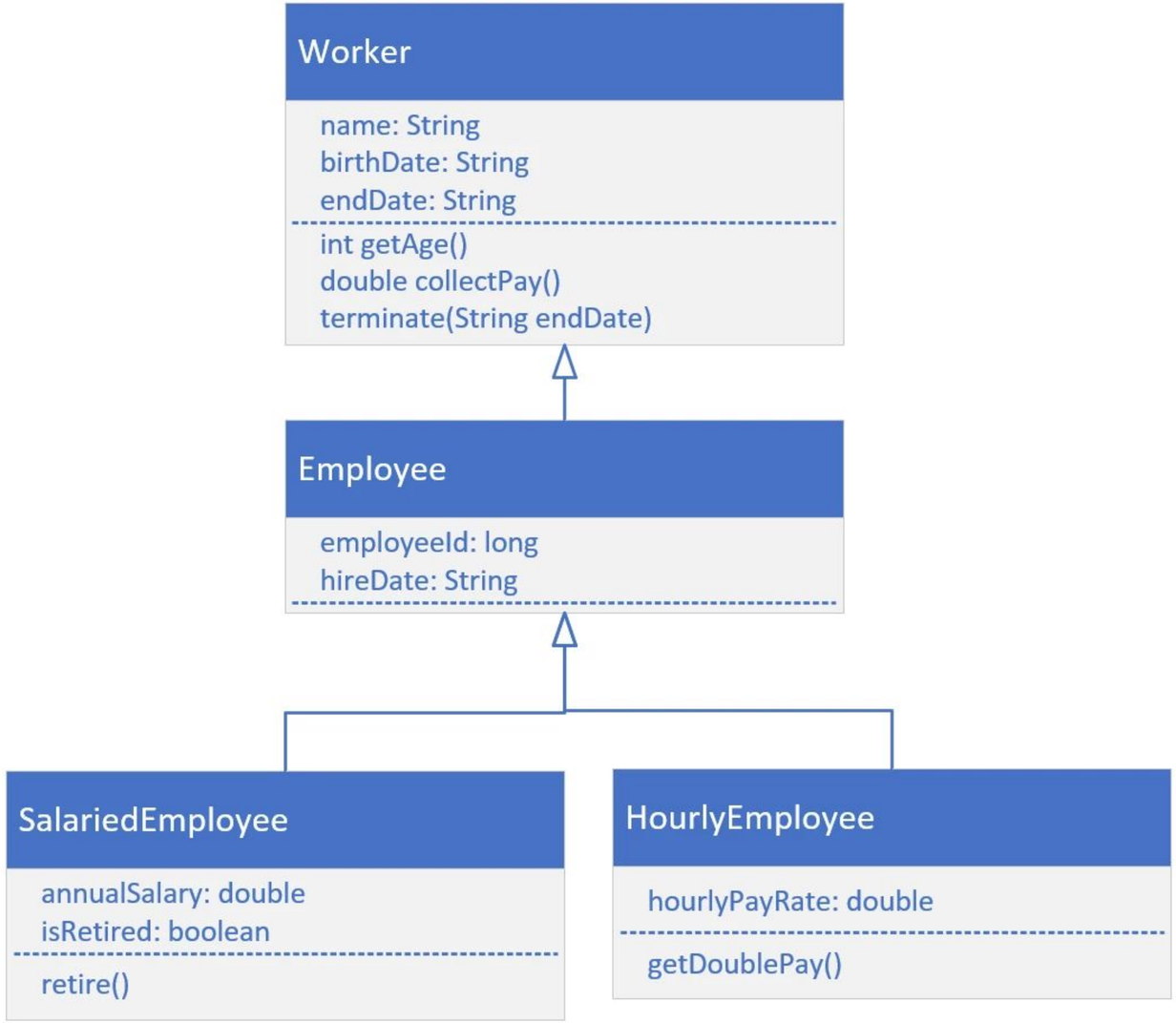
Inheritance Challenge

It's time now for a challenge, to solidify your understanding of what inheritance is.

For this challenge, I'm going to show you a class diagram like we worked with in previous videos.

