OOP Innovative Assignment
College Seat Allotment System

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Project Functionalities with description: This program takes inputs from student. In this inputs, Program takes number of students appear for board exam and percentile of 3 subjects(PCM) and also percentile of GUJCET. If student is applying from JEE exam , it takes the input accordingly. After taking all inputs, it calculate the rank of the student and give appropriate college suggestion for the student.

OOP concepts Used: Inheritance, Constructors, Exception handling ,File handling.

Project Code:

```java
import java.util.*;
import java.io.*;
class scholar_student{
    Scanner sc = new Scanner(System.in);
    String name;
    double PCMpr , gujcetpr, jeepr;
    int rank,c;
    void input() {
        System.out.println("ENTER STUDENT'S NAME ");
        name = sc.nextLine();
        System.out.println("1.ACPC\n2.JEE\nENTER YOUR CHOICE : ");
        c = sc.nextInt();
        if(c==1) {
            System.out.println("ENTER STUDENT'S PCM BOARD PERCENTILE : ");
            PCMpr = sc.nextDouble();
            System.out.println("ENTER STUDENT'S GUJCET PERCENTILE : ");
            gujcetpr = sc.nextDouble();
        }
        else if(c==2){
            System.out.println("ENTER STUDENT'S PCM BOARD PERCENTILE : ");
            PCMpr = sc.nextDouble();
            System.out.println("ENTER STUDENT'S JEE PERCENTILE : ");
            jeepr = sc.nextDouble();
        }
    }
    double rank_cal(){
        if(c==1){
            double r1;
            r1=(100-((0.6*PCMpr)+(0.4*gujcetpr)));
            return r1;
        }
```

```java
        else {
            double r1;
            r1=(100-((0.5*PCMpr)+(0.5*jeepr)));
            return r1;
        }
    }
}
class college extends scholar_student{
    Scanner sc = new Scanner(System.in);
    int choice;
    college(){
        input();
    }
    void yourcollege(){
        System.out.println("Your Merit Rank is : "+rank);
        try{
            FileWriter fw=new
FileWriter("C:\\Users\\janam\\IdeaProjects\\OOP\\src\\Result_file.txt");
            fw.write("Your Merit Rank is : "+rank);
            fw.close();
        }
        catch(Exception e){System.out.println(e);}
        System.out.println();
        label : {
            while(true){
            BufferedReader br = null;
            try {
                br = new BufferedReader(new
FileReader("C:\\Users\\janam\\IdeaProjects\\OOP\\src\\College_List.txt"));
                    //Reading the input from the file
                    String contentLine = br.readLine();
                while (contentLine != null) {
                    System.out.println(contentLine);
                    contentLine = br.readLine();
                }
                br.close();
            }
            catch (IOException ioe)
            {
                ioe.printStackTrace();
            }
            System.out.println("\nEnter your choice out of the above
colleges : ");
            choice = sc.nextInt();
            try{
                FileWriter fw=new
FileWriter("C:\\Users\\janam\\IdeaProjects\\OOP\\src\\Result_file.txt");
                switch(choice)
                {
                    case 1:
                        System.out.println("you have selected College
1\n\n");
                        if(rank<=54)
                        {
                            System.out.println("Congratulation you can
apply for ICT-CS, ICT and MnC at College 1 !! \n");
                            fw.write("Congratulation you can apply for ICT-
CS, ICT and MnC at College 1 !! \n");
                            fw.close();
                            break label;
                        }
```

