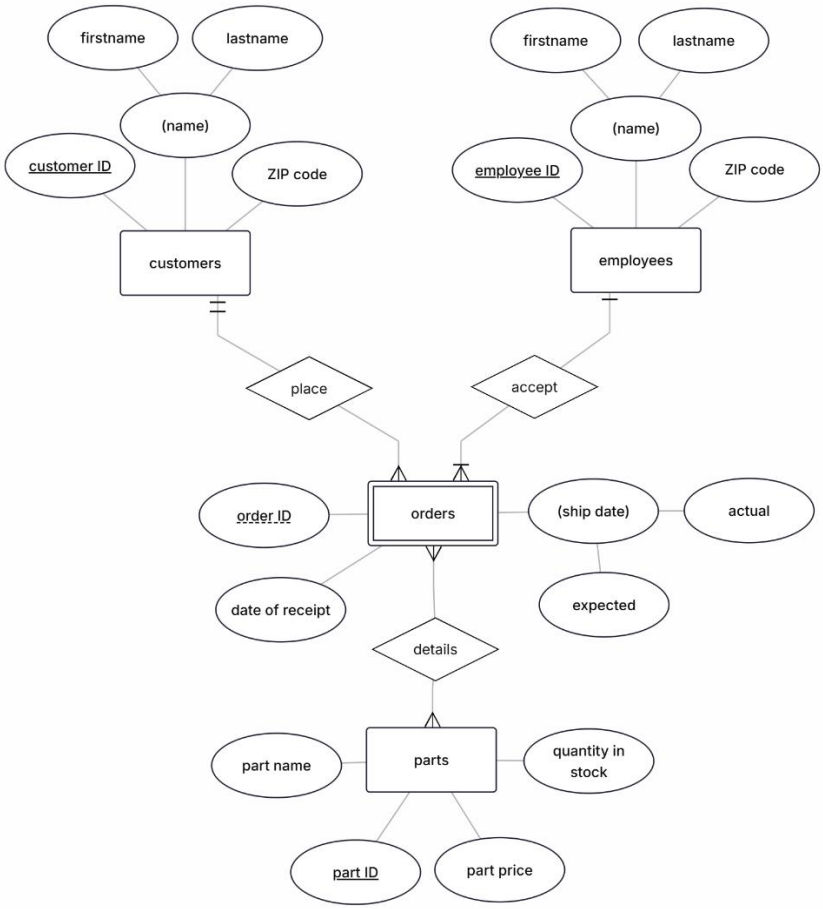
        - Instructor
        - Semester
        - Year
        - Course
        - Section number (Unique)
    - Reports
        - Student
        - Section
        - Letter grade
        - Numeric grade
3. Relationships
    - Students -> Departments
    - Departments -> Courses
    - Students -> Reports
    - Reports -> Sections
    - Courses -> Sections
4. Constraints
    - Students to Departments: Many to One
        - Many students have one department but one student can have only one department
    - Departments to Courses: One to Many
        - One department can have many courses but the courses can only belong to one department
    - Students to Reports: One to One:
        - One report per student
    - Reports to Sections: One to Many
        - One report can have many sections
    - Courses to Sections: One to Many
        - one course can have a lot of sections but the section belongs to one course



EXAMPLE 3

Mail Order

1. Entities
    - Employees
    - Customers
    - Parts
    - Orders (weak): can't exist without customers || orders || <=> customers
2. Attributes
    - Employees
        - Employee ID (Unique)
        - Name (Composite) {first name, last name}
        - ZIP code
    - Customers
        - Customers ID (Unique)
        - Name (Composite) {first name, last name}
        - ZIP code
    - Parts
        - Part number (Unique)
        - Part name
        - Price
        - Quantity in stock
    - Orders
        - Employee ID
        - Customer ID
        - Order ID (Unique)
        - Quantity
        - Date of receipt
        - Ship date (composite) {expected date, actual date}
3. Relationship
    - Employees -> orders
    - Customers -> orders
    - orders -> parts
4. Constrains
    - Employees to Orders: One to Many
        - One employee can accept many orders but those orders will belong to that one employee
    - Customers to Orders: One to Many
        - One customer can place many orders but those orders will belong to that one customer
    - Orders to Parts: Many to Many
        - One order can have many parts and one part cab be in many orders


firstname
lastname
(name)
customer ID
ZIP code
customers
firstname
lastname
(name)
employee ID
ZIP code
employees
place
accept
order ID
orders
(ship date)
actual
date of receipt
expected
details
part name
parts
quantity in stock
part ID
part price