2.Write a java program code how to implement deserialization concept for given class Product object, has fields id, name, category and price.

import java.io.\*;

class Product implements Serializable {

private static final long serialVersionUID = 1L;

private int id;

private String name;

private String category;

private double price;

public Product(int id, String name, String category, double price) {

this.id = id;

this.name = name;

this.category = category;

this.price = price;

}

public int getId() {

return id;

}

public String getName() {

return name;

}

public String getCategory() {

return category;

}

public double getPrice() {

return price;

}

}

public class Main {

public static void main(String[] args) {

serializeProduct();

Product deserializedProduct = deserializeProduct();

System.out.println("Deserialized Product:");

System.out.println("ID: " + deserializedProduct.getId());

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

System.out.println("Category: " + deserializedProduct.getCategory());

System.out.println("Price: " + deserializedProduct.getPrice());

}

private static void serializeProduct() {

try {

Product product = new Product(1, "Laptop", "Electronics", 999.99);

FileOutputStream fileOut = new FileOutputStream("product.ser");

ObjectOutputStream out = new ObjectOutputStream(fileOut);

out.writeObject(product);

out.close();

fileOut.close();

System.out.println("Product object serialized successfully.");

} catch (IOException e) {

e.printStackTrace();

}

}

private static Product deserializeProduct() {

try {

FileInputStream fileIn = new FileInputStream("product.ser");

ObjectInputStream in = new ObjectInputStream(fileIn);

Product product = (Product) in.readObject();

in.close();

fileIn.close();

return product;

} catch (IOException | ClassNotFoundException e) {

e.printStackTrace();

return null;

}

}

}