```java
package Ex1_2_3.src;

import java.io.BufferedReader;
import java.io.FileReader;
import java.io.IOException;
import java.util.ArrayList;

public class Main {
    public static void main(String[] args) {
        // Ex3
        try {
            // Ex1
            ArrayList<Double> resultado = readValues("valores.txt");
            System.out.println(resultado.toString());
            // Ex2
            System.out.printf("SOMA: %.4f", sumOfValues("valores.txt"));
        } catch (NumberFormatException e) {
            System.out.println(e.getMessage());
        } catch (IOException e) {
            System.out.println(e.getMessage());
        }
    }
    // Ex1
    public static ArrayList<Double> readValues(String fileName) throws NumberFormatException,
IOException {
        ArrayList<Double> valores = new ArrayList<>();
        FileReader arq = new FileReader(fileName);
        BufferedReader leitor = new BufferedReader(arq);
        String linha;
        while ((linha = leitor.readLine()) != null ) {
            valores.add(Double.parseDouble(linha));
        }
        arq.close();
        leitor.close();
        return valores;
    }
    //Ex2
    public static double sumOfValues(String fileName) throws NumberFormatException,
IOException {
        ArrayList<Double> numeros = readValues(fileName);
        double soma = 0;
        for (Double n : numeros) {
            soma += n;
        }
        return soma;
    }
}
```

```java
package Ex4.src;
import java.io.IOException;
import java.io.PrintWriter;
import java.nio.file.Paths;
import java.util.Scanner;
public class Main {
    public static void main(String[] args) {
        method();
    }
    public static void method() {
        Scanner in = null;
        PrintWriter out = null;
        try {
            in = new Scanner(Paths.get("words.txt"));
            out = new
            PrintWriter("output.txt");
            while (in.hasNext()) {
                out.println(in.next().toLowerCase());
            }
        } catch (IOException e) {
            System.err.println(e.getMessage());
        } catch (SecurityException e) {
            System.out.println(e.getMessage());
        } finally {
            in.close();
            if (in.ioException() !=  null)
                System.out.println("Deu erro");
            out.close();
            if (out.checkError() != true)
            System.out.println("Deu erro");
        }}}
```

```java
package Ex5.src;
import java.nio.file.Path;
import java.nio.file.Paths;
public class Main {
    public static void main(String[] args) {
        Path path = Paths.get("Ex5.txt");
        System.out.println("Letra A: " + ABC.letraA(path));
        System.out.println("Letra B: " + ABC.letraB(path));
        System.out.println("Letra C: " + ABC.letraC(path));
    }}
```

```java
package Ex5.src;
import java.io.BufferedReader;
import java.io.IOException;
import java.nio.charset.StandardCharsets;
import java.nio.file.Files;
import java.nio.file.Path;
public class ABC {
    public static String letraA(Path path) {
        String result = null;
        BufferedReader in = null;
        try {
            in = Files.newBufferedReader(path, StandardCharsets.UTF_8);
            result = in.readLine();
        } catch (IOException e) {
            System.out.println(e.getMessage());
        } finally {
            if (in != null) {
                try {
                    in.close();
                } catch (IOException e) {
                    System.out.println(e.getMessage());
                }}}
        return result;}
    public static String letraB(Path path) {
        String result = null;
        BufferedReader in = null;

        try {
            try {
                in = Files.newBufferedReader(path, StandardCharsets.UTF_8);
                result = in.readLine();
            } finally {
                if (in != null) {
                    in.close();
                }}
        } catch (IOException e) {
            System.out.println(e.getMessage());
        }
        return result;}
    public static String letraC(Path path) {
        String result = null;
        try (BufferedReader in = Files.newBufferedReader(path, StandardCharsets.UTF_8)) {
            result = in.readLine();
        } catch (IOException e) {
            System.out.println(e.getMessage());}
        return result;}}
```

```java
package Ex6.src;
import java.util.ArrayList;
public class Main {
    public static void main(String[] args) {
        Pilha<String> nomes = new Pilha<String>();
        nomes.push("a");
        nomes.push("b");
        nomes.push("c");
        nomes.push("d");
        for (String string : nomes.pilha) {
            System.out.println(string);}}
    public static class Pilha<E> {
        ArrayList<E> pilha = new ArrayList<>();
        public void push(E elemento){
            pilha.add(0, elemento);}
        public void pop() {
            pilha.remove(0);}
        public boolean isVazia(){
            return pilha.isEmpty();
        }}}
```

```java
package Ex7.src;
import java.util.Arrays;
public class Pilha_O {
    private Object array[] = new Object[3];
    private int indice = 0;
    public void push(Object elemento) {
        if (indice < array.length){
            array[indice++] = elemento;
        } else {
