1) Calculator

```java
public class Calculator {
    public static float average(float n1, float n2, float n3) {
        return (n1 + n2 + n3) / 3;
    }

    public static float average(float n1, float n2, float n3, float n4) {
        return (n1 + n2 + n3 + n4) / 4;
    }

    public static float average(float n1, float n2, float n3, float n4, float n5) {
        return (n1 + n2 + n3 + n4 + n5) / 5;
    }

    public static void printer(float val) {
        System.out.format(format: "%.2f\n", val);
    }

    Run | Debug
    public static void main(String[] args) {
        printer(average(n1: 1.1f, n2: 2.2f, n3: 3.3f));
        printer(average(n1: 1.1f, n2: 2.2f, n3: 3.3f, n4: 4.4f));
        printer(average(n1: 1.1f, n2: 2.2f, n3: 3.3f, n4: 4.4f, n5: 5.5f));
    }

}
```

Output

```
C:\Users\swair\Downloads\Antwalk Assignments-20230128T145550Z-001\Antwalk Assignments> & 'C:\Program Files\Java\jdk-16.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\swair\AppData\Roaming\Code\User\workspaceStorage\6447842b34a9cd3b1c22f1971829a276\redhat.java\jdt_ws\Antwalk Assignments_fc3a473c\bin' 'day4.Calculator'
2.20
2.75
3.30
```

2) Vehicle Class

```java
public class Vehicle {
    private String color;
    private int noOfWheels;
    private String model;

    public Vehicle(String color, int noOfWheels, String model) {
        this.color = color;
        this.noOfWheels = noOfWheels;
        this.model = model;
    }

    public String getColor() {
        return color;
    }

    public void setColor(String color) {
        this.color = color;
    }

    public int getNoOfWheels() {
        return noOfWheels;
    }

    public void setNoOfWheels(int noOfWheels) {
        this.noOfWheels = noOfWheels;
    }

    public String getModel() {
        return model;
    }

    public void setModel(String model) {
        this.model = model;
    }

    public void display() {
        System.out.println("Color : " + this.getColor());
        System.out.println("No of Wheels : " + this.getNoOfWheels());
        System.out.println("Model : " + this.getModel());
    }

}
```

Truck Class

```java
public class Truck extends Vehicle {
    private int weightOfLoad;

    public Truck(String color, int noOfWheels, String model, int weightOfLoad) {
        super(color, noOfWheels, model);
        this.weightOfLoad = weightOfLoad;
    }

    public int getWeightOfLoad() {
        return weightOfLoad;
    }

    public void setWeightOfLoad(int weightOfLoad) {
        this.weightOfLoad = weightOfLoad;
    }


}
```

Bus Class

```java
public class Bus extends Vehicle{
    private int noOfPassengers;

    public Bus(String color, int noOfWheels, String model, int noOfPassengers) {
        super(color, noOfWheels, model);
        this.noOfPassengers = noOfPassengers;
    }

    public void setNoOfPassengers(int noOfPassengers) {
        this.noOfPassengers = noOfPassengers;
    }

    public int getNoOfPassengers() {
        return noOfPassengers;
    }


}
```

Road Class

```
public class Road {

    Run | Debug
    public static void main(String[] args) {
        Truck truck = new Truck(color: "Brown", noOfWheels: 8, model: "Mahindra", weightOfLoad: 20000);
        Bus bus = new Bus(color: "Blue", noOfWheels: 6, model: "Volvo", noOfPassengers: 60);
        Car car = new Car(color: "Red", noOfWheels: 4, model: "Ferrari", type: "Sports Car");

        System.out.println(x: "Truck Details : ");
        truck.display();
        System.out.println("Load Weight : " + truck.getWeightOfLoad());

        System.out.println();

        System.out.println(x: "Bus Details : ");
        bus.display();
        System.out.println("No of passengers : " + bus.getNoOfWheels());

        System.out.println();

        System.out.println(x: "Car Details : ");
        car.display();
        System.out.println("Type of Car : " + car.getType());
    }

}
```

Car Class

```
public class Car extends Vehicle{
    private String type;

    public Car(String color, int noOfWheels, String model, String type) {
        super(color, noOfWheels, model);
        this.type = type;
    }

    public String getType() {
        return type;
    }

    public void setType(String type) {
        this.type = type;
    }


}
```

