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Hands-on Assignments for **Inheritance**

**Create a class named 'Animal' which includes methods like eat() and sleep().**

**Create a child class of Animal named 'Bird' and override the parent class methods. Add a new met named fly().**

**Create an instance of Animal class and invoke the eat and sleep methods using this object. Create an instance of Bird class and invoke the eat, sleep and fly methods using this object**.

// Parent class class Animal {

public void eat() {

System.out.println("Animal is eating...");

}

public void sleep() {

System.out.println("Animal is sleeping...");

}

}

// Child class

class Bird extends Animal {

// Overriding eat method public void eat() {

System.out.println("Bird is pecking grains...");

}

public void sleep() {

System.out.println("Bird is sleeping in its nest...");

}

public void fly() {

System.out.println("Bird is flying high in the sky...");

}

}

public class Main {

public static void main(String[] args) { Animal animal = new Animal(); animal.eat();

animal.sleep(); System.out.println();

// Create Bird object Bird bird = new Bird(); bird.eat();

bird.sleep();

bird.fly();

}

}

**Output:**

Animal is eating... Animal is sleeping...

Bird is pecking grains... Bird is sleeping in its nest...

Bird is flying high in the sky...

**Create a class called Person with a member variable name. Save it in a file called Person.java**

**Create a class called Employee that will inherit the Person class. The other data members of the mployee class are annual salary (double), the year the employee started to work, and the national nsurance number which is a String. Save this in a file called Employee.java**

**our class should have the necessary constructors and getter/setter methods.**

**rite another class called TestEmployee, containing a main method to fully test your class efinition.**

# Person.java

public class Person { private String name;

public Person(String name) { this.name = name;

}

public String getName() { return name;

}

public void setName(String name) { this.name = name;

}

}

# Employee.java

public class Employee extends Person { private double annualSalary;

private int yearStarted;

private String nationalInsuranceNumber;

public Employee(String name, double annualSalary, int yearStarted, String nationalInsuranceNumber) {

super(name); // Call Person constructor this.annualSalary = annualSalary;

this.yearStarted = yearStarted;

this.nationalInsuranceNumber = nationalInsuranceNumber;

}

public double getAnnualSalary() { return annualSalary;

}

public void setAnnualSalary(double annualSalary) { this.annualSalary = annualSalary;

}

public int getYearStarted() { return yearStarted;

}

public void setYearStarted(int yearStarted) { this.yearStarted = yearStarted;

}

public String getNationalInsuranceNumber() { return nationalInsuranceNumber;

}

public void setNationalInsuranceNumber(String nationalInsuranceNumber) { this.nationalInsuranceNumber = nationalInsuranceNumber;

}

}

# TestEmployee.java

public class TestEmployee {

public static void main(String[] args) {

Employee emp = new Employee("John Doe", 55000.0, 2015, "AB123456C");

// Display details

System.out.println("Name: " + emp.getName());

System.out.println("Annual Salary: $" + emp.getAnnualSalary()); System.out.println("Year Started: " + emp.getYearStarted());

System.out.println("National Insurance Number: " + emp.getNationalInsuranceNumber());

emp.setAnnualSalary(60000.0); emp.setYearStarted(2018);

emp.setNationalInsuranceNumber("XY987654Z");

System.out.println("\n--- After Updates ---"); System.out.println("Name: " + emp.getName());

System.out.println("Annual Salary: $" + emp.getAnnualSalary()); System.out.println("Year Started: " + emp.getYearStarted());

System.out.println("National Insurance Number: " + emp.getNationalInsuranceNumber());

}

}

# Output

Enter employee name: John Doe Enter annual salary: 55000 Enter year started: 2015

Enter National Insurance Number: AB123456C

--- Employee Details --- Name: John Doe

Annual Salary: $55000.0 Year Started: 2015

National Insurance Number: AB123456C