

**Instructions:**

- Create a separate java class file for each class.
- Zip the complete project and submit the .zip file.
- The general rubrics are given below:

Description	Max. Marks
<b>Coding style</b> Use the best practices for writing the code. The code is well organized and very easy to follow.	20%
<b>Logic</b> The student has used effective programming logic for solutions and demonstrated the appropriate concept in the respective task.	60%
<b>Results</b> The program is error-free and generates the expected results as per the specifications.	20%

**Task:**

Create a class named `Employee` that can be used to calculate the salaries of different employees. The `Employee` class should keep a track of the `employee ID`, `name`, `department`, `salary`, and `designation` with appropriate accessor and mutator methods. Also create an `equals()` method that overrides `Object's equals()` method, where employees can check if their designation is identical.

Next, create two additional classes named `Manager` and `Clerk` that are derived from `Employee`. Create an overridden method named `addBonus` that returns the salary of the employee after adding up the bonus. There is a default bonus of \$200/month. Managers have a bonus of \$300/month and clerks have a bonus of \$100/month. Finally, create a `display` method to print the details of the employee. Test your classes from the main method. You may assume the initial salary of an employee and other necessary values.

Now, extend this to calculate the salary deductions based on the number of days an employee is on leave. Consider 20 working days per month. Add an overridden method that calculates the deductions of each employee based on their leave record. In your main method, create an array deduction (of type integer), filled with sample data of all types of Employees. Finally, calculate the total deduction that iterates through the array and returns the total amount of deductions of all the employees in a month.

The following picture shows the sample console output after the execution of the main program.

Employee ID :E001  
Employee name : Mark  
Department name : HR  
Salary :15000.0  
Designation : Manager  
Salary after adding the bonus is : 15300.0

Employee ID :E012  
Employee name : Peter  
Department name : R&D  
Salary :15000.0  
Designation : Manager  
Salary after adding the bonus is : 15300.0

Employee ID :E056  
Employee name : Samual  
Department name : Accounts  
Salary :10000.0  
Designation : Clerk  
Salary after adding the bonus is : 10100.0

Mark and Samual have different Designations

Enter the number of days Employee E001 is Present out of 20 :18  
Enter the number of days Employee E012 is Present out of 20 :17  
Enter the number of days Employee E056 is Present out of 20 :19  
Enter the number of days Employee E089 is Present out of 20 :16

Employee ID	Present	Absent	Deductions
E001	18	2	\$1530.0
E012	17	3	\$2295.0
E056	19	1	\$505.0
E089	16	4	\$2000.0

Total Deductions : 6330.0