Exercise 00: Introduction

Preparation: Set up a Java project with Gradle as build system

1. Start Intellij and create a new project named `ex00`
    a. Select Java, Gradle as build system (Groovy), OpenJDK 11
    b. Unselect `Create Git repository` for now
2. After the Gradle build has completed
    a. Create a dummy test class in `src/test/java`
    b. Then right-click on the folder `src/test` and run all tests to make sure everything is working correctly
3. In the menu, select VCS > Enable Version Control >> Git
    a. Select all files and folders except `.gradle, .idea` and `build` and add them to git
    b. Go to the tool window "Commit", select all files in the change list and commit them to git. Type in some commit message like "initial".
    c. Go to the tool window "Git" and check whether you can see the initial commit in your local repository.
4. **Even better: try the instructions from the lecture slides**
    a. Create a new repository in GitLab
    b. Open a terminal, navigate to your folder `ex00` and run this command `git init`
    c. Copy and paste the command from README file in your GitLab
    `git remote add origin https://inf-git.fh-rosenheim.de/<your project name>.git`
    d. Add, commit and push all files except `.gradle,.idea` and `build`

Task 1:

In the main method, write a short program that reads the following text from the console and store it in a variable (use the `Scanner` class): `c.C...c..C.`

Task 2:

Extract the reading functionality from `main` and move it to a new static method. The new method should get called by `main` and return the String.

Task 3:

`.` represents an empty space in the parking area of TH Rosenheim. `C|c` represents a car with | without dangerous cargo
Create suitable classes to model cars and the parking area as a whole.

Task 4:

No one is allowed to park next to a car with dangerous cargo. How many parking spots are actually available? Add a method to the parking area to answer this very question.

Task 5:

If some car tried to park on a free spot illegally, the parking area throws an `IllegalParkingException`. Obviously, any responsible programmer would make sure that these dangerous situations don't go unnoticed.