

Instructions

If you have followed the previous steps correctly, Windows has started, and you see the blue screen. Continue with:

- Starting IntelliJ IDEA via desktop icon or via start-menu
- Select "Open project"
- Select on the U-drive the folder "250113_IP_Exam"

Now you should see 2 different packages, each containing a part of the test. There are, in total, 2 parts that you need to finish. Both parts can run individually and carry equal weight in the grading process.

Part 1

Complete each of the methods in the project in the file `Application1.java` of the folder `part1`. Each method contains a description and has examples so that you know what is asked.

Use the run method to test your own custom methods and make sure the results are correct.

Note: Do not change the name, arguments and return type of the methods.

Below is a brief explanation of the methods in text. A full explanation with examples can be found in the `Javadoc` in the Java-code.

`convertCelsiusToKelvin()`

Convert the temperature from Celsius to the temperature in Kelvin. The formula to convert the temperature from Celsius to Kelvin is to add 273 to the Celsius number.

`calculatePercentageChange()`

Calculate the percentage change between the new value and the old value

`areBothNumbersBiggerThanThreshold()`

Check if both passed numbers are bigger than the threshold value.

`getMatchingValues()`

Find and return only the elements that occur in both lists.

`isSorted()`

Determine if the passed list with numbers is sorted from low to high.

Part 2

Video game ratings - Application

For this assignment the class `Application2.java` in the package `part2` is used. The application as described uses CSV data that can be found in `resources/games.csv`.

The CSV file contains information about popular video games. Each row represents a single game.

Reading the CSV data

The basic code for loading from a CSV file is already prepared in the `loadCSVData()` method.

It's up to you to decide which fields will be loaded and how they will be stored.

Read the other parts of this assignment to choose which fields you will use.

Field	Description
Title	Title of the game
Year	Year in which game was published.
Rating	Rating of the game.
Genre	Genre of the game.

Note: in this assignment you are allowed and suggested to add new methods or change existing ones. This for instance to enable code re-use.

Menu option 1: Load games from csv

In this menu option, you have to load all the games from the `.csv` file and store them in an `ArrayList`.

After successfully loading all games, you should print the message:

`250 games have been loaded`

Where the number 250 should be based on the actual number of games.

Menu option 2: Show highest rated game

Determine, from all games, the highest rated game.

Print this game in the following format: "Title (Rating) Year".

So this should look like this:

`Baldur's Gate III (9.74) 2023`

Menu option 3: Show games for year and highest rated game

First ask the user to enter a year. If the user enters a year that is not between 1990 and 2023, it should keep on asking until the user has entered a valid year.

`Please enter a year (1990–2023): 1800 [enter]`

`Try again, please enter a year between (1990–2023): 2000 [enter]`

Now print all the games from that year, in the same format as under **Menu option 2**, with one addition: Games that have a rating higher or equal to 9, should be printed in "Yellow" color, since they have a gold status. Other games can be printed in the default color.

The result should look like this:

```
-----
-----Video Game Ratings-----
-----
1) Load games from csv
2) Show highest rated game
3) Show games per year and highest rated game
0) Quit.
Please select an option: 3
Please enter a year (1990-2023): 2000

All the games for year:2000
Alice (8.66) 2000
Baldur's Gate II: Shadows of Amn (9.41) 2000
Command & Conquer: Red Alert 2 (8.74) 2000
Deus Ex (9.29) 2000
Diablo II (9.08) 2000
Final Fantasy IX (8.87) 2000
Metal Gear: Ghost Babel (9.17) 2000
Perfect Dark (8.73) 2000
Pokémon Crystal Version (8.76) 2000
The Legend of Zelda: Majora's Mask (9.04) 2000

The highest rated game for this year is:
Baldur's Gate II: Shadows of Amn (9.41) 2000
```

Structure, reuse and neatness

- Keep in mind writing tidy code according to the conventions.
- Reuse code where applicable and make sure everything works.