```java
// ============== Loesungsvorschlag A2 ==============================
package a2_Lsg;
import java.util.Scanner;
import java.io.*;
public class TextSaver {
    public static void main(String[] args) throws IOException{
        Scanner aScanner = new Scanner ( System.in );

        PrintWriter pw = new PrintWriter( new FileWriter("textsaver.txt"));
        //oder alternativ:
        // PrintWriter pw = new PrintWriter( "textsaver.txt" );

        String  zeile;
        do {
            zeile = aScanner.nextLine();
            pw.println(zeile);
        } while ( !zeile.equalsIgnoreCase("exit") );
        pw.close();
        System.out.println("Tschüss...");
    }

}

// ============== Loesungsvorschlag A3 ==============================
package a3_Lsg;
import java.io.*;
public class CopyLines {
    public static void main(String[] args)  {

        try (BufferedReader in = new BufferedReader(new FileReader("xanadu.txt"));
             PrintWriter out = new PrintWriter(new FileWriter("xanadu_linecopy.txt"));)
        {
            String l;
            while ((l = in.readLine()) != null) {
                out.println(l);
            }
        } catch (FileNotFoundException e) {
            e.printStackTrace();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}

// ============== Loesungsvorschlag A4 ==============================
package a4_lsg;
import java.io.*;
public class CountLetters {
    private char lookFor;
    private File file;

    CountLetters(char lookFor, File file) {
        this.lookFor = lookFor;
        this.file = file;
    }

    public int count() throws IOException {
        int count = 0;
        InputStream in = null;
        BufferedReader reader = null;
        try {
```

```
            in = new FileInputStream (file);
            reader = new BufferedReader(new InputStreamReader(in));
            String line = null;
            while ((line = reader.readLine()) != null) {
                for (int i = 0; i < line.length(); i++) {
                    if (lookFor == line.charAt(i)) {
                        count++;
                    }
                }
            }
        } catch (IOException x) {
            System.err.println(x);
        } finally {
            if (reader != null) reader.close();
            else if (in != null) in.close();
        }
        return count;
    }

    static void usage() {
        System.out.println("usage: java CountLetter <letter>");
        System.exit(-1);
    }

    public static void main(String[] args) throws IOException {
        if (args.length != 1 || args[0].length() != 1)
            usage();
        char lookFor = args[0].charAt(0);
        File file = new File("xanadu_unicode.txt");
        int count = new CountLetters(lookFor, file).count();
        System.out.format("File '%s' has %d instances of letter '%c'.%n",
                file, count, lookFor);
    }
}

// ============== Loesungsvorschlag A5 ==============================
package a5_wetterdaten;
import java.io.BufferedReader;
import java.io.FileReader;
import java.io.PrintWriter;
import java.io.IOException;
import java.util.*;

public class WetterAuswertung {

    // Aufgabe 5a
    public static void convertToCSV(String filename, char delimiter){
        String csvfilename = filename.substring(0, filename.lastIndexOf('.') )+".csv";
        try(BufferedReader in = new BufferedReader( new FileReader(filename));
            PrintWriter out = new PrintWriter(csvfilename);){
                String line;
                String monat = in.readLine();
                while( (line = in.readLine() ) != null ){
                    if(line.startsWith("#")){
                        // Kommentare ignorieren
                    } else if (line.startsWith("Datum")) {
                        // Kopfzeile
                        out.print(monat);
                        String[] word = line.split(" +");
                        for(int i=1; i<word.length;i++){
                            out.print(delimiter);
```

```
                        out.print(word[i]);
                    }
                    out.println();
                } else {
                    // Datenzeilen
                    String[] word = line.split(" +");
                    out.print(word[0].substring(0,2));
                    for(int i= 1; i< word.length; i++){
                        out.print(delimiter);
                        out.print(word[i].replace('.', ','));
                    }
                    out.println();
                }
            }
            System.out.println("Konvertierung nach "+csvfilename+" erfolgreich");
        } catch(IOException e){
            e.printStackTrace();
        }

    }

    public static void main(String[] args) throws IOException{
        convertToCSV("wetterdaten_feldberg.txt", ';');  // A5a
        generateSummary("wetterdaten_feldberg.txt",
                        "wetterdaten_feldberg_ergebnis.txt"); // A5b
    }

    // Aufgabe 5b
    public static void generateSummary(String filename, String resultname){
        ArrayList<float[]> mwList = new ArrayList<float[]>();
        try(BufferedReader in = new BufferedReader( new FileReader(filename));
            PrintWriter out = new PrintWriter(resultname);){