Inheritance Challenge

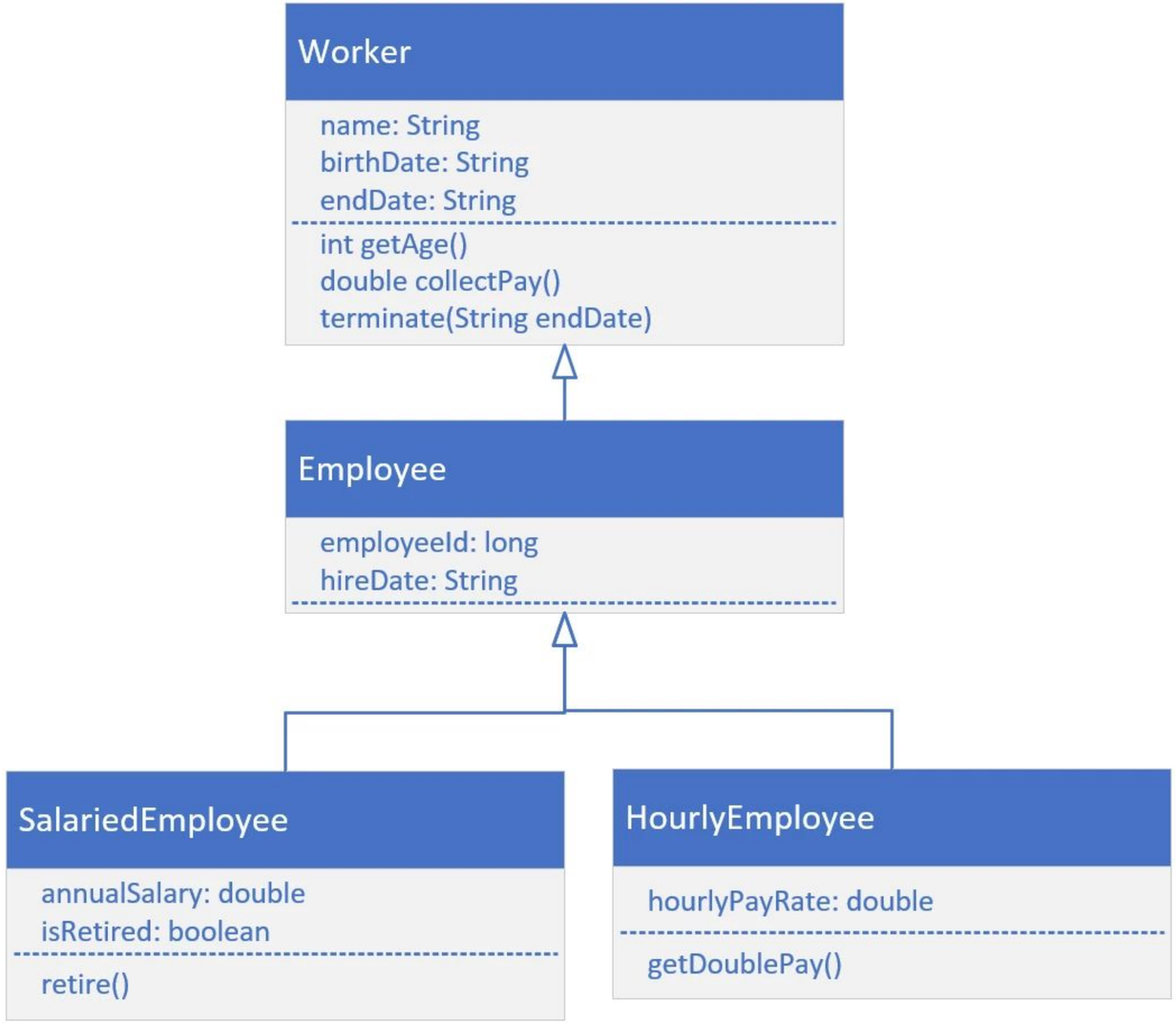


Your challenge is to create the Worker class, the Employee class, and either the SalariedEmployee or the HourlyEmployee class.

For each class, create the attributes and methods shown on this diagram.

Create a main method that will create either a SalariedEmployee or HourlyEmployee, and call the methods, getAge, collectPay, and the method shown for the specific type of class you decide to implement.

