Assignment No:7

1.Write a Java program that reads data from a sample.txt file located outside the program's directory.

```
import java.io.*;
import java.util.*;
public class ReadFile {
   public static void main(String[] args) {
      try {
        File file = new File("sample.txt");
         Scanner sc = new Scanner(file);
System.out.println("Reading file content:");
         while (sc.hasNextLine()) {
            String line = sc.nextLine();
            System.out.println(line);
         }
         sc.close();
      } catch (FileNotFoundException e) {
         System.out.println("File not found: " +
e.getMessage());
      }
   }
}
```

sample.txt contains:

Hello, Divya Here.

Welcome to file reading in Java.

Output:

Reading file content:

Hello, Divya Here.

Welcome to file reading in Java.

2.Develop a Java program that performs the following operations:

- Accept student information such as name, age, weight, height, city, and phone number from the user.

○ Store this information in a file using DataOutputStream along with

FileOutputStream.

○ Retrieve and display the data using DataInputStream along with FileInputStream.

```
import java.io.*;
import java.util.*;
public class StudentInfo {
   public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);
      System.out.print("Enter student name: ");
      String name = sc.nextLine();
      System.out.print("Enter student age: ");
      int age = sc.nextInt();
      System.out.print("Enter student weight:
");
      double weight = sc.nextDouble();
      System.out.print("Enter student height:
");
      double height = sc.nextDouble();
      sc.nextLine();
      System.out.print("Enter student city: ");
      String city = sc.nextLine();
      System.out.print("Enter student phone
number: ");
      String phoneNumber = sc.nextLine();
```

```
try (DataOutputStream dos = new DataOutputStream(new FileOutputStream("studentInfo.dat"))) {
            dos.writeUTF(name);
            dos.writeInt(age);
            dos.writeDouble(weight);
            dos.writeDouble(height);
            dos.writeUTF(city);
            dos.writeUTF(phoneNumber);
            System.out.println("\nData has been written to the file.");
        } catch (IOException e) {
            System.out.println("Error while writing to file: " + e.getMessage());
        }try (DataInputStream dis = new DataInputStream(new FileInputStream("studentInfo.dat"))) {
            System.out.println("\nReading student information from file:");
            System.out.println("Name: " + dis.readUTF());
            System.out.println("Age: " + dis.readInt());
            System.out.println("Weight: " + dis.readDouble());
            System.out.println("Height: " + dis.readDouble());
            System.out.println("City: " + dis.readUTF());
            System.out.println("Phone Number: " + dis.readUTF());
        } catch (IOException e) {
            System.out.println("Error while reading from file: " + e.getMessage());
        }sc.close();
    }
```

Output:

Enter student name: Divya Sutar

Enter student age: 20

Enter student weight: 45

Enter student height: 5.1

Enter student city: Kolhapur

Enter student phone number: 8275663299

Data has been written to the file.

Reading student information from file:

Name: Divya Sutar

Age: 20

Weight: 45

Height: 5.1

City: Kolhapur

Phone Number: 8275663299

2.Write a Java program to read a text file and compute the following:

- The total number of vowels in the file.
- The total number of words in the file.
- The number of times the character `'a'` appears in the file.

```
import java.io.*;
public class FileAnalysis {
    public static void main(String[] args) {

        File file = new File("sample.txt");
```

```
        int vowelCount = 0;
        int wordCount = 0;
        int aCount = 0;
        try (BufferedReader br = new BufferedReader(new FileReader(file))) {
            String line;
            while ((line = br.readLine()) != null) {
                for (int i = 0; i < line.length(); i++) {
                    char ch = line.charAt(i);
                    if (isVowel(ch)) {
                        vowelCount++;
                    }
                    if (ch == 'a' || ch == 'A') {
                        aCount++;
                    }
                }
                String[] words = line.split("\\s+");
                wordCount += words.length;
            }
            System.out.println("Total number of vowels: " + vowelCount);
            System.out.println("Total number of words: " + wordCount);

            System.out.println("Number of times 'a' appears: " + aCount);
        } catch (IOException e) {
            System.out.println("Error reading the file: " + e.getMessage());
        }
    }
    private static boolean isVowel(char ch) {
        ch = Character.toLowerCase(ch);
        return ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u';
    }
}
```

Sample.txt contains:

Hello, Everyone Myself Divya Sutar.

I am from Kadamwadi,Kolhapur.

Currently studying in DYPCET !

Output:

Total number of vowels: 24

Total number of words: 13

Number of times 'a' appears: 7

3.Write a program that takes a file name as input through the command line.

- If the file exists, open it and display its contents.
- After displaying the contents, ask the user: “Do you want to add data to the end of the file?”
- If the user's response is **"Yes"**, accept data from the user and append it to the file.

- If the file does **not** exist, create a new file and allow the user to input data to store in it.
- The user should type **“exit”** on a new line to stop entering data. Implement this program using **character stream classes**.

```
import java.io.*;

import java.util.*;

public class FileHandler {

   public static void main(String[] args) {

      Scanner sc = new Scanner(System.in);




      System.out.print("Enter the file name: ");

      String fileName = sc.nextLine();

      File file = new File(fileName);

      if (file.exists()) {

         try (BufferedReader br = new BufferedReader(new FileReader(file))) {

            String line;


System.out.println("\nFile contents:");

            while ((line = br.readLine()) != null) {


System.out.println(line);

            }

         } catch (IOException e) {


System.out.println("Error reading the file: " + e.getMessage());

         }

      } else {

         try {

            if (file.createNewFile()) {


System.out.println("File created: " + fileName);

            } else {


System.out.println("File already exists.");

            }

         } catch (IOException e) {


System.out.println("Error creating the file: " + e.getMessage());

         }

      }

      System.out.print("\nDo you want to add data to the end of the file? (Yes/No): ");

      String response = sc.nextLine();

      if (response.equalsIgnoreCase("Yes")) {

         try (BufferedWriter bw = new BufferedWriter(new FileWriter(file, true))) {
```

```
System.out.println("Enter data to append. Type 'exit' on a new line to stop:");

            String userInput;

            while (!(userInput = sc.nextLine()).equalsIgnoreCase("exit")) {

bw.write(userInput);

                bw.newLine();

            }

System.out.println("Data has been appended to the file.");

        } catch (IOException e) {

System.out.println("Error writing to the file: " + e.getMessage());

        }

    }

    sc.close();

  }

}
```

Output:

```
Enter the file name: sample.txt

File contents:

Hello, this is a sample file.

Do you want to add data to the end of the file? (Yes/No): Yes

Enter data to append.

This is new data being appended.

exit

Data has been appended to the file.

Enter the file name: newFile.txt


File created: newFile.txt

Do you want to add data to the end of the file? (Yes/No): Yes

Enter data to append.

First line of new data.

Second line of new data.

exit

Data has been appended to the file.
```