19BCE1862
P.YESHWANTH
11TH MAY 2021

JAVA DIGITAL ASSIGNMENT -2

LINK FOR EXECUTION RECORDING:
YOUTUBE LINK: https://youtu.be/kO9K-hvSq6I
GOOGLE DRIVE LINK:
https://drive.google.com/drive/folders/1wOiF3KqHT8ABmAzBtF0_PbtdGPME5Cev?usp=sharing

CODE:

```
package da2;
import java.util.*;
import java.io.*;

class student{
        int regno;
   String qsnno[];
   int marks[];
   int total_marks;
   student()
   {
        qsnno=new String[3];
        marks=new int[3];
        for(int i=0;i<3;i++)
                marks[i]=0;
   }
}



public class runningcode {

        @SuppressWarnings("deprecation")
        public static void main(String[] args)throws IOException {
                //create the questions hash map
                Map<String,String> questionbank=new HashMap<String,String>();
                questionbank.put("Q1","Java program using thread");
                questionbank.put("Q2","Java program using exception");
                questionbank.put("Q3","Java program using arraylist");
                questionbank.put("Q4","Java program using queue");
                questionbank.put("Q5","Java program using dequeue");
                questionbank.put("Q6","Java program using stack");
                questionbank.put("Q7","Java program using treeset");
                questionbank.put("Q8","Java program using files");
                questionbank.put("Q9","Java program using random");
```

```
                //so now the set of questions are created now we need to assign questions to
students
                student s[]=new student[30];
                int n;
                System.out.print("Enter the number of students writing exam:");
                Scanner si=new Scanner(System.in);
                n=si.nextInt();
                for(int i=0;i<n;i++)//loop for number of students
                {
                        s[i]=new student();
                        System.out.print("\nEnter the Register Number of the student:");
                        s[i].regno=si.nextInt();
                         ArrayList<Integer> list = new ArrayList<Integer>();
               for (int j=1; j<9; j++) {
                  list.add(new Integer(j));
               }
               Collections.shuffle(list);
                        for(int j=0;j<3;j++)//loop for 3 times random question number generation
                        {
                                int ran_num=1+list.get(j);
                                String qsn="Q";
                                qsn+=ran_num;
                                s[i].qsnno[j]=qsn;//assigning the question number generated to the
student question array
                        }
                }
                //now questions numbers are allotted to the students now we need read the text
file of each student to award marks for each question

                for(int i=0;i<n;i++)//displaying student question number for verification for
non-repetition of questions to same student
                {
                        System.out.print("\nThe Questions alotted to Student "+(i+1)+" is: ");
                        for(int j=0;j<3;j++)
                                System.out.print(s[i].qsnno[j]+" ");
                }
                try {
                for(int i=0;i<n;i++)
                {
                        System.out.print("\n\nEnter the Answer File Name of the Student whose
reg no is "+(i+1)+":");
                        String fname=si.next();
                        //now we need to read the contents from the file word by word for
marking purposes
                        FileReader fr=new FileReader(fname);
                        Scanner input = new Scanner(fr);
                   int count = 0;
                   int q_counter=0;
                   while (input.hasNext()) {
```

```
                    if(q_counter==3)//all the questions are read
                    {
                        System.out.print("\n\nThere are more than 3 questions answered but
you were given only 3 qsns so others are ignored\n\n");
                        break;
                    }
                    String word = input.next();
                    if(Objects.equals(word,"Q1"))
                    {
                        System.out.print("\n\nThe Question Number is Q1 so we need to search
for keyword 'thread'\n");