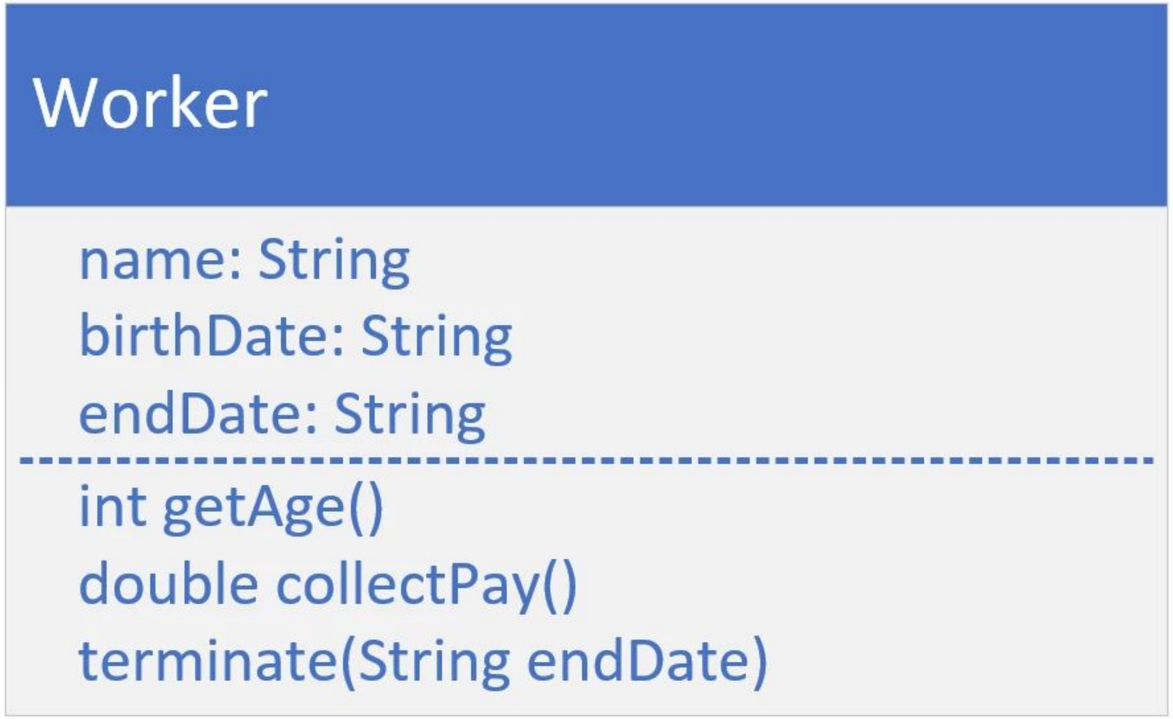
Inheritance Challenge



So, if you implement SalariedEmployee, then execute retire().

If you implement HourlyEmployee, then execute getDoublePay().