            array = Arrays.copyOf(array, array.length*2);
            array[indice++] = elemento;}}
    public Object pop() {
        return array[--indice];}
    public void show() {
        int aux = indice;
        while (--aux >= 0)
            System.out.println(array[aux]);
        System.out.println();}}
```

```java
package Ex7.src;
import java.util.Arrays;
public class Pilha_E<E> {
    private E[] array = (E[]) new Object[3];
    private int indice = 0;
    public void push(E elemento) {
        if (indice < array.length){
            array[indice++] = elemento;
        } else {
            array = Arrays.copyOf(array, array.length*2);
            array[indice++] = elemento;}}
    public E pop() {
        return array[--indice];}
    public void show() {
        int aux = indice;
        while (--aux >= 0)
            System.out.println(array[aux]);
        System.out.println();}}
```

```java
package Ex7.src;
public class Mian {
    public static void main(String[] args) {
        System.out.println("OBJECT:");
        Pilha_O nomes = new Pilha_O();
        nomes.push("Amenadiel");
        nomes.push("Angelo");
        nomes.push("Gabriel");
        nomes.push("João");
        nomes.show();
        System.out.println("Removido: " + nomes.pop() + "\n");
        nomes.show();
        System.out.println("E[]:");
        Pilha_E<String> nomes2 = new Pilha_E<>();
        nomes2.push("Amenadiel");
        nomes2.push("Angelo");
        nomes2.push("Gabriel");
        nomes2.push("Weslayne");
        nomes2.show();
        System.out.println("Removido: " + nomes2.pop() + "\n");
        nomes2.show();}}
```

```java
package Ex8_9.src;
public class Entry<K, V> {// Ex8
    private K key;
    private V value;
    public Entry(K key, V value) {
        this.key = key;
        this.value = value;}
    public K getKey() {
        return key;}
    public V getValue() {
        return value;}
    public void setKey(K key) {
        this.key = key;}
    public void setValue(V value) {
        this.value = value;}
    @Override
    public String toString() {
        return "Entry [key=" + key +
        ", value=" + value + "]";
    }}
```

```java
package Ex8_9.src;
import java.util.ArrayList;
public class Table<K, V> { // Ex8
    private ArrayList<Entry<K, V>> entrada = new ArrayList<>();
    public void add(K key, V value) { // Ex 9
        for (Entry<K, V> entry : entrada) {
            if (entry.getKey() == key) {
                entry.setValue(value);
                return;}}
        entrada.add(new Entry<K, V>(key, value));}
    public void remove(K key) { // Ex 9
        for (int i = 0; i < entrada.size(); i++) {
            if (entrada.get(i).getKey() == key) {
                entrada.remove(i);}}}
    public V get(K key) { // Ex 9
        for (Entry<K, V> entry : entrada) {
            if (entry.getKey() == key) {
                return entry.getValue();}}
        return null;}}
```

```java
package Ex8_9.src;
public class Main {
    public static void main(String[] args) {
        Table<String, Integer> tabela = new Table<>();
        tabela.add("Isabela", 1);
        tabela.add("Larissa", 2);
        tabela.add("Camila", 3);
        System.out.println(tabela.get("Camila"));
        tabela.add("Camila", 5);
        System.out.println(tabela.get("Camila"));
        tabela.remove("Camila");
        System.out.println(tabela.get("Camila"));}}
```

```java
package Ex10.src;
public class Main {
    public static void main(String[] args) {
        Table<String, Integer> tabela = new Table<>();
        tabela.add("Isabela", 1);
        tabela.add("Larissa", 2);
        tabela.add("Camila", 3);
        System.out.println(tabela.get("Camila"));
        tabela.add("Camila", 5);
        System.out.println(tabela.get("Camila"));
        tabela.remove("Camila");
        System.out.println(tabela.get("Camila"));}}
```

```java
package Ex10.src;
import java.util.ArrayList;
public class Table<K, V> {
    private static class Entry<K, V> {
        K key;
        V value;
        public Entry(K key, V value) {
            this.key = key;
            this.value = value;}
        public K getKey() {
            return key;}
        public void setKey(K key) {
            this.key = key;}
        public V getValue() {
            return value;}
        public void setValue(V value) {
            this.value = value;}
        @Override
        public String toString() {
            return "Entry [key=" + key + ", value=" + value + "]";
        }}
    private ArrayList<Entry<K, V>> entrada = new ArrayList<>();
    public void add(K key, V value) {
        for (Entry<K, V> entry : entrada) {
            if (entry.getKey() == key) {
                entry.setKey(key);
                entry.setValue(value);
                return;}}
        entrada.add(new Entry<K, V>(key, value));}
    public void remove(K key) {
        for (int i = 0; i < entrada.size(); i++) {
            if (entrada.get(i).getKey() == key) {
                entrada.remove(i);}}}
    public V get(K key) {
        for (Entry<K, V> entry : entrada) {
            if (entry.getKey() == key) {
                return entry.getValue();}}
        return null;}}
```

```java
package Ex1.src;
import java.util.ArrayList;
import java.util.List;
public class Main {
    public static void main(String[] args) throws Exception {
