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Java Lab

Assignment 7

1. Create a class “Vehicle” with a method “start()” that prints “Vehicle started”. Create a subclass “Car” that extends “Vehicle” and overrides the “start()” method to print “Car started”. Create an object of the “Vehicle” class and call the “start()” method. Create an object of the “Car” class and call the “start()” method.

2. Create a class “Person” with fields “name” and “age” and a method “display()” that prints the name and age of the person. Create a subclass “Employee” that extends “Person” and adds a field “salary” and a method “display()” that prints the name, age, and salary of the employee. Create an object of the “Person” class and call the “display()” method. Create an object of the `Employee` class and call the “display()” method.

3. Create a class “Shape” with a method “getArea()” that returns the area of the shape. Create a subclass “Rectangle” that extends “Shape” and adds fields “length” and “width” and overrides the “getArea()” method to return the area of the rectangle. Create an object of the “Shape” class and call the “getArea()” method. Create an object of the “Rectangle” class and call the “getArea()” method.

4. Create a class “Animal” with a method “makeSound()” that prints a sound. Create a subclass “Dog” that extends “Animal” and overrides the “makeSound()” method to print “Woof!”. Create an object of the “Animal” class and call the “makeSound()” method. Create an object of the “Dog” class and call the “makeSound()” method.

5. Create a class “BankAccount” with fields “accountNumber”, “balance”, and “interestRate” and a method “deposit()” that adds an amount to the balance. Create a subclass “SavingsAccount” that extends “BankAccount” and adds a field “minimumBalance” and a method “withdraw()” that subtracts an amount from the balance. Create an object of the “BankAccount” class and call the “deposit()” method. Create an object of the “SavingsAccount” class and call the “deposit()” and “withdraw()” methods.

6. Create a class “Person” with fields “name” and “age” and a method “display()” that prints the name and age of the person. Create a subclass “Employee” that extends “Person” and adds a field “salary” and a method “display()” that prints the name, age, and salary of the employee. Create a subclass “Manager” that extends “Employee” and adds a field “department” and a method “display()” that prints the name, age, salary, and department of the manager. Create an object of the “Person” class and call the “display()” method. Create an object of the “Employee” class and call the “display()” method. Create an object of the “Manager” class and call the “display()” method.

7. Create a class “Shape” with a method “calculateArea()” that calculates and returns the area of the shape. Create two subclasses “Rectangle” and “Triangle” that extend “Shape” and implement the “calculateArea()” method.