

## Project – Part 1

*Due Date: 13.12.2020*

Plants vs. Zombies is a simple game written with C++. In this game you will try to plant your flowers by using sun points. In this simple version you have two plant cards:

Sunflower: Creates the sun needed to plant more plants.

Peashooter: Shoots peas at the zombies.

Sun points can be obtained by planting sunflowers and collecting the suns they created. Each time you plant a flower the cost of that flower extracts from your sun points. Zombies appear on random lines from the right of the game screen and have only melee attack. Therefore, you have time to place your plants until they can attack. If any zombie reaches the left line of your screen the game is over. The aim is to hold your defenses as long as possible. (You can check the [original game](#) to learn the basics.)

Source code of the game will be accessible through the lecture git and as a group assignment soon. The game as it is, is not object oriented. Links for videos explaining the structure of the game engine and several other games can be found in the following YouTube channel:

<https://www.youtube.com/channel/UC-yuWVUplUJZvieEligKBkA/featured>

The objective of the first part of the project is to re-design the game following object-oriented design principles. As a first task, you are asked as a group to write an analysis report and upload it to Moodle which includes:

- A Cover Page (with Group Number)
- A Contents Page
- A brief description of the game
- Use Case Diagram and Class diagram (drawn with a program like Modelio, Visio, Smart Draw etc.)
- Explanation of the classes and relations among them.
- Do not forget to include relation cardinalities, directions, and roles.
- You have to use Association / Aggregation and Inheritance relations; you can use Composition but not necessary

Please be careful with indentations, captions, page numbers, etc. in your report. Please use good English and spell-check before you submit. You should include references if you have any.

There will be 15-minute group meetings to discuss your analysis reports. Meetings will be through the zoom. Meetings will start at 9 AM and I will share a questionnaire on Moodle to schedule meetings once all the groups are set.