        ArrayList<Integer> v1 = new ArrayList<>(List.of(1, 2, 3));
        ArrayList<Integer> v2 = new ArrayList<>(List.of(4, 5, 6));
        System.out.println("? extends E: " + junta1(v1, v2));
        System.out.println("? super E: " + junta2(v1, v2));}
    public static <E> ArrayList<E> junta1(ArrayList<? extends E> array1, ArrayList<E> array2){
        ArrayList<E> resultado = new ArrayList<>();
        resultado.addAll(array1);
        resultado.addAll(array2);
        return resultado;}
    public static <E> ArrayList<?> junta2(ArrayList<? super E> array1, ArrayList<E> array2){
        ArrayList<Object> resultado = new ArrayList<>();
        resultado.addAll(array1);
        resultado.addAll(array2);
        return resultado;}}
```

```java
package Ex2.src;
public class Pair<E extends Comparable<E>>{
    private E primeiro, segundo;
    public Pair(E primeiro, E segundo) {
        this.primeiro = primeiro;
        this.segundo = segundo;}
    public E getPrimeiro() {
        return primeiro;}
    public E getSegundo() {
        return segundo;}
    public E getMax() {
        return primeiro.compareTo(segundo) > 0 ? primeiro : segundo;}
    public E getMin() {
        return primeiro.compareTo(segundo) > 0 ? segundo : primeiro;}}
```

```java
package Ex3.src;
import java.util.ArrayList;
import java.util.HashSet;
import java.util.Set;
public class Sieve {
    public static ArrayList<Integer> sieveAL(int n) {
        boolean prime[] = new boolean[n+1];
        ArrayList<Integer> result = new ArrayList<>();
        for(int i=0;i<=n;i++)
            prime[i] = true;
        for(int p = 2; p*p <=n; p++) {
            if(prime[p] == true) {
                for(int i = p*p; i <= n; i += p)
                    prime[i] = false;}}
        for(int i = 2; i <= n; i++) {
            if(prime[i] == true)
                result.add(i);}
        return result;}
    public static Set<Integer> sieveHash(int n) {
        Set<Integer> result = new HashSet<Integer>();
        for (int i = 2; i <= n; i++)
            result.add(i);
        for (int i = 2; i <= n; i++) {
            if (result.contains(i*i) )
                result.remove(i*i);}
        for (int i = 2; i <= n; i++) {
            for (int k = 0, j = i*(i+k); k <= n; j = i*(i+k++)){
                if( result.contains(j) ) {
                    result.remove(j);}}}
        return result;}}
```

```java
package Ex2.src;
public class Main {
    public static void main(String[] args) {
        Pair<String> pair1 = new Pair<String>("Camaleão", "Caranguejo");
        System.out.println("Pair1: " + pair1.getPrimeiro() + " " + pair1.getSegundo());
        System.out.println("Max: " + pair1.getMax());
        System.out.println("Min: " + pair1.getMin());
        Pair<Integer> pair2 = new Pair<Integer>(50, 1000);
        System.out.println("Pair2: " + pair2.getPrimeiro() + " " + pair2.getSegundo());
        System.out.println("Max: " + pair2.getMax());
        System.out.println("Min: " + pair2.getMin());
    }
}
```

```java
package Ex3.src;
public class Main {
    public static void main(String[] args) {
        System.out.println(Sieve.sieveAL(100));
        System.out.println(Sieve.sieveHash(100));}}
```

```java
package Ex4.src;
import java.util.ArrayList;
import java.util.List;
public class Main {
    public static void main(String[] args) {
        ArrayList<String> nome = new ArrayList<>(List.of("kuririn", "naruto", "chapolin"));
        System.out.println("Letra A: " + UperCase.letraA(nome));
        System.out.println("Letra B: " + UperCase.letraB(nome));
        System.out.println("Letra C: " + UperCase.letraC(nome));
        System.out.println("Original: " + nome);}}
```

```java
package Ex4.src;
import java.util.ArrayList;
import java.util.Iterator;
public class UperCase {
    public static ArrayList<String> letraA(ArrayList<String> array){
        Iterator<String> iter = array.iterator();
        var result = new ArrayList<String>();
        while (iter.hasNext()) {
            result.add(iter.next().toUpperCase());}
        return result;}
    public static ArrayList<String> letraB(ArrayList<String> array){
        var result = new ArrayList<>(array);
        for (int i = 0; i < array.size(); i++)
            result.set(i, result.get(i).toUpperCase());
        return result;}
    public static ArrayList<String> letraC(ArrayList<String> array){
        var result = new ArrayList<>(array);
        result.replaceAll(String::toUpperCase);
        return result;}}
```

```java
package Ex5.src;
import java.io.File;
import java.io.FileNotFoundException;
import java.util.Scanner;
import java.util.TreeMap;
public class Main {
    public static void main(String[] args) {
        System.out.println(count("words.txt"));}
    public static TreeMap<String, Integer> count(String path) {
        try {
            Scanner txt = new Scanner(new File(path));
            TreeMap<String, Integer> result = new TreeMap<>();
            while (txt.hasNext()) {
                String palavra = txt.next();
                if (palavra != "") {
                    result.compute(palavra,(k , v) -> v == null ? 1 : v+1);
               }}txt.close();
            return result; } catch (FileNotFoundException e) {
            System.out.println(e.getMessage());}
        return null;}}
```