

19CS30E - ADVANCED JAVA PROGRAMMING

CO1 - Programming Assignment on Collections

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Problem Statement :

The product based company, Amazon conducts an interview process for all the colleges over TamilNadu and sends invitation mail for all colleges with a note that only 20 students can register from a college and the students whose CGPA in college is above 8.5 are eligible for the interview process . Your aim is to develop a registration portal for the interview process which accepts the applicant name , college name , college registration number and CGPA as the input and checks for the validity with the following conditions :

- Each college must have exactly 20 candidates, not more. Else the program must display “Maximum students reached for this college.”
- Repetition of the same student to register more than once should be avoided and must display “You have already Registered ...!”
- The CGPA should be above 8.5 and less than 10 else display the appropriate message.
- The college name can be of any case

If all the above conditions are satisfied the registration can be permitted and display “Registration successful!” and continue the registration for the next candidate if needed.

Program :

```
import java.util.*;

public class amazonRegistration{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);
        HashMap<String, HashSet<Integer>> collegeMap = new HashMap<>();
        System.out.println("... AMAZON ...");
```

```
System.out.println("Registration Portal" + "\n");

while (true) {

    int flag=0;
    System.out.print("Enter Applicant Name : ");
    String appName = sc.nextLine();

    System.out.print("Enter College Name : ");
    String collegeName = sc.nextLine();
    collegeName = collegeName.toLowerCase();

    System.out.print("Enter College Registration Number : ");
    int regNo = sc.nextInt();
    sc.nextLine();

    System.out.print("Enter CGPA : ");
    double cgpa = sc.nextDouble();

    if (cgpa<8.5){
        System.out.println("Sorry..You are not eligible..!");
    }

    else if (cgpa>10){
        System.out.println("Enter a valid CGPA..!");
    }

    else{

        if (!collegeMap.containsKey(collegeName)) {
            collegeMap.put(collegeName, new HashSet<>());
        }

        HashSet<Integer> regNumbers = collegeMap.get(collegeName);

        if (regNumbers.contains(regNo)) {
            System.out.println("You have already Registered ...!");
            flag=1;
        }

    }

}
```

```

else {
    regNumbers.add(regNo);
    if (regNumbers.size() > 20) {
        System.out.println("Maximum students reached for this college.");
        flag=1;
    }
}

if(flag==0){
    System.out.println("Registration successful!");
}

System.out.print("Do you want to continue (1 for yes, 0 for no): ");
int f = sc.nextInt();
sc.nextLine();

if (f == 0) {
    break;
}
}
}
}
}
}

```

Sample Input/Output :

```

... AMAZON ...
Registration Portal

Enter Applicant Name : Abi
Enter College Name : NEC
Enter College Registration Number : 2112071
Enter CGPA : 10.5
Enter a valid CGPA...!
Do you want to continue (1 for yes, 0 for no): 

```

```
... AMAZON ...
Registration Portal

Enter Applicant Name : Abi
Enter College Name : nEc
Enter College Registration Number : 2112071
Enter CGPA : 8.9
Registration successful!
Do you want to continue (1 for yes, 0 for no): 1
Enter Applicant Name : Abi
Enter College Name : NEC
Enter College Registration Number : 2112071
Enter CGPA : 8.9
You have already Registered ...!
Do you want to continue (1 for yes, 0 for no): ☐
```

```
Enter Applicant Name : Abi
Enter College Name : neC
Enter College Registration Number : 123
Enter CGPA :
9.8
Registration successful!
Do you want to continue (1 for yes, 0 for no):
1
Enter Applicant Name : Itachi
Enter College Name : Nec
Enter College Registration Number : 321
Enter CGPA : 9.9
Registration successful!
Do you want to continue (1 for yes, 0 for no): 1
Enter Applicant Name : Obito
Enter College Name : nEC
Enter College Registration Number :
21120
Enter CGPA : 9.8
Maximum students reached for this college.
Do you want to continue (1 for yes, 0 for no): ☐
```

... AMAZON ...

Registration Portal

Enter Applicant Name : Abi

Enter College Name : Nec

Enter College Registration Number : 123

Enter CGPA : 6.8

Sorry..You are not eligible..!

Do you want to continue (1 for yes, 0 for no):