Worker class

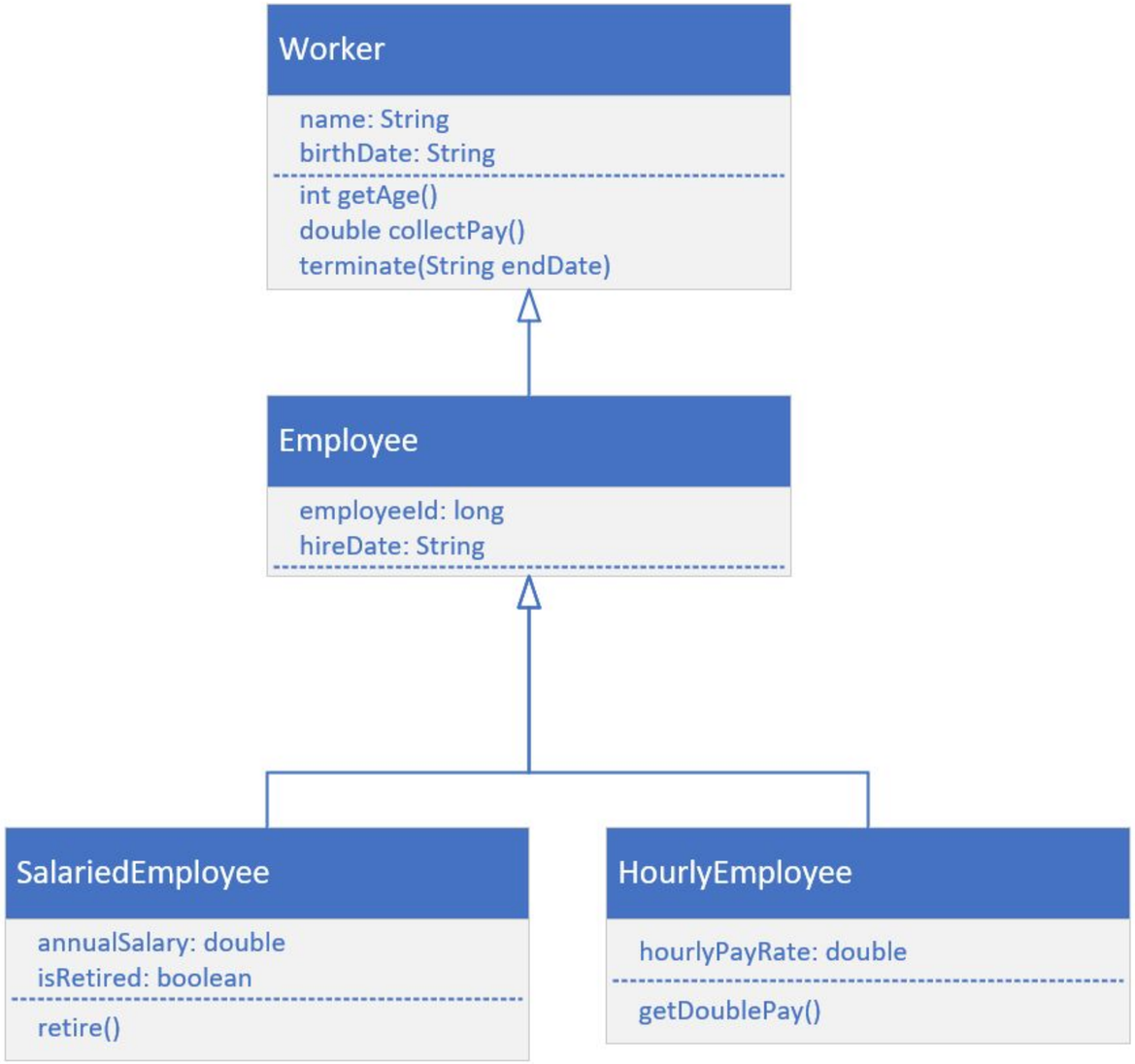


the Employee Class

For this class, I have specific Employee attributes, employeeId, and hireDate.

For simplicity's sake, I haven't included any methods specific to an Employee.

Inheritance Challenge, Continued

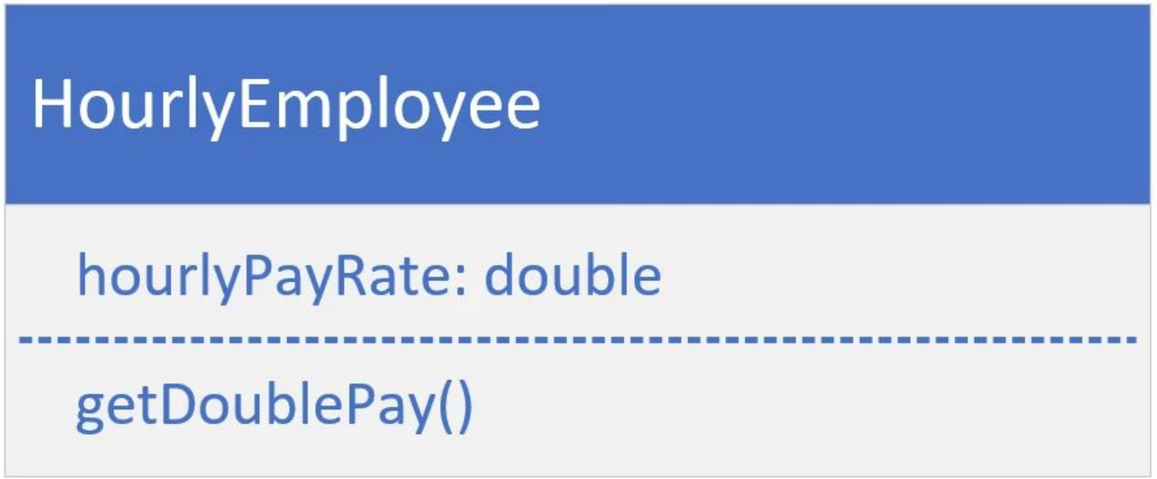


It's time to build a more specific type of Employee, one that's Salaried or one that's Hourly.

