



# RPG

## Programming Fundamentals 2

### Goals

- ★ Designing a game in JavaFX.
- ★ Using various graphical components in JavaFX.
- ★ Use the observable design pattern.
- ★ **Relevant videos:**
  - Advanced Java Concepts.
  - Lambda Expressions.
  - Simple Graphical Interface with JavaFX.

### Deliverables

1. The code on your Github repository generated by clicking here: <https://classroom.github.com/a/D7hFx6hN>
2. **Team of 3 students.**
3. **Reviewer:** No review.

### Exercise 1 – Your RPG

We provide the core of a RPG game where a Pokemon can move on a grid. The code is not well-structured, you must first separate the code in different classes to ease the development of new functionalities. You now wish to extend it with new functionalities, and improve the code to have a model-view-controller architecture. You can be creative about the task to implement (*e.g.*, fight against monsters, finding objects when moving in the grass, etc.). If you cannot run the program using WSL, please check this link <https://learn.microsoft.com/en-us/windows/wsl/tutorials/gui-apps>.

1. Your first task is to think about the design of this new functionality. Provide a small description of your functionality in the README. Divide your project into small tasks and add as many Github issues as you need to model the tasks of your project.
2. Have fun implementing your idea! The only requirement is to implement a Model-View-Controller (MVC) architecture by at least satisfying these conditions:
  - Put the code relevant to UI in a `ui` package, and the “business logic” in other packages.
  - Use the observer design pattern to keep the business logic code independent from the UI.

**Note about teamwork:** Everybody must implement some functionalities. If somebody is weaker in your group, give them some tasks that are easier and orthogonal to your own functionalities (*e.g.*, tasks that do not prevent you from progressing). The ownership of the code written will be based on the **commit history**. In the *README.md*, you should also add a section describing clearly who did what functionality.

3. **(Examples of functionalities)**
- When walking in the grass, we can encounter a new Pokemon and a Pokemon fight starts (either controlled by the user or fully automatic).
  - We can pick up objects in the grass and they go in an inventory that we can consult.
  - We can build walls in the style of Minecraft (*e.g.*, clicking drop a wall).
  - ...