                        int keyword_counter=0;
                        int vmain_counter=0;
                        while(input.hasNext())
                        {
                            String word2=input.next();
                            if(Objects.equals(word2,"thread"))
                                keyword_counter++;
                            if(Objects.equals(word2,"#"))//assuming # as the ending character
for each question's answer
                                break;
                            if(Objects.equals(word2,"public"))
                            {
                                String ts1=input.next();
                                if(Objects.equals(ts1,"static"))
                                {
                                    String ts2=input.next();
                                    if(Objects.equals(ts2,"void"))
                                    {
                                        String ts3=input.next();
                                        if(Objects.equals(ts3,"main"))
                                        {
                                            String ts4=input.next();
                                            if(Objects.equals(ts4,"(String"))
                                            {
                                                String ts5=input.next();
                                                if(Objects.equals(ts5,"a[])"))
                                                vmain_counter++;
                                            }
                                        }
                                    }
                                }

                            }
                        }
                        if(keyword_counter==0&&vmain_counter==0)//keyword not found in the
question and public static void main is not found
                            s[i].marks[q_counter++]=0;
                        else if(keyword_counter==0&&vmain_counter!=0)//keyword not found
```

```
but public main is there
                                s[i].marks[q_counter++]=5;
                        else if(keyword_counter!=0)//if the keyword is there
                                s[i].marks[q_counter++]=10;
                        System.out.print("The marks alotted for the question is:
"+s[i].marks[q_counter-1]);

                }

                else if(Objects.equals(word,"Q2)"))
                {
                        System.out.print("\n\nThe Question Number is Q2 so we need to search
for keyword 'try' and keyword 'catch'\n");
                        int try_keyword_counter=0;
                        int catch_keyword_counter=0;
                        int vmain_counter=0;
                        while(input.hasNext())
                        {
                                String word2=input.next();
                                if(Objects.equals(word2,"try{"))
                                        try_keyword_counter++;
                                else if(Objects.equals(word2,"}catch()"))
                                        catch_keyword_counter++;
                                else if(Objects.equals(word2,"#"))//assuming # as the ending
character for each question's answer
                                        break;
                                else if(Objects.equals(word2,"public"))
                                {
                                        String ts1=input.next();
                                        if(Objects.equals(ts1,"static"))
                                        {
                                                String ts2=input.next();
                                                if(Objects.equals(ts2,"void"))
                                                {
                                                        String ts3=input.next();
                                                        if(Objects.equals(ts3,"main"))
                                                        {
                                                                String ts4=input.next();
                                                                if(Objects.equals(ts4,"(String"))
                                                                {
                                                                        String ts5=input.next();