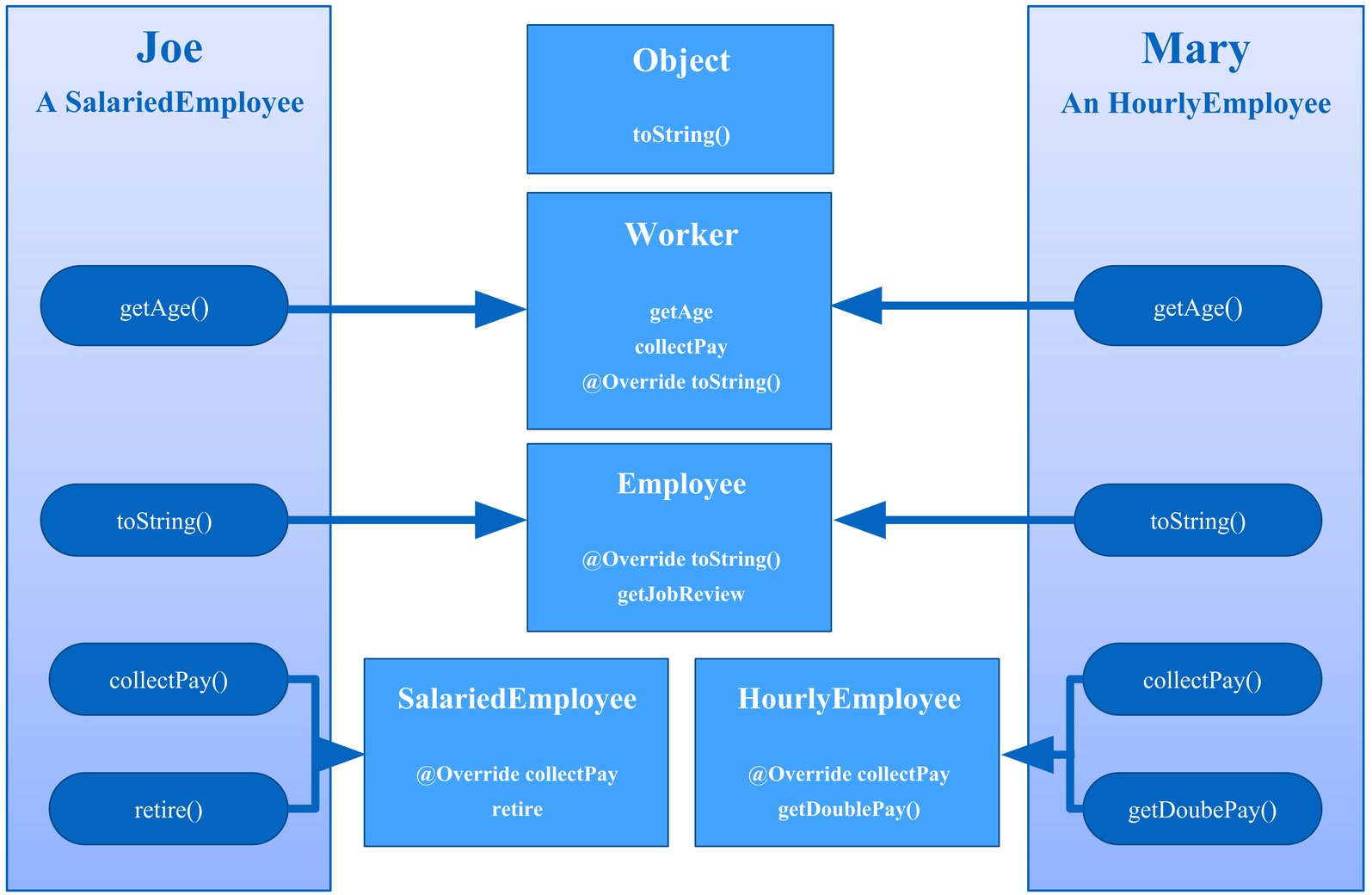
- A salaried employee is paid based on some percentage of his or her annual salary.
- If this person is retired, then the salary may be 100 percent of this amount, but it is generally reduced somewhat.
- An hourly employee is paid by the hours worked and the hourly rate they agreed to work for.
- An hourly employee may also get double pay if they work over a certain number of hours.

