// Design a class which represents a student. Every student record is made up of the following fields.

//   Registration number (int)

//   Full Name (String)

//   Date of joining (Gregorian calendar)

//   Semester (short)

//   GPA (float)

//   CGPA (float)

// Whenever a student joins he will be given a new registration number. Registration number is calculated as follows. If year of joining is 2012 and he is the 80th student to join then his registration number will be 1280.

// Write member functions to do the following.

// Provide default and parameterized constructors to this class

// Write display method which displays the record. Test the class by writing suitable main method.

// Create an array of student record to store minimum of 5 records in it. Input the records and display them.

```java
import java.util.Scanner;

class Student{
    int reg_no;
    int date, month, year;
    String name;
    short sem;
    float gpa, cgpa;
    static int count;

    Student(){
        name = "";
        reg_no = 0;
        date = 0;
        month = 0;
        year = 0;
        sem = 0;
        gpa = 0;
        cgpa = 0;
        count++;
    }

    Student(String s, int d, int m, int y, short sem_no, float gp, float cg){
        count++;
```

```java
            name = s;
            date = d;
            month = m;
            year = y;
            reg_no = calcReg(year, count);
            sem = sem_no;
            gpa = gp;
            cgpa = cg;
        }

    int calcReg(int year, int count){
        return (year%100)*100+count;
    }

    void display(){
        System.out.println("Name: " + name);
        System.out.println("Registration number: " + reg_no);
        System.out.println("Semester " + sem);
        System.out.println("GPA = " + gpa);
        System.out.println("CGPA = " +cgpa);
    }
}

class StudentDemo{
    public static void main(String []args){
        Scanner sc = new Scanner(System.in);
        Student[] stu = new Student[5];

        float gp,cg;
        int d, m, y;
        short sem;
        String name = "";
        for(int i = 0 ; i<5 ; i++){
            System.out.println("Student " + i);
            System.out.println("Enter name");
            name = sc.nextLine();
            System.out.println("Enter date of joining(dd mm yyyy)");
            d = sc.nextInt();
            m = sc.nextInt();
            y = sc.nextInt();
            System.out.println("Enter GPA");
            gp= sc.nextFloat();
            System.out.println("Enter CGPA");
            cg = sc.nextFloat();
            System.out.println("Enter semester");
            sem = sc.nextShort();
            stu[i] = new Student(name, d, m, y, sem, gp, cg);
            sc.nextLine();
        }
        for(int i = 0 ; i<5 ; i++){
            stu[i].display();
            System.out.println();
```

```
            }
        }
    }
```

```
Student 0
Enter name
Parth
Enter date of joining(dd mm yyyy)
2 2 2017
Enter GPA
9
Enter CGPA
9
Enter semester
3
Student 1
Enter name
rohit
Enter date of joining(dd mm yyyy)
4 4 2017
Enter GPA
3
Enter CGPA
3
Enter semester
3
Student 2
Enter name
Mohit
Enter date of joining(dd mm yyyy)
5
5
2017
Enter GPA
7
Enter CGPA
7
Enter semester
3
Student 3
Enter name
Elll
Enter date of joining(dd mm yyyy)
8
8
2017
```

```
Enter GPA
8
Enter CGPA
8
Enter semester
3
Student 4
Enter name
Gugh
Enter date of joining(dd mm yyyy)
9
9
2017
Enter GPA
5
Enter CGPA
5
Enter semester
3
Name: Parth
Registration number: 1701
Semester 3
GPA = 9.0
CGPA = 9.0

Name: rohit
Registration number: 1702
Semester 3
GPA = 3.0
CGPA = 3.0

Name: Mohit
Registration number: 1703
Semester 3
GPA = 7.0
CGPA = 7.0

Name: Elll
Registration number: 1704
Semester 3
```

```
CGPA = 7.0
    210 GB Volume
Name: Elll
Registration number: 1704
Semester 3
GPA = 8.0
CGPA = 8.0

Name: Gugh
Registration number: 1705
Semester 3
GPA = 5.0
CGPA = 5.0
```

2)
// Create a Person class with private instance variables for the person's name and birth date.
// Add appropriate accessor methods for these variables.
// Then create a subclass College Graduate with private instance variables for the student's GPA and year of graduation and appropriate accessors for these variables.
// Include appropriate constructors for your classes.
// Then create a class with main() method that demonstrates your classes.

```java
import java.util.*;

class Person{
        private String name ;
        private Date dob ;
        public Person(){
                name = "";
                dob = new Date() ;
        }
        public Person(String name, Date dob){
                this.dob = dob ;
                this.name = name ;
        }
        public void set_name(String name){
                this.name = name ;
        }
        public String get_name(){
                return this.name ;
        }
        public void set_dob(int year,int month,int day){
                this.dob = new Date(year-1900,month,day);
        }
        public Date get_dob(){
                return this.dob ;
        }
        public void display(){
                System.out.println("Name: " + name);
                System.out.println("DOB: " + dob.toString());
        }
}


class CollegeGraduate extends Person{
        private float gpa ;
        private int grad_year ;
        public CollegeGraduate(){
                super();
                gpa = 0 ;
                grad_year = 0;
        }
        public CollegeGraduate(String name, Date dob, float gpa , int grad_year){
                super(name,dob);
                this.gpa = gpa ;
                this.grad_year = grad_year ;
```

```java
        }
        public void set_gpa(float gpa){
                this.gpa = gpa ;
        }
        public float get_gpa(){
                return this.gpa ;
        }
        public void set_grad(int grad_year){
                this.grad_year = grad_year ;
        }
        public int get_grad(){
                return this.grad_year ;
        }
        public void display(){
                super.display();
                System.out.println("GPA: " + gpa);
                System.out.println("Year: " + grad_year);
        }
}

class Demo{
        public static void main(String []args){
                Scanner sc = new Scanner(System.in);
                Date d = new Date(2001, 5, 28);
                CollegeGraduate stu1 = new CollegeGraduate("Parth Shukla", d, 9, 2023);
                stu1.display();

                System.out.println("Enter name");
                String n = sc.nextLine();
                System.out.println("Enter DOB");
                int dat = sc.nextInt();
                int m = sc.nextInt();
                int y = sc.nextInt();
                d = new Date(y, m, dat);
                System.out.println("Enter GPA");
                int gp = sc.nextInt();
                System.out.println("Enter grad year");
                int gy = sc.nextInt();

                CollegeGraduate stu2 = new CollegeGraduate(n, d, gp, gy);
                stu2.display();
        }
}
```

```
Name: Parth Shukla
DOB: Fri Jun 28 00:00:00 IST 3901
GPA: 9.0
Year: 2023
Enter name
Gugh Fudg
Enter DOB
4 5 2001
Enter GPA
7
Enter grad year
2023
Name: Gugh Fudg
DOB: Tue Jun 04 00:00:00 IST 3901
GPA: 7.0
Year: 2023
```