

Interface Comparable

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Interface Comparable

<https://docs.oracle.com/javase/10/docs/api/java/lang/Comparable.html>

```
public interface Comparable<T> {  
    int compareTo(T o);  
}
```

Problema motivador

Faça um programa para ler um arquivo contendo nomes de pessoas (um nome por linha), armazenando-os em uma lista. Depois, ordenar os dados dessa lista e mostra-los ordenadamente na tela. Nota: o caminho do arquivo pode ser informado "*hardcode*".

Maria Brown
Alex Green
Bob Grey
Anna White
Alex Black
Eduardo Rose
Willian Red
Marta Blue
Alex Brown

```
package application;

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

public class Program {

    public static void main(String[] args) {

        List<String> list = new ArrayList<>();
        String path = "C:\\temp\\in.txt";

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

            String name = br.readLine();
            while (name != null) {
                list.add(name);
                name = br.readLine();
            }
            Collections.sort(list);
            for (String s : list) {
                System.out.println(s);
            }

        } catch (IOException e) {
            System.out.println("Error: " + e.getMessage());
        }

    }
}
```

Outro problema

Faça um programa para ler um arquivo contendo funcionários (nome e salário) no formato .csv, armazenando-os em uma lista. Depois, ordenar a lista por nome e mostrar o resultado na tela. Nota: o caminho do arquivo pode ser informado "hardcode".

```
Maria Brown,4300.00
Alex Green,3100.00
Bob Grey,3100.00
Anna White,3500.00
Alex Black,2450.00
Eduardo Rose,4390.00
Willian Red,2900.00
Marta Blue,6100.00
Alex Brown,5000.00
```

Interface Comparable

```
public interface Comparable<T> {
    int compareTo(T o);
}
```

```
System.out.println("maria".compareTo("alex"));
System.out.println("alex".compareTo("maria"));
System.out.println("maria".compareTo("maria"));
```

Output:

```
12
-12
0
```

<https://docs.oracle.com/javase/10/docs/api/java/lang/Comparable.html>

Method compareTo:

Parameters:

o - the object to be compared.

Returns:

a negative integer, zero, or a positive integer as this object is less than, equal to, or greater than the specified object.

```

package application;

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

import entities.Employee;

public class Program {

    public static void main(String[] args) {

        List<Employee> list = new ArrayList<>();
        String path = "C:\\temp\\in.txt";

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

            String employeeCsv = br.readLine();
            while (employeeCsv != null) {
                String[] fields = employeeCsv.split(",");
                list.add(new Employee(fields[0], Double.parseDouble(fields[1])));
                employeeCsv = br.readLine();
            }
            Collections.sort(list);
            for (Employee emp : list) {
                System.out.println(emp.getName() + ", " + emp.getSalary());
            }

        } catch (IOException e) {
            System.out.println("Error: " + e.getMessage());
        }

    }
}

```

```

package entities;

public class Employee implements Comparable<Employee> {

    private String name;
    private Double salary;

    public Employee(String name, Double salary) {
        this.name = name;
        this.salary = salary;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public Double getSalary() {
        return salary;
    }

    public void setSalary(Double salary) {
        this.salary = salary;
    }

    @Override
    public int compareTo(Employee other) {
        return name.compareTo(other.getName());
    }

}

```