                                                                        if(Objects.equals(ts5,"a[])"))
                                                                        vmain_counter++;
                                                                }
                                                        }
                                                }
                                        }

                                }
```

```
                    }

if(try_keyword_counter==0&&catch_keyword_counter==0&&vmain_counter==0)//keyword not
found in the question and public static void main is not found
                            s[i].marks[q_counter++]=0;
                    else
if((try_keyword_counter==0&&catch_keyword_counter==0)&&vmain_counter!=0)
                            s[i].marks[q_counter++]=5;
                    else
if((try_keyword_counter!=0&&catch_keyword_counter==0&&vmain_counter!=0)||(try_keywor
d_counter==0&&catch_keyword_counter!=0&&vmain_counter!=0))
                            s[i].marks[q_counter++]=5;
                    else if(try_keyword_counter!=0&&catch_keyword_counter!=0)//if the
keyword is there
                            s[i].marks[q_counter++]=10;
                    System.out.print("The marks alotted for the question is:
"+s[i].marks[q_counter-1]);
                }//end of 2nd qsn checking


                else if(Objects.equals(word,"Q3"))
                {
                    System.out.print("\n\nThe Question Number is Q3 so we need to search
for keyword 'ArrayList'\n");
                    int keyword_counter=0;
                    int vmain_counter=0;
                    while(input.hasNext())
                    {
                        String word2=input.next();
                        if(Objects.equals(word2,"ArrayList"))
                            keyword_counter++;
                        if(Objects.equals(word2,"#"))//assuming # as the ending character
for each question's answer
                            break;
                        if(Objects.equals(word2,"public"))
                        {
                            String ts1=input.next();
                            if(Objects.equals(ts1,"static"))
                            {
                                String ts2=input.next();
                                if(Objects.equals(ts2,"void"))
                                {
                                    String ts3=input.next();
                                    if(Objects.equals(ts3,"main"))
                                    {
                                        String ts4=input.next();
                                        if(Objects.equals(ts4,"(String"))
                                        {
                                            String ts5=input.next();
```

```
                                                    if(Objects.equals(ts5,"a[])"))
                                                    vmain_counter++;
                                                }
                                            }
                                        }
                                    }

                                }
                            }
                            if(keyword_counter==0&&vmain_counter==0)//keyword not found in the
question and public static void main is not found
                                s[i].marks[q_counter++]=0;
                            else if(keyword_counter==0&&vmain_counter!=0)//keyword not found
but public main is there
                                s[i].marks[q_counter++]=5;
                            else if(keyword_counter!=0)//if the keyword is there
                                s[i].marks[q_counter++]=10;
                            System.out.print("The marks alotted for the question is:
"+s[i].marks[q_counter-1]);

                        }//end for 3rd qsn check


                        else if(Objects.equals(word,"Q4)"))
                        {
                            System.out.print("\n\nThe Question Number is Q4 so we need to search
for keyword 'Queue'\n");
                            int keyword_counter=0;
                            int vmain_counter=0;
                            while(input.hasNext())
                            {
                                String word2=input.next();