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                        else if(rank>54 && rank<=140)
                        {
                                System.out.println("Congratulation you can
apply for ICT and MnC at College 1 !! \n");
                                fw.write("Congratulation you can apply for ICT
and MnC at College 1 !! \n");
                                fw.close();
                                break label;
                        }
                        else if(rank>140 && rank<=151)
                        {
                                System.out.println("Congratulation you can
apply for MnC at College 1 !!");
                                fw.write("Congratulation you can apply for MnC
at College 1 !!\n");
                                        fw.close();
                                break label;
                        }
                        else
                        {
                                System.out.println("Better luck next time, you
can not apply for admission at College 1 :( \n\ntry any another college
\n");
                                fw.write("Better luck next time, you can not
apply for admission at College 1 :( \n\ntry any another college \n \n");
                        }
                        break ;
                    case 2:
                        System.out.println("you have selected College 2
\n\n");
                        //fSystem.out.println(fp,"you have selected College
2 \n\n");
                        if(rank<=339)
                        {
                                System.out.println("Congratulation you can
apply for CSE , EE , Civil and Mechanical branches at College 2 !!\n");
                                fw.write("Congratulation you can apply for CSE
, EE , Civil and Mechanical branches at College 2 !! \n");
                                fw.close();break label;
                        }
                        else if(rank > 339 && rank<=2753)
                        {
                                System.out.println("Congratulation you can
apply for EE , Civil and Mechanical branches at College 2 !! \n");
                                fw.write("Congratulation you can apply for EE ,
Civil and Mechanical branches at College 2 !! \n");
                                fw.close();
                                break label;
                        }
                        else if(rank>2753 && rank<=5915)
                        {
                                System.out.println("Congratulation you can
apply for Civil and EE branches at College 2 !! \n");
                                fw.write("Congratulation you can apply for
Civil and EE branches at College 2 !! \n");
                                fw.close();
                                break label;
                        }
                        else if(rank>5915 && rank<=8752)
                        {
                                System.out.println("Congratulation you can
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apply for Civil branch at College 2 !! \n");
                                fw.write("Congratulation you can apply for
Civil branch at College 2 !! \n");
                                fw.close();
                                break label;
                            }
                            else
                            {
                                System.out.println("Better luck next time, you
can not apply for admission at College 2 :(\n\ntry any another college
\n");
                                fw.write("Better luck next time, you can not
apply for admission at College 2 :(\n\ntry any another college \n");
                            }
                            break ;
                        case 3:
                            System.out.println("you have selected College 3
\n\n");
                            if(rank<=615)
                            {
                                System.out.println("Congratulation you can
apply for CSE , EE and Mechanical branches at College 3 !!\n");
                                fw.write("Congratulation you can apply for CSE
, EE and Mechanical branches at College 3 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>615 && rank<=5859)
                            {
                                System.out.println("Congratulation you can
apply for EE and Mechanical branches at College 3 !! \n");
                                fw.write("Congratulation you can apply for EE
and Mechanical branches at College 3 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>5859 && rank<=24711)
                            {
                                System.out.println("Congratulation you can
apply for Mechanical branch at College 3 !! \n");
                                fw.write("Congratulation you can apply for
Mechanical branch at College 3 !! \n");
                                fw.close();
                                break label;
                            }
                            else
                            {
                                System.out.println("Better luck next time, you
can not apply for admission at College 3 :(\n\ntry any another college
\n");
                                fw.write("Better luck next time, you can not
apply for admission at College 3 :(\n\ntry any another college \n");
                            }
                            break ;
                        case 4:
                            System.out.println("you have selected College 4
\n\n");
                            if(rank<=1423)
                            {
                                System.out.println("Congratulation you can
apply for CSE , CH and Mechanical branches at College 4 !!\n");
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                                fw.write("Congratulation you can apply for CSE
, CH and Mechanical branches at College 4 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>1423 && rank<=13316)
                            {
                                System.out.println("Congratulation you can
apply for CH and Mechanical branches at College 4 !! \n");
                                fw.write("Congratulation you can apply for CH
and Mechanical branches at College 4 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>13316 && rank<=15133)
                            {
                                System.out.println("Congratulation you can
apply for CH branch at College 4 !! \n");
                                fw.write("Congratulation you can apply for CH
branch at College 4 !! \n");
                                fw.close();
                                break label;
                            }
                            else
                            {
                                System.out.println("Better luck next time, you
can not apply for admission at College 4 :(\n\ntry any another college
\n");
                                fw.write("Better luck next time, you can not
apply for admission at College 4 :(\n\ntry any another college \n");
                            }
                            break ;
                    case 5:
                        System.out.println("you have selected College 5
\n\n");
                            if(rank<=555)
                            {
                                System.out.println("Congratulation you can
apply for CSE , EE , CH and Mechanical branches at College 5 !!\n");
                                fw.write("Congratulation you can apply for CSE
, EE , CH and Mechanical branches at College 5 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>555 && rank<=2934)
                            {
                                System.out.println("Congratulation you can
apply for EE , CH and Mechanical branches at College 5 !! \n");
                                fw.write("Congratulation you can apply for EE ,
CH and Mechanical branches at College 5 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>2934 && rank<=3215)
                            {
                                System.out.println("Congratulation you can
apply for CH and EE branches at College 5 !! \n");
                                fw.write("Congratulation you can apply for CH
and EE branches at College 5 !! \n");
                                fw.close();
                                break label;
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                    }
                    else if(rank>3215 && rank<=4991)
                    {
                            System.out.println("Congratulation you can
apply for EE branch at College 5 !! \n");
                            fw.write("Congratulation you can apply for EE
branch at College 5!! \n");
                            fw.close();
                            break label;
                    }
                    else
                    {
                            System.out.println("Better luck next time, you
can not apply for admission at College 5 :(\n\ntry any another college
\n");
                            fw.write("Better luck next time, you can not
apply for admission at College 5 :(\n\ntry any another college \n");
                    }
                    break ;
            case 6:
