

You are tasked with creating a simple payroll management system for a company. The company has different types of employees, such as full-time employees, part-time employees, and contractors. Each type of employee has a different method of calculating their weekly pay.

1. Full-time employees are paid a fixed salary per week.
2. Part-time employees are paid an hourly rate for the hours they work, with overtime pay (1.5 times the hourly rate) for hours worked beyond 40 hours per week.
3. Contractors are paid a fixed amount per hour worked, with no overtime pay.

Design a C++ program that uses virtual functions and polymorphism to implement the payroll management system. Your program should have the following classes:

- `Employee`: A base class for all types of employees. It should have virtual functions for calculating weekly pay and displaying employee details.
- `FullTimeEmployee`: A derived class from `Employee` representing full-time employees.
- `PartTimeEmployee`: A derived class from `Employee` representing part-time employees.
- `Contractor`: A derived class from `Employee` representing contractors.

Your program should allow the user to input details for each type of employee (e.g., name, hours worked, salary, hourly rate) and then display the weekly pay for each employee.

Ensure that your program demonstrates polymorphic behavior by calling the appropriate `calculatePay()` function for each type of employee using a pointer to the base class `Employee`.

Example Output:

...

Enter details for Full-Time Employee:

Name: John Doe

Salary: 5000

Enter details for Part-Time Employee:

Name: Jane Smith

Hourly Rate: 20

Hours Worked: 45

Enter details for Contractor:

Name: Sam Johnson

Hourly Rate: 30

Hours Worked: 50

Weekly Payroll:

John Doe (Full-Time): \$5000

Jane Smith (Part-Time): \$950 (40 regular hours + 5 overtime hours)

Sam Johnson (Contractor): \$1500