                                if(Objects.equals(word2,"Queue"))
                                    keyword_counter++;
                                if(Objects.equals(word2,"#"))//assuming # as the ending character
for each question's answer
                                    break;
                                if(Objects.equals(word2,"public"))
                                {
                                    String ts1=input.next();
                                    if(Objects.equals(ts1,"static"))
                                    {
                                        String ts2=input.next();
                                        if(Objects.equals(ts2,"void"))
                                        {
                                            String ts3=input.next();
                                            if(Objects.equals(ts3,"main"))
                                            {
                                                String ts4=input.next();
```

```
                                                    if(Objects.equals(ts4,"(String"))
                                                    {
                                                            String ts5=input.next();
                                                            if(Objects.equals(ts5,"a[])"))
                                                            vmain_counter++;
                                                    }
                                            }
                                    }
                            }

                    }
            }
            if(keyword_counter==0&&vmain_counter==0)//keyword not found in the
question and public static void main is not found
                    s[i].marks[q_counter++]=0;
            else if(keyword_counter==0&&vmain_counter!=0)//keyword not found
but public main is there
                    s[i].marks[q_counter++]=5;
            else if(keyword_counter!=0)//if the keyword is there
                    s[i].marks[q_counter++]=10;
            System.out.print("The marks alotted for the question is:
"+s[i].marks[q_counter-1]);

        }//end for qsn 4 check


        else if(Objects.equals(word,"Q5)"))
        {
            System.out.print("\n\nThe Question Number is Q5 so we need to search
for keyword 'Dequeue'\n");
            int keyword_counter=0;
            int vmain_counter=0;
            while(input.hasNext())
            {
                    String word2=input.next();
                    if(Objects.equals(word2,"Dequeue"))
                            keyword_counter++;
                    if(Objects.equals(word2,"#"))//assuming # as the ending character
for each question's answer
                            break;
                    if(Objects.equals(word2,"public"))
                    {
                            String ts1=input.next();
                            if(Objects.equals(ts1,"static"))
                            {
                                    String ts2=input.next();
                                    if(Objects.equals(ts2,"void"))
                                    {
                                            String ts3=input.next();
```

```
                                        if(Objects.equals(ts3,"main"))
                                        {
                                                String ts4=input.next();
                                                if(Objects.equals(ts4,"(String"))
                                                {
                                                        String ts5=input.next();
                                                        if(Objects.equals(ts5,"a[])"))
                                                        vmain_counter++;
                                                }
                                        }
                                }
                        }

                }
        }
        if(keyword_counter==0&&vmain_counter==0)//keyword not found in the
question and public static void main is not found
                s[i].marks[q_counter++]=0;
        else if(keyword_counter==0&&vmain_counter!=0)//keyword not found
but public main is there
                s[i].marks[q_counter++]=5;
        else if(keyword_counter!=0)//if the keyword is there
