Assignment 8

```
//Problem Statement::
/*
  Implement a program for maintaining a student records database using File Handling.
  Student has Student_id, name, Roll_no, Class, marks and address. Display the data
  for five  students.
*/

import java.io.*;
import java.util.*;



// ========================= FILE1 CLASS =========================//


class Database {
        static BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        //creating bufferredReder class object


        // ---------------------- addRecords method ---------------------- //
        public void addRecords() throws IOException  {
                // Create or Modify a file for Database
                PrintWriter pw = new PrintWriter(new BufferedWriter(new
FileWriter("sample.txt",true)));
                //creating file with name sapmle.txt
                String studentname, address,s;//declaration of studentname , address ,s
                int studentid, rollno, Class;//declaration of studentid , rollno, Class
                float marks;//declaration of marks

                boolean addMore = false; //declaration of addmore
                do  {
                        System.out.print("\nEnter Student Name: "); //printing on console
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                        studentname = br.readLine();  //taking input from user
                        System.out.print("Student Id: "); //printing on console
                        studentid = Integer.parseInt(br.readLine()); //taking input from user
                        System.out.print("Roll no: ");//printing on console
                        rollno = Integer.parseInt(br.readLine());  //taking input from user
                        System.out.print("Address: ");  //printing on console
                        address = br.readLine();  //taking input from user
                        System.out.print("Class: ");//printing on console
                        Class = Integer.parseInt(br.readLine());  //taking input from user
                        System.out.print("Marks : ");  //printing on console
                        marks = Float.parseFloat(br.readLine()); //taking input from user
                         pw.println(studentname+" "+studentid+" "+rollno+" "+address+" "+Class+"
"+marks);
                         //appending data into to file
                         System.out.print("\nRecords added successfully !\n\nDo you want to add
more records ? (y/n) : ");
                         s = br.readLine();//take input from user
                         if(s.equalsIgnoreCase("y")){
                                 addMore = true;//modify addmore
                                 System.out.println();
                                 }
                         else
                                 addMore = false; //modify addmore
                }
                while(addMore);
                 pw.close();
                }

        // ---------------------- addRecords method ---------------------- //
        public void readRecords() throws IOException  {
                try  {
                        // Open the file
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                BufferedReader file = new BufferedReader(new   FileReader("sample.txt"));
                String name; //declaration of string name
                int i=1;  //intizing value of i=1

                // Read records from the file
                while((name = file.readLine()) != null)   {
                        System.out.println(name); //printing on console
                        System.out.println("");
                        }   file.close();
        }
        catch(FileNotFoundException e){ //Exception handling
                System.out.println("\nERROR : File not Found !!!");  //printing on console
        }
}

// ---------------------- addRecords method ---------------------- //
public void searchRecords() throws IOException  {
        try  {   // Open the file
                BufferedReader file = new BufferedReader(new   FileReader("sample.txt"));
                String name;//declaration of string name
                int flag=0; //intizing value of flag=0
                Scanner sc=new Scanner(System.in); //creating obj of scanner class
                System.out.print("Enter an id of the student you want to search: ");
                //printing on console
                String searchname=sc.next(); //taking input from user
                // Read records from the file
                while((name = file.readLine()) != null)   {
                        String[] line = name.split(" ");

                        if(searchname.equalsIgnoreCase(line[1])){
                                System.out.println("Record found");    //printing on console
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                                System.out.println(name);    //printing record on console
                                System.out.println("");
                                flag=1;    //modify value
                                break;
                                }
                        }
                    if(flag==0)     //check condition
                            System.out.println("Record not found"); //printing on console
                    file.close();  //closing file
                    }
                catch(FileNotFoundException e)  {//Exception handling
                    System.out.println("\nERROR : File not Found !!!");//printing on console
                    }
                }

        // ---------------------- addRecords method ---------------------- //
        public void deleteRecords() throws IOException  {
                try  {   // Open the file
                    BufferedReader file1 = new BufferedReader(new FileReader("sample.txt"));
                    PrintWriter pw = new PrintWriter(new BufferedWriter(new
FileWriter("new.txt",true)));
                    String name;  //declaration of string name
                    int flag=0; //intizing value of flag=0