Output:

```
C:\Users\swair\Downloads\Antwalk Assignments-20230128T145550Z-001\Antwalk Assignments> & 'C:\Program Files\Java\jdk-16.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\swair\AppData\Roaming\Code\User\workspaceStorage\6447842b34a9cd3b1c22f1971829a276\redhat.java\jdt_ws\Antwalk Assignments_fc3a473c\bin' 'day4.Road'
Truck Details :
Color : Brown
No of Wheels : 8
Model : Mahindra
Load Weight : 20000

Bus Details :
Color : Blue
No of Wheels : 6
Model : Volvo
No of passengers : 6

Car Details :
Color : Red
No of Wheels : 4
Model : Ferrari
Type of Car : Sports Car
```

3) Inventory Class

```java
package stock;

public class Inventory {
    private static int quantity;
    private static int lowOrderLevelQuantity;
    private int uid;

    public Inventory(int uid) {
        this.uid = uid;
    }

    public int getQuantity() {
        return quantity;
    }

    public void setQuantity(int quantity) {
        Inventory.quantity = quantity;
    }

    public int getLowOrderLevelQuantity() {
        return lowOrderLevelQuantity;
    }

    public void setLowOrderLevelQuantity(int lowOrderLevelQuantity) {
        Inventory.lowOrderLevelQuantity = lowOrderLevelQuantity;
    }

    public int getUid() {
        return uid;
    }

    public void setUid(int uid) {
        this.uid = uid;
    }

}
```

Laptops Class

```java
package material;

import stock.Inventory;

public class Laptops extends Inventory {
    private String company;

    public Laptops(int uid, String company) {
        super(uid);
        this.company = company;

        // setQuantity(5);
        setLowOrderLevelQuantity(lowOrderLevelQuantity: 3);
    }

    public String getCompany() {
        return company;
    }

    public void setCompany(String company) {
        this.company = company;
    }

}
```

Accessories Class

```java
package material;

import stock.Inventory;

public class Accessories extends Inventory {
    private String type;

    public Accessories(int uid, String type) {
        super(uid);
        this.type = type;

        // setQuantity(10);
        setLowOrderLevelQuantity(lowOrderLevelQuantity: 5);
    }

    public String getType() {
        return type;
    }

    public void setType(String type) {
        this.type = type;
    }

}
```

Order Class

```java
import java.util.Scanner;
import material.*;

public class Order {
    public static void generateInvoice(int n, String type) {
        System.out.println("Invoice generated for " + n + " " + type);
    }

    Run | Debug
    public static void main(String[] args) {
        Laptops[] l = new Laptops[5];
        String company[] = new String[] { "Dell", "HP", "Apple", "Microsoft", "Asus" };
        for (int i = 0; i < 5; i++) {
            l[i] = new Laptops(i, company[i]);
            l[i].setQuantity(l[i].getQuantity() + 1);
        }
        Accessories a[] = new Accessories[10];
        String[] type = new String[] { "Headphones", "Charger", "Lamp", "Connector", "Stylus", "Mouse", "Keyboard",
                "Pendrive", "CD", "Lamp" };
        for (int i = 0; i < 10; i++) {
            a[i] = new Accessories(i * 100, type[i]);
            a[i].setQuantity(a[i].getQuantity() + 1);
        }

        Scanner in = new Scanner(System.in);
        System.out.println(x: "What do you want to order ? Enter 1 for Laptops or 2 for Accessories?");
        int o = Integer.parseInt(in.nextLine());
        System.out.println(x: "How many do you want to order?");
        int num = Integer.parseInt(in.nextLine());
        if (o == 1) {
            if (num < l[0].getLowOrderLevelQuantity()) {
                System.out.println(x: "RFM");
            } else if (num < l[0].getQuantity()) {
                System.out.println(x: "Not enough left in inventory");
            } else {
                generateInvoice(num, type: "laptops");
            }
        } else if (o == 2) {
            if (num < a[0].getLowOrderLevelQuantity()) {
                System.out.println(x: "RFM");
            } else if (num < a[0].getQuantity()) {
                System.out.println(x: "Not enough left in inventory");
            } else {
                generateInvoice(num, type: "accessories");
            }
        } else {
            System.out.println(x: "WRONG INPUT!!!");
        }
        in.close();
    }
}
```

Output

```
oading, Overriding\Assignment 1\Qsn 3 - Inventory'; & 'C:\Program Files\Java\jdk-16.0.2\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\swair\AppData\Roaming\Code\User\workspaceStorage\3280aa
8708a958d800e18f93176e9b0\redhat.java\jdt_ws\Qsn 3 - Inventory_99a9d096\bin' 'stock.Order' iding\Assignment 1\Qsn 3 - Inventory>
What do you want to order ? Enter 1 for Laptops or 2 for Accessories?
1
How many do you want to order?
2
RFM
```