SalariedEmployee

HourlyEmployee class



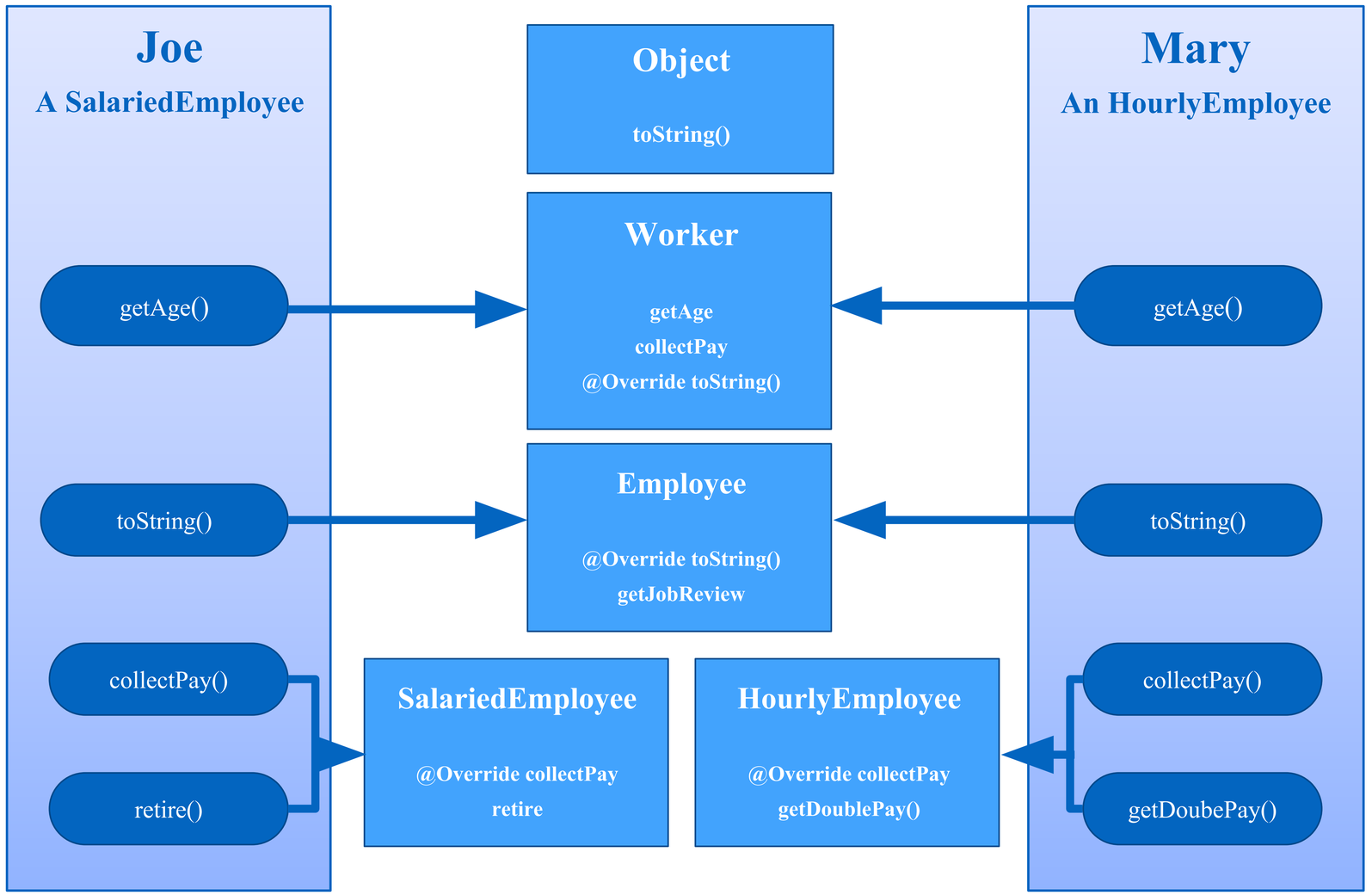
Making the call



Each method call made on these objects points to the code that will actually be executed.

