

Chapter 5

Inheritance in Database Designs

Motivating Inheritance

- Problem: Design a database to hold hourly and salaried employees

Possible Solutions

Solution 1

SalariedEmployee
EmpNo
EmpName
EmpHireDate
EmpSalary

HourlyEmployee
EmpNo
EmpName
EmpHireDate
HourlyWage

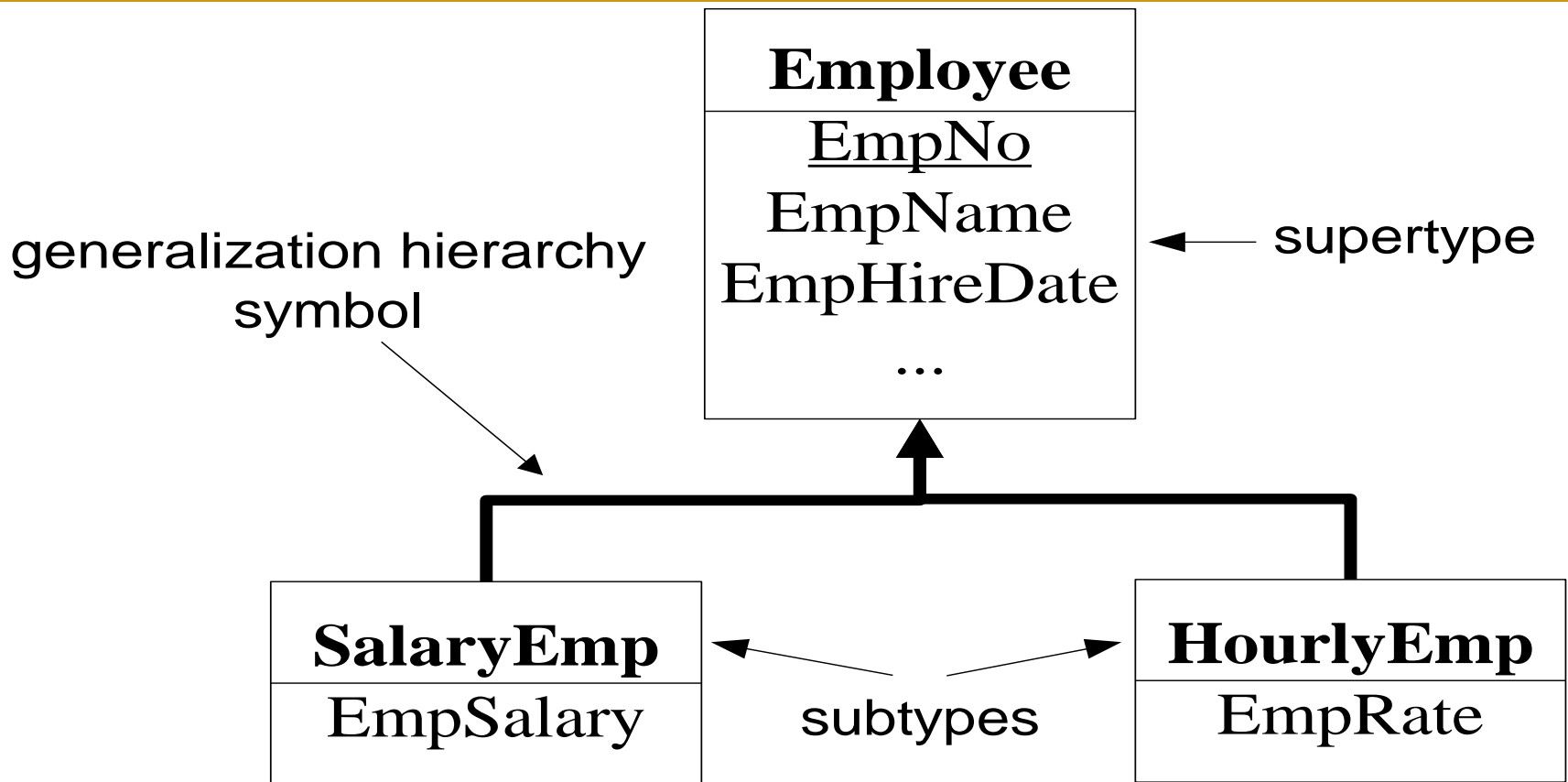
Try writing the following queries:

- Display a list of all employees
- Display a list of salaried employees

Solution 2

Employee
<u>EmpNo</u>
EmpName
EmpHireDate
EmpType
EmpSalary?
HourlyWage?

