

Code & Sample I/O

Vaccine Class

```
import java.io.*;
import java.util.*;
class Vaccine implements Serializable{
    int dose;
    String company;

    Vaccine(int newDose, String newCompany){
        dose = newDose;
        company = newCompany;
    }

    Vaccine(String newCompany){
        dose = 1;
        company = newCompany;
    }

    int getDose(){
        return dose;
    }
    void setDose(int doseNumber){
        dose = doseNumber;
    }
    String getCompany(){
        return company;
    }
    void setCompany(String newCompany){
        company = newCompany;
    }

    public static void main(String args[]){
        Scanner in = new Scanner(System.in);
        System.out.println("Adding new vaccine to Resources");
        System.out.println("Enter 1 for first dose, 2 for second dose");
        int dose = in.nextInt();
        System.out.println("Enter name of Manufacturing Company");
        String company = in.next();
        try{
            Vaccine vaccine1 = new Vaccine(dose, company);
            FileOutputStream fout = new FileOutputStream("vaccines.txt");
            ObjectOutputStream out = new ObjectOutputStream(fout);
            out.writeObject(vaccine1);
            out.flush();
            out.close();
            System.out.println("Success");
        }catch(Exception e){System.out.println(e);}
    }
}
```

Hospital Class

```
import java.io.*;
import java.util.*;
class Hospital {
    static List <Vaccine> vaccines = new ArrayList<>();
    static List <OxygenCylinder> oxygenCylinders = new ArrayList<>();
    Hospital(List<Vaccine> vaccines, List<OxygenCylinder> oxygenCylinders) {
        vaccines = vaccines;
        oxygenCylinders = oxygenCylinders;
    }
    List<Vaccine> getListOfVaccines(){
        return vaccines;
    }
    List<OxygenCylinder> getListOfOxygenCylinders(){
        return oxygenCylinders;
    }

    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);

        System.out.println("Vaccine is already available in directory");

        try{
            ObjectInputStream in1 =new ObjectInputStream(new FileInputStream("vaccines.txt"));
            Vaccine s=(Vaccine)in1.readObject();
            System.out.println("Dose of Vaccine: "+s.dose);
            System.out.println("Company of Vaccine: "+s.company);
            in1.close();
        } catch(Exception e){System.out.println(e);}

        System.out.println("Enter number of vaccines to add: ");
        int n = sc.nextInt();
        for(int i = 0; i<n;i++){
            System.out.println("Enter details for Vaccine "+(i+1));
            System.out.println("Enter 1 for first dose, 2 for second dose");
            int temp1 = sc.nextInt();
            System.out.println("Enter name of Vaccine");
            String temp2 = sc.next();
            Vaccine v1 = new Vaccine(temp1, temp2);
            vaccines.add(v1);
            System.out.println(v1+" added successfully!");
        }
        int covishield1=0;
        int covishield2=0;
        int covaxin1=0;
        int covaxin2=0;
        for(int i=0; i<n; i++){
            //System.out.println(vaccines.get(i).dose+vaccines.get(i).company);
            if(vaccines.get(i).dose == 1 && vaccines.get(i).company.equals("Covaxin"))
                covaxin1++;
            else if(vaccines.get(i).dose == 2 && vaccines.get(i).company.equals("Covaxin"))
                covaxin2++;
            else if(vaccines.get(i).dose == 1 && vaccines.get(i).company.equals("Covishield"))
                covishield1++;
        }
    }
}
```

```

else if(vaccines.get(i).dose == 2 && vaccines.get(i).company.equals("Covishield"))
    covishield2++;
else
    continue;
}
System.out.println("Enter number of Oxygen Cylinders to add: ");
n = sc.nextInt();
for(int i = 0; i<n;i++){
    System.out.println("Enter details for Oxygen Cylinder "+(i+1));
    System.out.println("Enter Oxygen Flow");
    int temp1 = sc.nextInt();
    System.out.println("Enter Concentration Capacity");
    int temp3 = sc.nextInt();
    OxygenCylinder o1 = new OxygenCylinder("cylinder", temp1, temp3);
    oxygenCylinders.add(o1);
    System.out.println(o1+" added successfully!");
}
System.out.println("\n");
System.out.println("O2 Flow \t Concentration Capacity");
for(int i=0; i<n; i++){
    System.out.print(oxygenCylinders.get(i).O2flow);
    System.out.println("\t\t\t\t"+oxygenCylinders.get(i).concentrationCapacity);
}
System.out.println("\n");
System.out.println("Covaxin\t\t\tFirst Dose\t"+covaxin1);
System.out.println("Covaxin\t\t\tSecond Dose\t"+covaxin2);
System.out.println("Covishield\t\t\tFirst Dose\t"+covishield1);
System.out.println("Covishield\t\t\tFirst Dose\t"+covishield2);
}
}

```

Sample I/O

```
PS C:\Users\withl\OneDrive\Desktop\DSAL> java Vaccine
Adding new vaccine to Resources
Enter 1 for first dose, 2 for second dose
1
Enter name of Manufacturing Company
Covaxin
Success
PS C:\Users\withl\OneDrive\Desktop\DSAL> java Hospital
Vaccine is already available in directory
Dose of Vaccine: 1
Company of Vaccine: Covaxin
Enter number of vaccines to add:
1
Enter details for Vaccine 1
Enter 1 for first dose, 2 for second dose
1
Enter name of Vaccine
Covaxin
Vaccine@2d38eb89 added successfully!
Enter number of Oxygen Cylinders to add:
1
Enter details for Oxygen Cylinder 1
Enter Oxygen Flow
10
Enter Concentration Capacity
10
OxygenCylinder@4629104a added successfully!

O2 Flow      Concentration Capacity
10           10

Covaxin      First Dose      1
Covaxin      Second Dose     0
Covishield   First Dose     0
Covishield   First Dose     0
```

```
vaccines.txt X
vaccines.txt
1  NULENGSRNULBELVaccineSTXSTXNULSTXINULEOTdoseLNULBELcompanytNULDC2Ljava/lang/String;xpNULNULNULSOHNULBELCovaxin
```