                    Scanner sc=new Scanner(System.in); //creating obj of scanner class
                    System.out.print("Enter the name of the student you want to delete: ");
                    String searchname=sc.next();   // Read records from the file
                    while((name = file1.readLine()) != null)   {
                            String[] line = name.split(" ");
                            if(!searchname.equalsIgnoreCase(line[0])){
                                pw.println(name);
                                flag=0; //modify value
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                                }
                                else{
                                        System.out.println("Record found");  //printing on console
                                        flag=1;//modify value
                                }
                                }  file1.close();//closing file
                                pw.close();

                                File delName =  new File("sample.txt");//creating obj of sample.txt
                                File oldName =  new File("new.txt");   //creating obj of new.txt
                                File newName =   new File("sample.txt");  //creating obj of
sample.txt

                                if(delName.delete())
                                        System.out.println("deleted successfully");  //printing on
console
                                else
                                        System.out.println("Error");//printing on console

                                if (oldName.renameTo(newName))
                                        System.out.println("Renamed successfully");  //printing on
console
                                else
                                        System.out.println("Error"); //printing on console

                        }
                        catch(FileNotFoundException e)  {//Exception handling
                                System.out.println("\nERROR : File not Found !!!");
                                }
                        }

        // ---------------------- addRecords method ---------------------- //
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```
	public void updateRecords() throws IOException  {
		try  {
			// Open the file
			BufferedReader file1 = new BufferedReader(new FileReader("sample.txt"));
			PrintWriter pw = new PrintWriter(new BufferedWriter(new
FileWriter("new.txt",true)));
			String name;//declaration of string name
			int flag=0;   //intizing flag to 0
			Scanner sc=new Scanner(System.in);  //creating obje of scanner class
			System.out.print("Enter the name of the student you want to update: ");
//printing on console
			String searchname=sc.next();   // Read records from the file

			while((name = file1.readLine()) != null)   {  //check condition
				String[] line = name.split(" ");

				if(!searchname.equalsIgnoreCase(line[0])){  //check condition
					pw.println(name);
					flag=0;  //modify value of flag
					}
				else
					{
					System.out.println("Record found");  //printing on console
					System.out.print("Enter updated marks: ");  //printing on
console
					String up_mark=sc.next();    //taking input from user
					pw.println(line[0]+" "+line[1]+" "+line[2]+" "+line[3]+"
"+line[4]+" "+up_mark);
					flag=1;    //modify value of flag
					}
				}
			file1.close(); //closing file
```

```
                                pw.close();
                                File delName =  new File("sample.txt");//creating obj of sample.txt
                                File oldName =  new File("new.txt");   //creating obj of new.txt
                                File newName =   new File("sample.txt");  //creating obj of
sample.txt

                                if(delName.delete())        //check condition
                                        System.out.println("record updated successfully");
//printing on console
                                else
                                        System.out.println("Error"); //printing on console

                                if (oldName.renameTo(newName))  //check condition
                                        System.out.println("Renamed successfully");    //printing on
console
                                else
                                        System.out.println("Error");    //printing on console

                                }
                        catch(FileNotFoundException e)  {  //Exception handling
                                System.out.println("\nERROR : File not Found !!!"); //printing on console
                                }
                        }

        // ---------------------- addRecords method ---------------------- //
        public void clear(String filename) throws IOException  {
                // Create a blank file
                PrintWriter pw = new PrintWriter(new BufferedWriter(new FileWriter(filename)));
                pw.close(); //closing PrintWriter object
                System.out.println("\nAll Records cleared successfully !");
                //printing on console
```

```
		}

}

// ========================= MAIN CLASS ========================//
public class Main{
	public static void main(String args[]) throws IOException  {
		Database f = new Database(); //creating obj of Database class
		Scanner sc =new Scanner(System.in);//creating object of scanner class
		System.out.println("");
		while(true) {
			//menu driven
		System.out.print("1. Add Records\n2. Display Records\n3. Clear All Records\n4. Search Records"
					+ "\n5. Delete Records\n6. Update Records \n7. Exit\n\nEnter your choice : ");
		int choice = sc.nextInt();//taking input from user
		System.out.println("");

		//switch Case
		switch(choice)  {
		case 1:
			f.addRecords();  //calling addRecords method
	System.out.println("\n================================================\n");
			break;

		case 2:
			f.readRecords();   //calling readRecords method
	System.out.println("\n================================================\n");
			break;
```