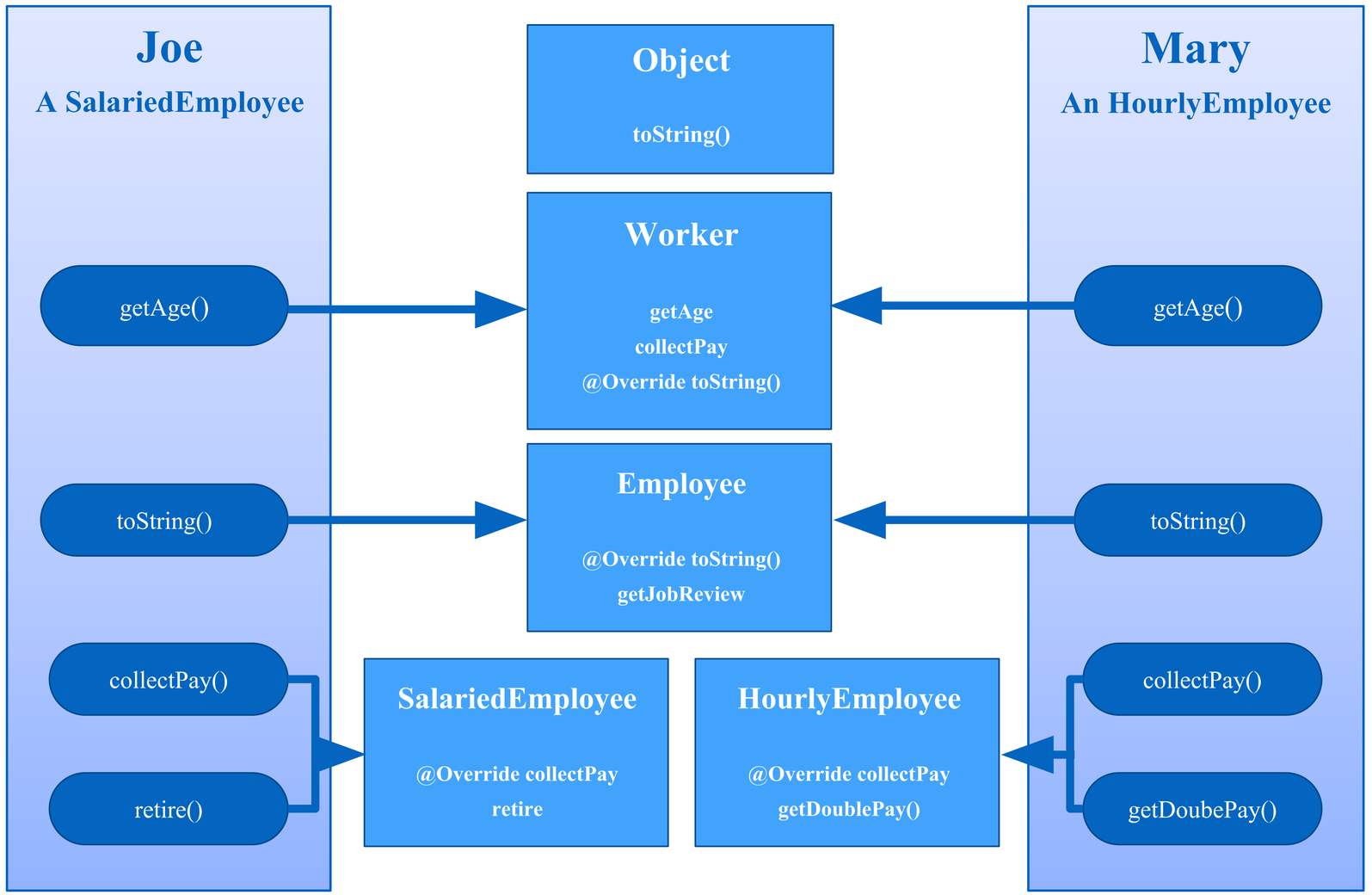
When Joe or Mary call getAge(), the method's implementation is on Worker and is not overridden by any other class, so the getAge method on Worker is executed.

Making the call



When Joe or Mary call toString(), this method has been overridden twice, first by Worker, and then by Employee. But it wasn't overridden by either SalariedEmployee, or HourlyEmployee, so the method from the Employee class is the one that's used.