                s[i].marks[q_counter++]=10;
        System.out.print("The marks alotted for the question is:
"+s[i].marks[q_counter-1]);

    }//end for qsn 5 check



    else if(Objects.equals(word,"Q6"))
    {
        System.out.print("\n\nThe Question Number is Q6 so we need to search
for keyword 'Stack'\n");
        int keyword_counter=0;
        int vmain_counter=0;
        while(input.hasNext())
        {
                String word2=input.next();
                if(Objects.equals(word2,"Stack"))
                        keyword_counter++;
                if(Objects.equals(word2,"#"))//assuming # as the ending character
for each question's answer
                        break;
                if(Objects.equals(word2,"public"))
                {
                        String ts1=input.next();
                        if(Objects.equals(ts1,"static"))
                        {
```

```
                                        String ts2=input.next();
                                        if(Objects.equals(ts2,"void"))
                                        {
                                                String ts3=input.next();
                                                if(Objects.equals(ts3,"main"))
                                                {
                                                        String ts4=input.next();
                                                        if(Objects.equals(ts4,"(String"))
                                                        {
                                                                String ts5=input.next();
                                                                if(Objects.equals(ts5,"a[])"))
                                                                vmain_counter++;
                                                        }
                                                }
                                        }
                                }

                        }
                }
                if(keyword_counter==0&&vmain_counter==0)//keyword not found in the
question and public static void main is not found
                        s[i].marks[q_counter++]=0;
                else if(keyword_counter==0&&vmain_counter!=0)//keyword not found
but public main is there
                        s[i].marks[q_counter++]=5;
                else if(keyword_counter!=0)//if the keyword is there
                        s[i].marks[q_counter++]=10;
                System.out.print("The marks alotted for the question is:
"+s[i].marks[q_counter-1]);

        }//end for qsn 6 check



        else if(Objects.equals(word,"Q7"))
        {
                System.out.print("\n\nThe Question Number is Q7 so we need to search
for keyword 'Treeset'\n");
                int keyword_counter=0;
                int vmain_counter=0;
                while(input.hasNext())
                {
                        String word2=input.next();
                        if(Objects.equals(word2,"Treeset"))
                                keyword_counter++;
                        if(Objects.equals(word2,"#"))//assuming # as the ending character
for each question's answer
                                break;
                        if(Objects.equals(word2,"public"))
```

```
                        {
                                String ts1=input.next();
                                if(Objects.equals(ts1,"static"))
                                {
                                        String ts2=input.next();
                                        if(Objects.equals(ts2,"void"))
                                        {
                                                String ts3=input.next();
                                                if(Objects.equals(ts3,"main"))
                                                {
                                                        String ts4=input.next();
                                                        if(Objects.equals(ts4,"(String"))
                                                        {
                                                                String ts5=input.next();
                                                                if(Objects.equals(ts5,"a[])"))
                                                                vmain_counter++;
