

Day 3: Lab assignment on Abstract Class, Interface, ArrayList

Problem#1: An Employee Record System

You need to implement the Employee records of a company. The Company has 3 types of employee;

- 1) Salaried employee-> This type of employees are paid a fixed weekly salary regardless of the number of hours worked.
- 2) Hourly employee -> They are paid by the hour. They have an hourly rate and their payment will depend on how many hours they worked. The more they work, the more they will be paid. So, the salary will be [hour worked per week* hourly rate].
- 3) Commission employee-> They are paid a percentage of their sales. If their percentage is “a” and total weekly sale is ”b”, the total weekly salary will be $[a*b/100]$;

Implement the system, where you can 1) get the weekly salary of any employee, 2) set the rate of each employee. Set rate will do the following

- a. for salaried employee it would set the weekly rate,
- b. for hourly employee it will set the hourly rate and
- c. for commission employee it will set the percentage.

The company also wants option to increase the salary of a particular type of employee by a specific percentage. For all 3 employees, **increase salary feature/functionality will increase the rate not the total salary.**

Note: use Array List to store the list of the employee.

Problem#2: The Payment System

Now we need to implement **the Payment system** for that company. The company wants to handle the **employee** payment and **invoice** in the same application. As Employee and Invoice are totally unrelated objects, we cannot use the same class hierarchy; we have to use an interface called “**Payable**” and implement that in both **Employee** class and **Invoice** class. So, do the following.

- 1) Implement the following **Payable** interface and **Invoice** class.

Payable(interface)	Invoice
double getPayment()	String partNum String partDescription int quantity double pricePerItem Setter/getter for all variables toString() - to display all info

- 2) Update both **Invoice** and **Employee** class and “implements” **Payable** interface. Make necessary code changes.
 - **getPayment()** should display all info of respective class and the total payment.
- 3) Create the application class. In main method **create objects** of **each type of Employees & Invoice** class and call the **getPayment()** method.

What you need to do: (An Employee Record System)

- 2) Create an Employee class and declared it abstract. This will have 2 abstract methods for getting and setting the salary.
- 3) Create 3 sub classes for 3 different types of Employee. All of these classes will extend the Employee class and override/implement the set and get Salary method.
 - a. Set Salary will do the following
 - i. for salaried employee it would set the weekly rate,
 - ii. for hourly employee it will set the hourly rate and
 - iii. for commission employee it will set the percentage.
 - b. Get Salary method will return the total salary for a week.

Note: Create instance variables and methods for each of the class as needed.