Making the call

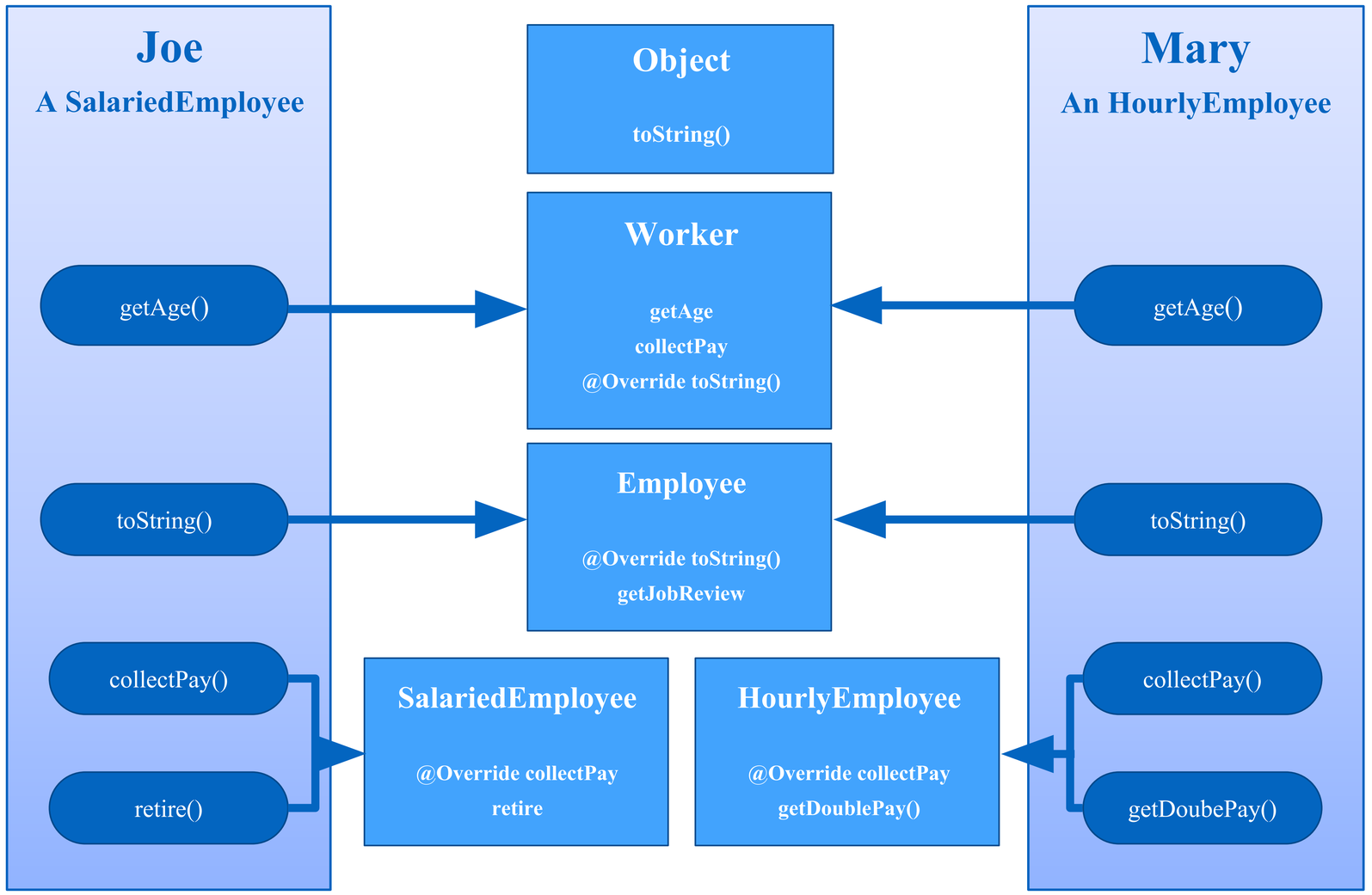


Looking at the **collectPay** method, this method was overridden by both SalariedEmployee, and HourlyEmployee.

Joe will execute the method on SalariedEmployee.

Mary will execute the one on HourlyEmployee.

Making the call



SalariedEmployee has a method, **retire**, that's not overridden, meaning it's only in that class; it's a method specific to a Salaried employee.

HourlyEmployee has its own method, **getDoublePay**, which wouldn't apply to a Salaried employee, so we declared it in this class and not in any super class.