Exercise 1a

Problem Statement: Let us analyze the situation as you went to a super market and ordered some thing. After the purchase, the cashier summarized the amount and you have not so much of amount at that time. But you can take it from an ATM counter (I am saying a situation where credit/debit card payments not possible. Only ready cash want to be paid.). So you just leave the shop for taking the money and the shopkeeper want to keep your bill as a pending one and should deal with the billing of other customers. So keeping a bill or any thing as a pending one is a serious issue and will slow the process. You can keep the items in memory and can also easily forget them when a power failure occurred. So every thing should be persists in a file form is the best option.

Saving an object state (in file) is termed as serialization and from the saved format regain the object's state is known as deserialization.

So,shopkeeper will save the particular bill item in a serialized form and then deserialize it for later use.

Program:

Customer.java

```
package JavaFS;

import java.io.*;

//Java code for serialization and deserialization

//of a Java object

public class Customer implements Serializable {

private static final long serialversionUID =

129348938L;

transient int a;

static int b;

String name;

String address;

String phone_no;

String product;

double price;
```

```
// Default constructor
public Customer(String name, String address, String phone_no, String product,double d)
{
this.name = name;
this.address = address;
this.phone_no = phone_no;
this.product = product;
this.price = d;
}
}
```

SeriableExample.java

```
package JavaFS;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.ObjectInputStream;
import java.io.ObjectOutputStream;
import java.util.Scanner;

public class SeriableExample {
public static void printdata(Customer object1)
        {

                System.out.println("name = " + object1.name);
                System.out.println("address = " + object1.address);
```

```
            System.out.println("phone_no = " + object1.phone_no);
            System.out.println("product = " + object1.product);
            System.out.println("price = " + object1.price);

        }

public static void main(String[] args)
        {

        Scanner sc= new Scanner(System.in); //System.in is a standard input stream.
        System.out.print("Enter the details: ");
        System.out.println("Enter Customer name");
        String cname= sc.nextLine();
        System.out.println("Address");
        String city=sc.nextLine();
        System.out.println("Enter Phone number");
        String phno=sc.nextLine();
        System.out.println("Enter the number of items:");
        int n=sc.nextInt();
        String products[]=new String[n];
        double product_price[]=new double[n];
        System.out.println("Enter Product details");
        for(int i=0;i<n;i++)
        {
            System.out.println("Enter Product"+(i+1));
```

```
                String items=sc.next();
            products[i]=items;
        }

System.out.println("Enter Price");
for(int i=0;i<n;i++)
        {
                System.out.println("Enter Price"+(i+1));
                product_price[i]=sc.nextDouble();
        }
String product=products[0];
for(int i=1;i<n;i++)
        {

        product=product+","+products[i];
        }
double total_price=0;
for(int i=0;i<n;i++)
        {
                total_price=total_price+product_price[i];
        }

        Customer object = new Customer(cname, city, phno, product,total_price);
                String filename = "E:\\Presidency\\Java FS\\exercises\\customer.txt";
```

```
// Serialization
try {

        // Saving of object in a file
        FileOutputStream file = new FileOutputStream
                                                        (filename);
        ObjectOutputStream out = new ObjectOutputStream
                                                        (file);

        // Method for serialization of object
        out.writeObject(object);

        out.close();
        file.close();

        System.out.println("Object has been serialized\n"
                                        + "Data before Deserialization.");
        printdata(object);

        // value of static variable changed
        object.b = 2000;
}

catch (IOException ex) {
        System.out.println("IOException is caught");
```

```
}

object = null;

// Deserialization
try {

        // Reading the object from a file
        FileInputStream file = new FileInputStream
                                                        (filename);
        ObjectInputStream in = new ObjectInputStream
                                                        (file);

        // Method for deserialization of object
        object = (Customer)in.readObject();

        in.close();
        file.close();
        System.out.println("Object has been deserialized\n"
                                                + "Data after Deserialization.");
        printdata(object);

        // System.out.println("z = " + object1.z);
}
```

```
            catch (IOException ex) {
                System.out.println("IOException is caught");
            }

            catch (ClassNotFoundException ex) {
                System.out.println("ClassNotFoundException" +
                                                    " is caught");
            }
        }
}
```