                    System.out.println("you have selected College 6
\n\n");
                    if(rank<=795)
                    {
                            System.out.println("Congratulation you can
apply for CSE , EE , Civil and Mechanical branches at College 6 !!\n");
                            fw.write("Congratulation you can apply for CSE
, EE , Civil and Mechanical branches at College 6 !! \n");
                            fw.close();
                            break label;
                    }
                    else if(rank>795 && rank<=5444)
                    {
                            System.out.println("Congratulation you can
apply for EE , Civil and Mechanical branches at College 6 !! \n");
                            fw.write("Congratulation you can apply for EE ,
Civil and Mechanical branches at College 6 !! \n");
                            fw.close();
                            break label;
                    }
                    else if(rank>5444 && rank<=7608)
                    {
                            System.out.println("Congratulation you can
apply for Civil and EE branches at College 6 !! \n");
                            fw.write("Congratulation you can apply for
Civil and EE branches at College 6 !! \n");
                            fw.close();
                            break label;
                    }
                    else if(rank>7608 && rank<=10324)
                    {
                            System.out.println("Congratulation you can
apply for Civil branch at College 6 !! \n");
                            fw.write("Congratulation you can apply for
Civil branch at College 6 !! \n");
                            fw.close();
                            break label;
                    }
                    else
                    {
                            System.out.println("Better luck next time, you
```

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can not apply for admission at College 6 :(\n\ntry any another college
\n");
                                fw.write("Better luck next time, you can not
apply for admission at College 6 :(\n\ntry any another college \n");
                            }
                            break ;
                    case 7:
                            System.out.println("you have selected College 7
\n\n");
                            if(rank<=458)
                            {
                                System.out.println("Congratulation you can
apply for CSE , EE , Civil and Mechanical branches at College 7 !!\n");
                                fw.write("Congratulation you can apply for CSE
, EE , Civil and Mechanical branches at College 7 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>458 && rank<=2234)
                            {
                                System.out.println("Congratulation you can
apply for EE , Civil and Mechanical branches at College 7 !! \n");
                                fw.write("Congratulation you can apply for EE ,
Civil and Mechanical branches at College 7 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>2234 && rank<=3537)
                            {
                                System.out.println("Congratulation you can
apply for Civil and EE branches at College 7 !! \n");
                                fw.write("Congratulation you can apply for
Civil and EE branches at College 7 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>3537 && rank<=4875)
                            {
                                System.out.println("Congratulation you can
apply for Civil branch at College 7 !! \n");
                                fw.write("Congratulation you can apply for
Civil branch at College 7 !! \n");
                                fw.close();
                                break label;
                            }
                            else
                            {
                                System.out.println("Better luck next time, you
can not apply for admission at College 7 :(\n\ntry any another college
\n");
                                fw.write("Better luck next time, you can not
apply for admission at College 7 :(\n\ntry any another college \n");
                            }
                            break ;
                    case 8:
                            System.out.println("you have selected College 8
\n\n");
                            if(rank<=2709)
                            {
                                System.out.println("Congratulation you can
apply for CE branch at College 8 !!\n");
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                                fw.write("Congratulation you can apply for CE
branch at College 8 !!\n");
                                fw.close();
                                break label;
                            }
                            else
                            {
                                System.out.println("Better luck next time, you
can not apply for admission at College 8 :(\n\ntry any another college
\n");
                                fw.write("Better luck next time, you can not
apply for admission at College 8 :(\n\ntry any another college \n");
                            }
                            break ;
                        case 9:
                            System.out.println("You have selected College 9
\n\n");
                            if(rank<=1764)
                            {
                                System.out.println("Congratulation you can
apply for CE , EE and Mechanical branches at College 9 !!\n");
                                fw.write("Congratulation you can apply for CE ,
EE and Mechanical branches at College 9 !!\n");
                                fw.close();
                                break label;
                            }
                            else if(rank>1764 && rank<=10246)
                            {
                                System.out.println("Congratulation you can
apply for EE and Mechanical branches at College 9 !! \n");
                                fw.write("Congratulation you can apply for EE
and Mechanical branches at College 9 !! \n");
                                fw.close();
                                break label;
                            }
                            else if(rank>10246 && rank<=21236)
                            {
                                System.out.println("Congratulation you can
apply for EE branch at College 9 !! \n");
                                fw.write("Congratulation you can apply for EE
branch at College 9 !! \n");
                                fw.close();
                                break label;
                            }
                            else
                            {
                                System.out.println("Better luck next time, you
can not apply for admission at College 9 :(\n\ntry any another college
\n");
                                fw.write("Better luck next time, you can not
apply for admission at College 9 :(\n\ntry any another college \n");
                            }
                            break ;
                        case 10:
                            System.out.println("You have selected College 10
\n\n");
                            if(rank<=4886)
                            {
                                System.out.println("Congratulation you can
apply for CSE , EE , Civil and Mechanical branches at College 10 !!\n");
                                fw.write("Congratulation you can apply for CSE
```

```java
, EE , Civil and Mechanical branches at College 10 !!\n");
                                fw.close();
                                break label;
                        }
                        else
                        {
                                System.out.println("Better luck next time, you
can not apply for admission at College 10 :(\n\nSorry try next year!\n");
                                fw.write("Better luck next time, you can not
apply for admission at College 10 :(\n\nSorry try next year!\n");
                        }
                        break ;
                case 11: break label;
                default :
                        System.out.println("Enter a valid choice\n\n");
                        break ;
                }
        }catch(Exception e){System.out.println(e);}
        }
        }
    }
}
public class oop_innovative
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("+----------------------------------------------
------------------------ --------+");
                System.out.println("| |");
        System.out.println("| +----------------------------------------+
|");
                System.out.println("|================| WELCOME TO THE
COLLEGE ALLOTMENT SYSTEM|====================|");
        System.out.println("| +----------------------------------------+
|");
                System.out.println("| |");
        System.out.println("+----------------------------------------------
------------------------ --------+");
                System.out.println("Enter number of students appeared for
the exam");
        int n = sc.nextInt();
        college co = new college();
        co.rank = (int)((co.rank_cal() * n) /100);
        co.yourcollege();
    }
}
```

