//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.

*/

//package assignment;

import java.io.*;

import java.util.*;

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


```java
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
```

```java
                    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();

            }


        // --------------------- read Records method --------------------- //

        public void readRecords() throws IOException  {

                try  {

                        // Open the file
```

```java
            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

        }

}


// --------------------- seach Records 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
```

```java
                    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("sample.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
```

```java
                }
                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 --------------------- //
```

```java
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("sample.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
```

```java
                    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 F1{

        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;
```

```java
            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 : 1

Enter Student Name: Vihaan

Student Id: 201

Roll no: 5

Address: Hydrabad

Class: 1

Marks : 97

Records added successfully !

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

Enter Student Name: Manish

Student Id: 202

Roll no: 6

Address: Varanasi

Class: 1

Marks : 90

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

Dinesh 101 1 pune 1 89.0

Rima 102 2 Mumbai 2 50.0

Vihaan 201 5 Hydrabad 1 97.0

Manish 202 6 Varanasi 1 90.0

===

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: 201

Record found

Vihaan 201 5 Hydrabad 1 97.0

===

1. Add Records

2. Display Records

3. Clear All Records

4. Search Records

5. Delete Records

6. Update Records

7. Exit

Enter your choice : 6

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

Record found

Enter updated marks: 85

record updated successfully

Error

===

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

ERROR : File 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

ERROR : File 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 : 7

==