                                                        }
                                                }
                                        }
                                }

                                }
                        }
                        if(keyword_counter==0&&vmain_counter==0)//keyword not found in the
question and public static void main is not found
                                s[i].marks[q_counter++]=0;
                        else if(keyword_counter==0&&vmain_counter!=0)//keyword not found
but public main is there
                                s[i].marks[q_counter++]=5;
                        else if(keyword_counter!=0)//if the keyword is there
                                s[i].marks[q_counter++]=10;
                        System.out.print("The marks alotted for the question is:
"+s[i].marks[q_counter-1]);

                }//end for qsn 7 check


                else if(Objects.equals(word,"Q8)"))
                {
                        System.out.print("\n\nThe Question Number is Q8 so we need to search
for keyword 'File'\n");
                        int keyword_counter=0;
                        int vmain_counter=0;
                        while(input.hasNext())
                        {
                                String word2=input.next();
                                if(Objects.equals(word2,"File"))
                                        keyword_counter++;
                                if(Objects.equals(word2,"#"))//assuming # as the ending character
```

```
for each question's answer
                                        break;
                                    if(Objects.equals(word2,"public"))
                                    {
                                        String ts1=input.next();
                                        if(Objects.equals(ts1,"static"))
                                        {
                                            String ts2=input.next();
                                            if(Objects.equals(ts2,"void"))
                                            {
                                                String ts3=input.next();
                                                if(Objects.equals(ts3,"main"))
                                                {
                                                    String ts4=input.next();
                                                    if(Objects.equals(ts4,"(String"))
                                                    {
                                                        String ts5=input.next();
                                                        if(Objects.equals(ts5,"a[])"))
                                                        vmain_counter++;
                                                    }
                                                }
                                            }
                                        }

                                    }
                                }
                                if(keyword_counter==0&&vmain_counter==0)//keyword not found in the
question and public static void main is not found
                                    s[i].marks[q_counter++]=0;
                                else if(keyword_counter==0&&vmain_counter!=0)//keyword not found
but public main is there
                                    s[i].marks[q_counter++]=5;
                                else if(keyword_counter!=0)//if the keyword is there
                                    s[i].marks[q_counter++]=10;
                                System.out.print("The marks alotted for the question is:
"+s[i].marks[q_counter-1]);

                            }//end for qsn 8 check


                            else if(Objects.equals(word,"Q9"))
                            {
                                System.out.print("\n\nThe Question Number is Q9 so we need to search
for keyword 'Random'\n");
                                int keyword_counter=0;
                                int vmain_counter=0;
                                while(input.hasNext())
                                {
                                    String word2=input.next();
```

```
                                if(Objects.equals(word2,"Random"))