Text File:

1) College_list.txt

```
+----------------------+
| 1. | College 1 |
| 2. | College 2 |
| 3. | College 3 |
| 4. | College 4 |
```

5.	College 5
6.	College 7
8.	College 8
9.	College 9
10.	College 10
11.	EXIT PROGRAM
+----------------------+

2) Result_file.txt

Initially the file is empty, output will be stored in this file after the program run successfully.

OUTPUT:
Taking Input of student:

```
+----------------------------------------------------------------------- --------+
| |
| +--------------------------------------+ |
|================| WELCOME TO THE COLLEGE ALLOTMENT SYSTEM|====================|
| +--------------------------------------+ |
| |
+----------------------------------------------------------------------- --------+
Enter number of students appeared for the exam
44500
ENTER STUDENT'S NAME
Janam Patel
1.ACPC
2.JEE
ENTER YOUR CHOICE :
2
ENTER STUDENT'S PCM BOARD PERCENTILE :
99.45
ENTER STUDENT'S JEE PERCENTILE :
99.23
Your Merit Rank is : 293
```

```
+----------------------+
| 1. | College 1  |
| 2. | College 2  |
| 3. | College 3  |
| 4. | College 4  |
| 5. | College 5  |
| 6. | College 7  |
| 8. | College 8  |
| 9. | College 9  |
| 10.| College 10 |
| 11.|EXIT PROGRAM|
+----------------------+

Enter your choice out of the above colleges :
1
you have selected College 1


Better luck next time, you can not apply for admission at College 1 :(

try any another college
+----------------------+
| 1. | College 1  |
| 2. | College 2  |
| 3. | College 3  |
| 4. | College 4  |
| 5. | College 5  |
| 6. | College 7  |
| 8. | College 8  |
| 9. | College 9  |
| 10.| College 10 |
| 11.|EXIT PROGRAM|
+----------------------+

Enter your choice out of the above colleges :
2
you have selected College 2


Congratulation you can apply for CSE , EE , Civil and Mechanical branches at College 2 !!


Process finished with exit code 0
```

Text file Input:

```
   +---------------------+
   | 1. | College 1  |
   | 2. | College 2  |
   | 3. | College 3  |
   | 4. | College 4  |
   | 5. | College 5  |
   | 6. | College 7  |
   | 8. | College 8  |
   | 9. | College 9  |
   | 10.| College 10 |
   | 11.|EXIT PROGRAM|
   +---------------------+
```

Output stored in Text file:

```
Congratulation you can apply for CSE , EE , Civil and Mechanical branches at College 2 !!
```

THANK YOU.