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            case 3:
                f.clear("sample.txt"); //calling clear method
System.out.println("\n=================================================\n");
                break;

            case 4:
                f.searchRecords(); //calling searchRecords method
System.out.println("\n=================================================\n");
                break;

            case 5:
                f.deleteRecords();//calling deleteRecords method
System.out.println("\n=================================================\n");
                break;

            case 6:
                f.updateRecords(); //calling updateRecords method
System.out.println("\n=================================================\n");
                break;

            case 7:
System.out.println("\n=================================================\n");
                System.exit(0);//stop execution of program
                break;

            default:
                System.out.println("\nInvalid Choice !"); //default case
```

```
            System.out.println("\n=====================================================\n");
                                    break;
                                    }
                            }

            }

}
```

/*

##OUTPUT##

1. Add Records
2. Display Records
3. Clear All Records
4. Search Records
5. Delete Records
6. Update Records
7. Exit

Enter your choice : 3

All Records cleared successfully !

==========

1. Add Records

2. Display Records

3. Clear All Records

4. Search Records

5. Delete Records

6. Update Records

7. Exit

Enter your choice : 1

Enter Student Name: vaibhav

Student Id: 12

Roll no: 12

Address: pune

Class: 10

Marks : 489

Records added successfully !

Do you want to add more records ? (y/n) : y

Enter Student Name: om

Student Id: 34

Roll no: 34

Address: jalgaon

Class: 9

Marks : 479

Records added successfully !

Do you want to add more records ? (y/n) : y

Enter Student Name: yash

Student Id: 67

Roll no: 67

Address: Aurangabad

Class: 9

Marks : 467

Records added successfully !

Do you want to add more records ? (y/n) : y

Enter Student Name: Diptesh

Student Id: 76

Roll no: 76

Address: Dhule

Class: 10

Marks : 495

Records added successfully !

Do you want to add more records ? (y/n) : y

Enter Student Name: Harsh

Student Id: 39

Roll no: 39

Address: Satara

Class: 11

Marks : 481

Records added successfully !

Do you want to add more records ? (y/n) : n

==========

1. Add Records
2. Display Records
3. Clear All Records
4. Search Records
5. Delete Records
6. Update Records
7. Exit

Enter your choice : 2

vaibhav 12 12 pune 10 489.0

om 34 34 jalgaon 9 479.0

yash 67 67 Aurangabad 9 467.0

Diptesh 76 76 Dhule 10 495.0

Harsh 39 39 Satara 11 481.0

==========

1. Add Records
2. Display Records
3. Clear All Records
4. Search Records
5. Delete Records
6. Update Records
7. Exit

Enter your choice : 4

Enter an id of the student you want to search: 34

Record found

om 34 34 jalgaon 9 479.0

==========

1. Add Records
2. Display Records
3. Clear All Records
4. Search Records
5. Delete Records
6. Update Records
7. Exit

Enter your choice : 4

Enter an id of the student you want to search: 66

Record not found

==========

1. Add Records
2. Display Records
3. Clear All Records
4. Search Records
5. Delete Records
6. Update Records
7. Exit

Enter your choice : 5

Enter the name of the student you want to delete: om

Record found

deleted successfully

Renamed successfully

==========

1. Add Records
2. Display Records
3. Clear All Records
4. Search Records
5. Delete Records
6. Update Records
7. Exit

Enter your choice : 6

Enter the name of the student you want to update: vaibhav

Record found

Enter updated marks: 500

record updated successfully

Renamed successfully

==========

1. Add Records
2. Display Records
3. Clear All Records
4. Search Records
5. Delete Records
6. Update Records
7. Exit

Enter your choice : 3

All Records cleared successfully !

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1. Add Records
2. Display Records
3. Clear All Records
4. Search Records
5. Delete Records
6. Update Records
7. Exit

Enter your choice : 7

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*/