                                        keyword_counter++;
                                if(Objects.equals(word2,"#"))//assuming # as the ending character
for each question's answer
                                        break;
                                if(Objects.equals(word2,"public"))
                                {
                                        String ts1=input.next();
                                        if(Objects.equals(ts1,"static"))
                                        {
                                                String ts2=input.next();
                                                if(Objects.equals(ts2,"void"))
                                                {
                                                        String ts3=input.next();
                                                        if(Objects.equals(ts3,"main"))
                                                        {
                                                                String ts4=input.next();
                                                                if(Objects.equals(ts4,"(String"))
                                                                {
                                                                        String ts5=input.next();
                                                                        if(Objects.equals(ts5,"a[])"))
                                                                        vmain_counter++;
                                                                }
                                                        }
                                                }
                                        }

                                        }
                                }
                                if(keyword_counter==0&&vmain_counter==0)//keyword not found in the
question and public static void main is not found
                                        s[i].marks[q_counter++]=0;
                                else if(keyword_counter==0&&vmain_counter!=0)//keyword not found
but public main is there
                                        s[i].marks[q_counter++]=5;
                                else if(keyword_counter!=0)//if the keyword is there
                                        s[i].marks[q_counter++]=10;
                                System.out.print("The marks alotted for the question is:
"+s[i].marks[q_counter-1]);

                                } //end for qsn 9 check

                               }//end of outer while loop

                        }//for loop
                        }catch(IOException e) {System.out.print("\nThe file name entered is invalid.So
please restart the process\n");System.exit(0);}
                        //now we need to calculate the total marks of each student and the class average
                        float class_avg=0;
```

```
                System.out.print("\n\nStudent Mark Report:\n");
                for(int i=0;i<n;i++)
                {
                        s[i].total_marks=s[i].marks[0]+s[i].marks[1]+s[i].marks[2];
                        class_avg+=s[i].total_marks;
                        System.out.print("\nStudent Reg No: "+s[i].regno+"\n");
                        System.out.print("MARKS AWARDED:
"+s[i].marks[0]+","+s[i].marks[1]+","+s[i].marks[2]+"\tTOTAL: "+s[i].total_marks+"\n\n");
                }
                class_avg/=n;
                System.out.print("The Class Average for this class which has "+n+" students is:
"+class_avg);

        }//main block ends

}//class block ends
```

OUTPUT:
TEST CASE1:

```
Enter the number of students writing exam:4

Enter the Register Number of the student:1

Enter the Register Number of the student:2

Enter the Register Number of the student:3

Enter the Register Number of the student:4

The Questions alotted to Student 1 is: Q9 Q5 Q2
The Questions alotted to Student 2 is: Q5 Q9 Q3
The Questions alotted to Student 3 is: Q7 Q4 Q6
The Questions alotted to Student 4 is: Q7 Q8 Q4

Enter the Answer File Name of the Student whose reg no is 1:student1.txt


The Question Number is Q9 so we need to search for keyword 'Random'
The marks alotted for the question is: 10

The Question Number is Q5 so we need to search for keyword 'Deque'
The marks alotted for the question is: 10