            String line;
            // Kopfzeile uebernehmen
            out.println(in.readLine());
            while( (line = in.readLine() ) != null ){
                if(line.startsWith("#") ){
                    // Kommentare direkt wieder schreiben
                    out.println(line);
                } else if(line.startsWith("Datum")) {
                    // Ueberschriftszeile ohne Datum mit Spaltenbreite 8 schreiben
                    String[] word = line.split(" +");
                    out.printf("%8s","");
                    for(int i=1; i<word.length;i++){
                        out.printf("%8s", word[i]);
                    }
                    out.println();
                } else {
                    // Datenzeile in Array von float umwandeln und mwList speichern
                    String[] word = line.split(" +");
                    float[] messreihe = new float[word.length-1];
                    for(int i=1; i<word.length;i++){
                        messreihe[i-1] = Float.parseFloat(word[i]);
                    }
                    mwList.add(messreihe);
                }
            }
            calculateAndPrint(mwList, out);
            System.out.println("Zusammenfassung "+resultname +" erfolgreich erzeugt");
        }
        catch(IOException e){
```

```
            e.printStackTrace();
        }
    }

    public static void calculateAndPrint(ArrayList<float[]> messw, PrintWriter out){
        // erste Messreihe holen und in Hilfsarrays anlegen/initialisieren
        float[] first = messw.get(0);
        float[] min = Arrays.copyOf(first, first.length);
        float[] max = Arrays.copyOf(first, first.length);
        float[] avg = new float[first.length];
        // eigentliche Auswertung
        for(float[] reihe: messw){
            for(int i=0; i< reihe.length; i++){
                if(reihe[i] < min[i]){
                    min[i] = reihe[i];
                }
                if(reihe[i] > max[i]){
                    max[i] = reihe[i];
                }
                avg[i] += reihe[i];
            }
        }
        // und ausgeben
        out.printf("%n%8s", "Minimum");
        for(int i=0; i< min.length; i++){
            out.printf("%8.1f", min[i]);
        }
        out.printf("%n%8s", "Mittel");
        for(int i=0; i< avg.length; i++){
            avg[i] = avg[i] / messw.size(); // Mittelwert berechnen
            out.printf("%8.1f", avg[i]);
        }
        out.printf("%n%8s", "Maximum");
        for(int i=0; i< max.length; i++){
            out.printf("%8.1f", max[i]);
        }
    }
}

// =============== Loesungsvorschlag A6 ==============================
package a6_Lsg;
import java.io.*;
import java.util.*;
import java.io.Serializable;
import java.time.*;

class Mitarbeiter implements Serializable {

    private static final long serialVersionUID = -5982004882788579252L;
    private String name;
    private int pnr;
    private double gehalt;

    public Mitarbeiter(String name, int pnr, double gehalt) {
        super();
        this.name = name;
        this.pnr = pnr;
        this.gehalt = gehalt;
    }
    public String getName() {
        return name;
```

```
    }
    public int getPnr() {
        return pnr;
    }
    public double getGehalt() {
        return gehalt;
    }
    public void print() {
        System.out.println(name + "|" + pnr + "|" + gehalt);
    }
}

public class ObjectStorage {

    public static void main(String[] args) throws IOException {

        Mitarbeiter[] mList = { new Mitarbeiter("Mueller", 1234, 1250.0),
                                new Mitarbeiter("Maier", 1267, 2730.0),
                                new Mitarbeiter("Bond", 7, 56700.0) };
        ObjectOutputStream out = null;
        ObjectInputStream in = null;
        try {
            out = new ObjectOutputStream(
                    new FileOutputStream("Mitarbeiter.obj"));
            // Datum schreiben
            out.writeObject(LocalDate.now());

            // Mitarbeiter-Array schreiben
            out.writeObject(mList);
            out.close();

            // Array löschen
            mList = null;

            in = new ObjectInputStream(new FileInputStream("Mitarbeiter.obj"));
            int i = 0;
            try {
                // Datum einlesen und ausgeben
                LocalDate date = (LocalDate) in.readObject();
                System.out.printf("%td.%<tm.%<tY %n", date);

                // Mitarbeiterarray wieder einlesen
                Object obj = in.readObject();
                if(obj instanceof Mitarbeiter[]){
                    mList = (Mitarbeiter[])obj;
                } else {
                    System.out.println("kein Mitarbeiter[] im ObjectInpuStream gefunden");
                }
            } catch (EOFException e) {
            } catch (ClassNotFoundException e) {
                e.printStackTrace();
            }
            // Liste ausgeben
            for (Mitarbeiter m : mList) {
                m.print();
            }
        } finally {
            if (out != null)
                out.close();
            if (in != null)
                in.close();
```

```
        }
    }
}

// ============== Loesung A7 ============================
Die Zahl heisst 4711
```