Solution 3: Inheritance



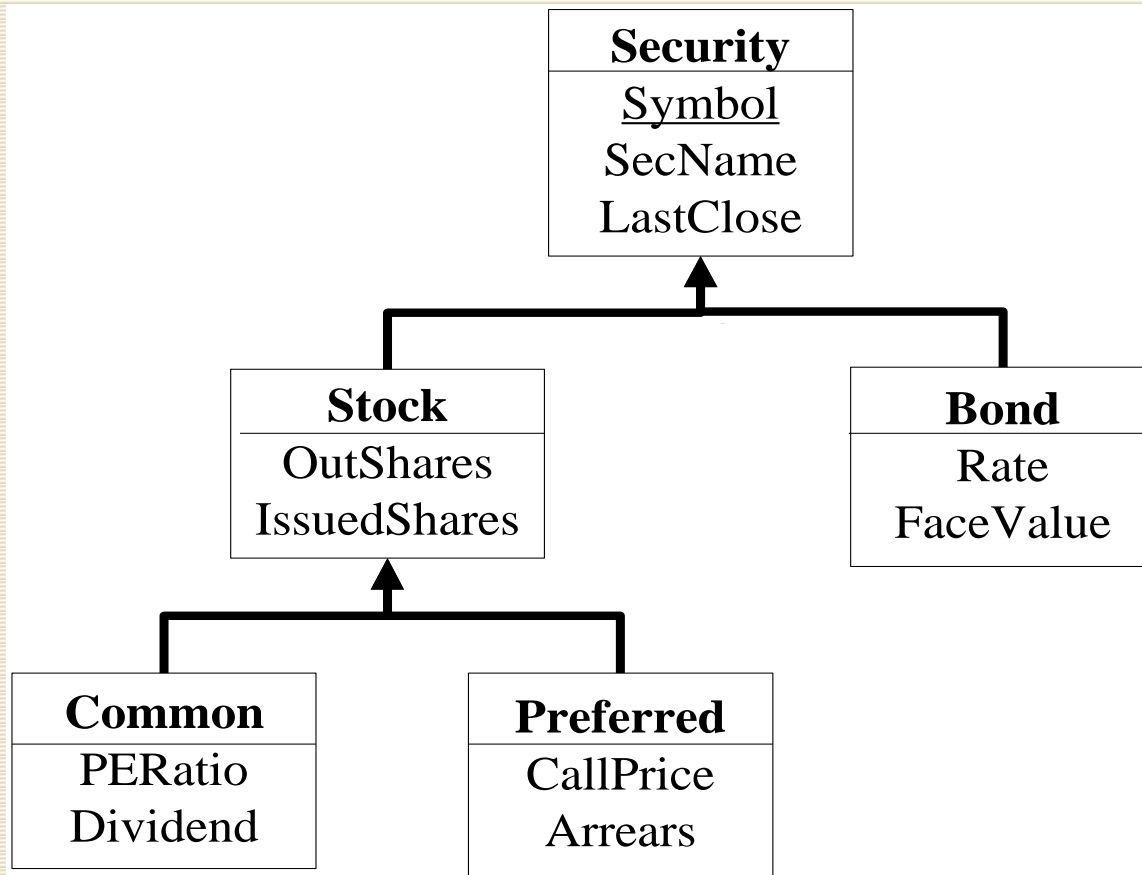
Inheritance

- Subtypes inherit attributes of supertypes (direct and indirect)
- Benefit: Allows abbreviation of attribute list

Implementing Inheritance

- Employee(EmpNo, EmpName, EmpHireDate)
- SalaryEmp(EmpNo, EmpSalary)
 - Foreign Key(EmpNo) References Employee
- HourlyEmp(EmpNo, EmpRate)
 - Foreign Key(EmpNo) References Employee

Multiple Levels of Inheritance



When To Use Inheritance

- When is inheritance appropriate?
- Use the Is-A Test!
- A _____ is a kind of _____
- Example:
 - A SalariedEmployee is a kind of Employee

Implementing Inheritance

Employee				
EmpNo	EmpName	EmpHireDate		
1	Fred	1/1/2001		
2	Ethel	2/2/2002		
3	Greta	3/3/3003		
SalariedEmployee			HourlyEmployee	
EmpNo	EmpSalary		EmpNo	EmpRate
1	50000		2	30
			3	40

Comprehensive Example