The Question Number is Q2 so we need to search for keyword 'try' and keyword 'catch'
The marks alotted for the question is: 10

Enter the Answer File Name of the Student whose reg no is 2:student2.txt


The Question Number is Q5 so we need to search for keyword 'Deque'
The marks alotted for the question is: 10
```

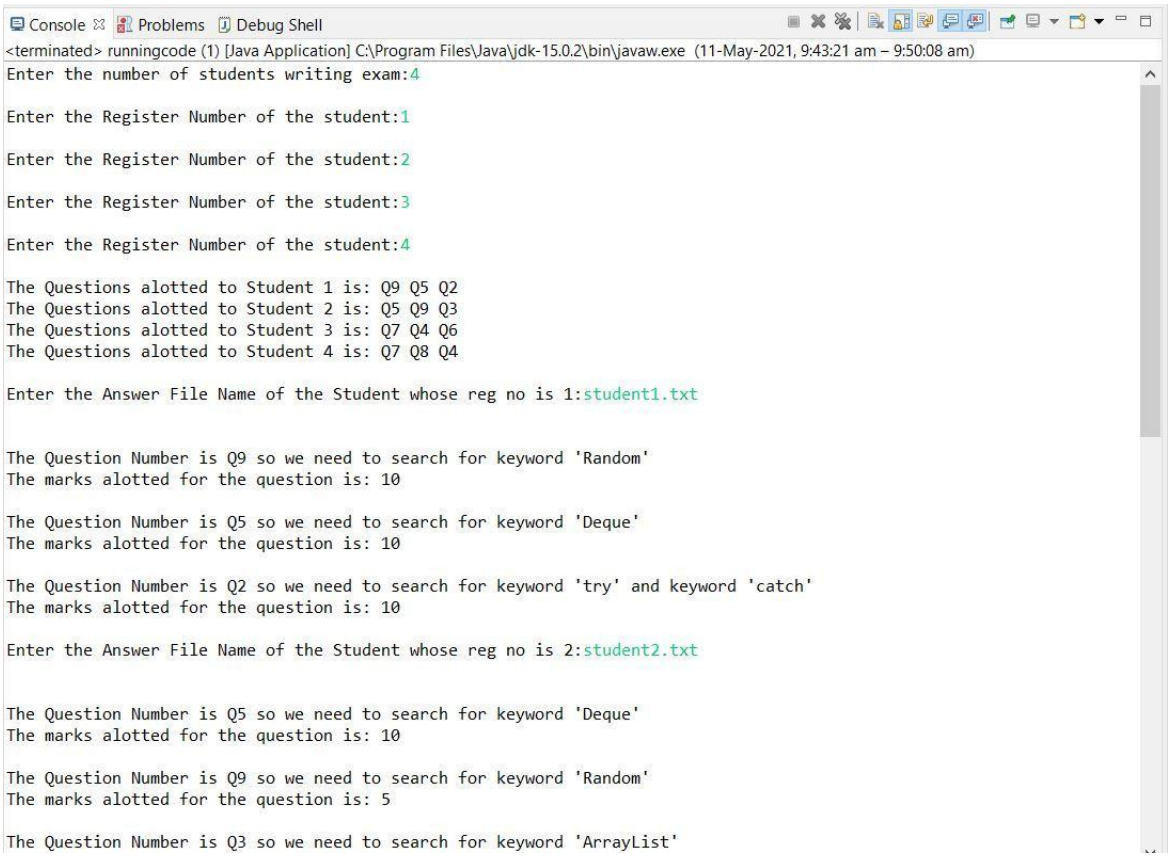
```
The Question Number is Q9 so we need to search for keyword 'Random'
The marks alotted for the question is: 5

The Question Number is Q3 so we need to search for keyword 'ArrayList'
The marks alotted for the question is: 10

Enter the Answer File Name of the Student whose reg no is 3:student3.txt


The Question Number is Q7 so we need to search for keyword 'Treeset'
The marks alotted for the question is: 0

The Question Number is Q4 so we need to search for keyword 'Queue'
The marks alotted for the question is: 5

The Question Number is Q6 so we need to search for keyword 'Stack'
The marks alotted for the question is: 10

Enter the Answer File Name of the Student whose reg no is 4:student4.txt


The Question Number is Q7 so we need to search for keyword 'Treeset'
The marks alotted for the question is: 5

The Question Number is Q8 so we need to search for keyword 'File'
The marks alotted for the question is: 5

The Question Number is Q4 so we need to search for keyword 'Queue'
The marks alotted for the question is: 5

Student Mark Report:

Student Reg No: 1
MARKS AWARDED: 10,10,10   TOTAL: 30


Student Reg No: 2
MARKS AWARDED: 10,5,10    TOTAL: 25


Student Reg No: 3
MARKS AWARDED: 0,5,10     TOTAL: 15


Student Reg No: 4
MARKS AWARDED: 5,5,5      TOTAL: 15

The Class Average for this class which has 4 students is: 21.25
```

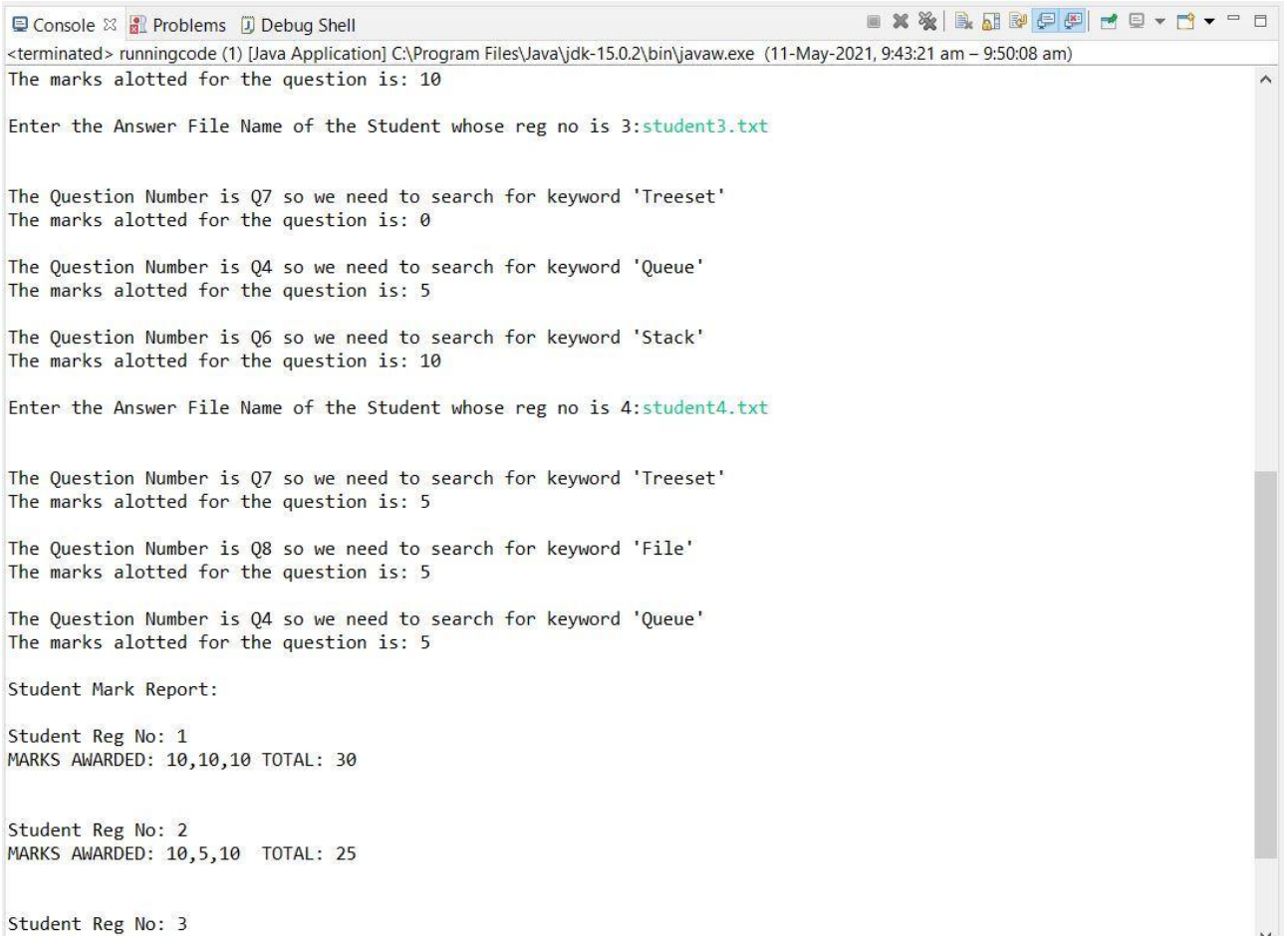
TEST CASE 2:

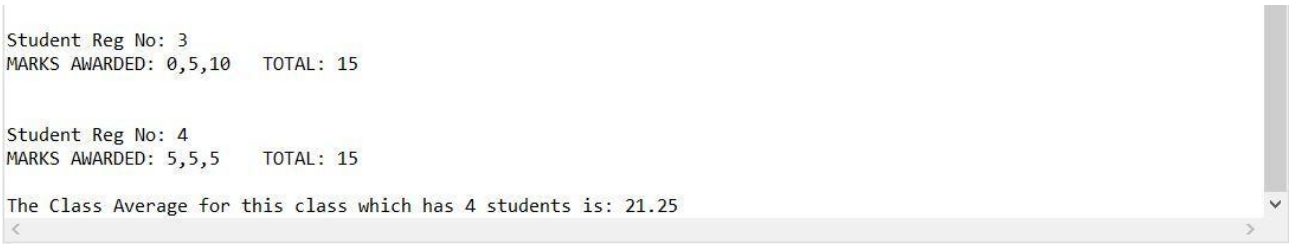
```
Enter the number of students writing exam:3
```

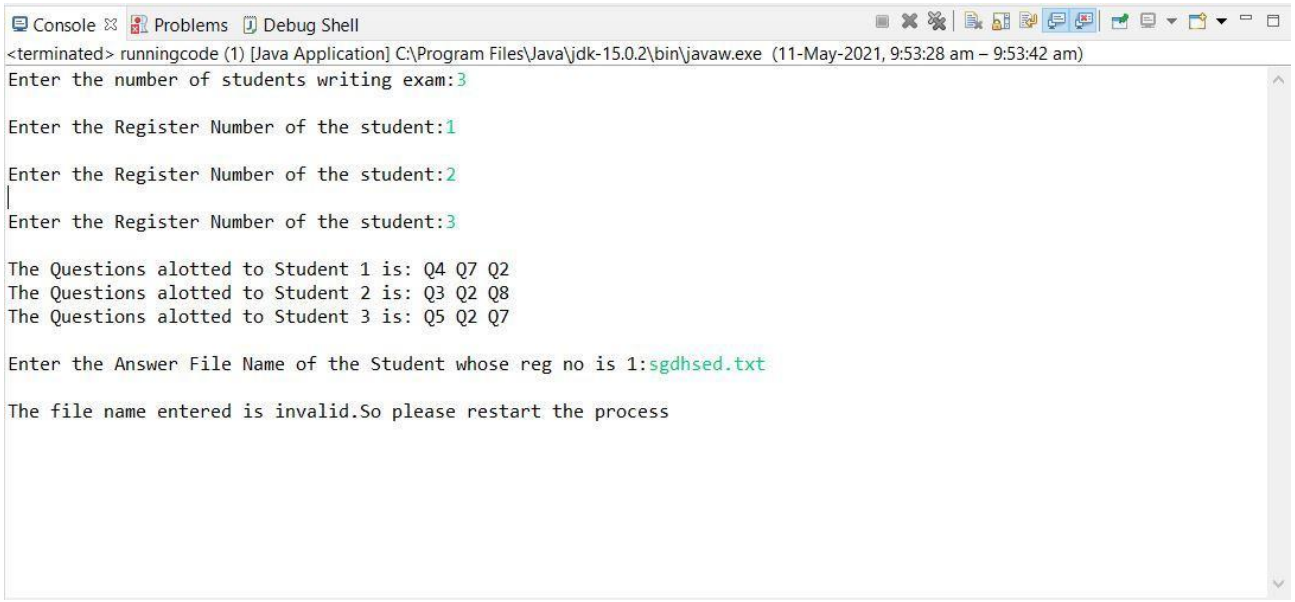
```
Enter the Register Number of the student:1

Enter the Register Number of the student:2

Enter the Register Number of the student:3

The Questions alotted to Student 1 is: Q4 Q7 Q2
The Questions alotted to Student 2 is: Q3 Q2 Q8
The Questions alotted to Student 3 is: Q5 Q2 Q7

Enter the Answer File Name of the Student whose reg no is 1:sgdhsed.txt

The file name entered is invalid.So please restart the process
```

OUTPUT SCREENSHOTS:




Console
Problems
Debug Shell
<terminated> runningcode (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (11-May-2021, 9:43:21 am – 9:50:08 am)
The marks alotted for the question is: 10
Enter the Answer File Name of the Student whose reg no is 3:student3.txt
The Question Number is Q7 so we need to search for keyword 'Treeset'
The marks alotted for the question is: 0
The Question Number is Q4 so we need to search for keyword 'Queue'
The marks alotted for the question is: 5
The Question Number is Q6 so we need to search for keyword 'Stack'
The marks alotted for the question is: 10
Enter the Answer File Name of the Student whose reg no is 4:student4.txt
The Question Number is Q7 so we need to search for keyword 'Treeset'
The marks alotted for the question is: 5
The Question Number is Q8 so we need to search for keyword 'File'
The marks alotted for the question is: 5
The Question Number is Q4 so we need to search for keyword 'Queue'
The marks alotted for the question is: 5
Student Mark Report:
Student Reg No: 1
MARKS AWARDED: 10,10,10 TOTAL: 30
Student Reg No: 2
MARKS AWARDED: 10,5,10 TOTAL: 25
Student Reg No: 3


Student Reg No: 3
MARKS AWARDED: 0,5,10 TOTAL: 15
Student Reg No: 4
MARKS AWARDED: 5,5,5 TOTAL: 15
The Class Average for this class which has 4 students is: 21.25


Console
Problems
Debug Shell
<terminated> runningcode (1) [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (11-May-2021, 9:53:28 am – 9:53:42 am)
Enter the number of students writing exam:3
Enter the Register Number of the student:1
Enter the Register Number of the student:2
Enter the Register Number of the student:3
The Questions alotted to Student 1 is: Q4 Q7 Q2
The Questions alotted to Student 2 is: Q3 Q2 Q8
The Questions alotted to Student 3 is: Q5 Q2 Q7
Enter the Answer File Name of the Student whose reg no is 1:sgdhsed.txt
The file name entered is invalid.So please restart the process

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THANK YOU

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