**Exercise No:1**

**package** OopsBasicTask;

**public** **class** Vehicle {

**void** start() {

System.***out***.println("Vehicle is starting");

}

**void** stop() {

System.***out***.println("Vehicle is stopping");

}

}

**class** Truck **extends** Vehicle {

**void** loadCargo() {

System.***out***.println("Truck is loading cargo");

}

}

**class** Bus **extends** Vehicle {

**void** pickPassengers() {

System.***out***.println("Bus is picking up passengers");

}

}

**class** Car **extends** Vehicle {

**void** playMusic() {

System.***out***.println("Car is playing music");

}

}

**class** Road {

**public** **static** **void** main(String[] args) {

Truck truck = **new** Truck();

Bus bus = **new** Bus();

Car car = **new** Car();

truck.start();

truck.loadCargo();

truck.stop();

bus.start();

bus.pickPassengers();

bus.stop();

car.start();

car.playMusic();

car.stop();

}

}

**OUTPUT:**

***Exercise No:2***

**package** OopsBasicTask;

**class** Animal {

**void** eat() {

System.***out***.println("Eating...");

}

}

**class** Dog **extends** Animal {

**void** bark() {

System.***out***.println("Barking...");

}

}

**public** **class** SingleInheritance {

**public** **static** **void** main(String[] args) {

Dog dog = **new** Dog();

dog.eat();

dog.bark();

}

}

**OUTPUT:**

A screenshot of a computer

Description automatically generated

***Exercise No:3***

**package** OopsBasicTask;

**class** Animal1 {

**void** eat() {

System.***out***.println("Eating...");

}

}

**class** Mammal **extends** Animal1 {

**void** walk() {

System.***out***.println("Walking...");

}

}

**class** Dog1 **extends** Mammal {

**void** bark() {

System.***out***.println("Barking...");

}

}

**public** **class** MultilevelInheritance {

**public** **static** **void** main(String[] args) {

Dog1 dog = **new** Dog1();

dog.eat();

dog.walk(); // Ensure the walk method is defined in Mammal class

dog.bark();

}

}

**OUTPUT:**

A screenshot of a computer

Description automatically generated

***Exercise No:4***

**package** OopsBasicTask;

**class** Member {

String name;

**int** age;

String phoneNumber;

String address;

**double** salary;

**void** printSalary() {

System.***out***.println("Salary: " + salary);

}

}

**class** Employee **extends** Member {

String specialization;

}

**class** Manager **extends** Member {

String department;

}

**public** **class** InheritanceExample {

**public** **static** **void** main(String[] args) {

Employee employee = **new** Employee();

employee.name = "Thilak";

employee.age = 22;

employee.phoneNumber = "9876543210";

employee.address = "Hyderabad";

employee.salary = 50000;

employee.specialization = "Software Engineering";

Manager manager = **new** Manager();

manager.name = "Cognizant Manager";

manager.age = 35;

manager.phoneNumber = "0987654321";

manager.address = "Raheja Mindspace,Hyderabad";

manager.salary = 70000;

manager.department = "IT";

System.***out***.println("Employee details:");

System.***out***.println("Name: " + employee.name);

System.***out***.println("Age: " + employee.age);

System.***out***.println("Phone Number: " + employee.phoneNumber);

System.***out***.println("Address: " + employee.address);

employee.printSalary();

System.***out***.println("Specialization: " + employee.specialization);

System.***out***.println("\nManager details:");

System.***out***.println("Name: " + manager.name);

System.***out***.println("Age: " + manager.age);

System.***out***.println("Phone Number: " + manager.phoneNumber);

System.***out***.println("Address: " + manager.address);

manager.printSalary();

System.***out***.println("Department: " + manager.department);

}

}

**OUTPUT:**

A screenshot of a computer

Description automatically generated