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Assignment . 02

Problem statement : Write a program in Java showing hierarchial inheritance with base class as employee and or derived classes or full time employee and Intern employee with methods display salary in base class and calculate salary in derived class . Calculate salary method will calculate as per increment given to full time & intern employees . full time employee - 50% like Intern employee - 25 % . like . Display salary before and after hike.

- Objective : i) To study inheritance in Java.
  ii) To study why to use inheritance.
  iii) To study types of inheritance.

* Theory :

Q.1 What is Inheritance in Java ?
Inheritance is a mechanism in Java by which one class acquires the properties and methods of another class. It helps in code reusability method overriding establishing an is-a relationship between classes..

Inheritance is implemented using the extends keywords.

Q.2. Why to use inheritance ?
i) Code Reusability : reuse existing code without rewriting it.

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ii) Reduce Redundancy : avoids dupliation of codes.
iii) Method Overriding : Allows a subclass to provide specific implementation of a parent class.
iv) Easy maintainence : ~~clear~~ changes in parent class automatically reflect in child class.
v) Better code Organization : represents real world relationship clearly.

Q3. Types of Inheritance :

1) Single inheritance : One child class inherits on parent class (class B extends class A).
2) Multilevel Inheritance : A class is derived from another derived class.
3) Hierarchical ~~Inh~~ Inheritance : Multiple child classes inherits from a single parent class.
(class B , extends A , class C , extends A).

Algorithm :

class Employee.
declare Salary.
method Display Salary ()
print "~~Sa~~ Salary" = , salary.
end method.
end class.

class FT . I Employee inherits Employee.
method calculate Salary ()
print " Salary before hike " = salary.
Salary = Salary + (salary * 0.25)
Print " Salary after 25 % hike = ", Salary)

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end bike.

main () {
Create object ft of Employee
set ft.salary = basic salary value.
Call ft. Display salary ()
Create & object intern of IEmployee.
set intern.salary = basic salary value.
Call intern. Display Salary ()
Call intern. Calculate Salay ().
end main.

Conclusion : Thus, we have succesfully implemented usage of inheritance in Java.

FAQ's :

Q.1 Is multiple Inheritance supported in Java?

Ans. A relationship represents inheritance in Java It means that a subclass is a type of its superclass.
A dog is an animal a student is a person
In Java the Is A relationship is achieved using extends or implements keywords.

Q2 Are constructor & instance initialization block inherited to subclass?

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No. constructors & instance initialization blocks are not inherited by a class.

* Constructor are used to initialize the current class only.

* Instance initialization blocks belong to the class which they are defined.

However, the constructor of the superclass is invoked when a subclass object is created using super().