



2017 - 2018 SPRING

CMP 2004 Advanced Programming

Term Project

You are expected to implement a simple multiplayer network game with the following scenario:

You are controlling a worm and you must survive by eating foods. There are some other worms, non-foods and foods in the game. Non-foods will poison you and it will you make smaller. Food will you make bigger and slower. When you eat, you lose speed in proportion to the value of your food. You can use power up to speed up but you lose your score and make your worm smaller. Game is over when you hit any other players.

Example : <http://slither.io/>



Minimum Criteria:

You are expected to design the game by using java. Below are the minimal criteria:

- Proper object oriented (OO) hierarchy (E.g. non-foods, foods, worms can be implemented that way. Use concepts of interfaces, abstract classes while designing OO hierarchy)
- Each time your worm color must be change.
- Mouse or Key listeners (Both of them must be control your worm. You can use arrows in the keyboard and click your mouse to control it.)
- When you press and hold a button, you can use your power up.
- Minimal GUI elements (Minimal a button, a check box and a text field)
- You need to create online network game. Two can be play the game using different computers. (You don't need to use any server. You can connect two computers to each other with Ethernet cable.)
- You need to show speed, worm length, score and time information using gui elements.
- Graphics (Java 2D API usage while designing your graphical elements)
- Animation
- Create a jar file
- High Score (Keep user high scores for only recent games. Show it in a GUI element, e.g. list box. You do NOT have to save it on disk and load it.)

These are the minimum criteria, you can use more than these. Your application should work without any errors, so don't forget to run and check your application.

Bonus:

- When you eat a food, there is a chance that a power-up will show random place on a screen in few second and you need to eat that power-up, if it's not eaten, it will disappear. Certain power-ups have positive effects, while others have negative, making it important to try to collect the beneficial power-ups while avoiding the detrimental power-ups. (*minimum criteria for 3 people groups*)
- Good game experience/pleasure (*minimum criteria for 3 people groups*)
- Save and Load High Score information to/from disk (*minimum criteria for 3 people groups*)
- Using multiple Threads
- HTTP download (e.g. download and display of high scores of other people which are set on a webpage) (*minimum criteria for 3 people groups*)
- Creating smooth online game.
- Three or more players can be play the game. (You don't need to use any server. You can connect three or more computers to each other with Ethernet switch.) (*minimum criteria for 3 people groups*)

Limitation:

You cannot use third party libraries in your project.

Project Report:

You need to prepare project report.

Teamwork:

You are expected to work as teams, since one outcome of this course is to teach you to do teamwork in software development. That is why if you submit as a single person you will be graded from 60% of the full grade. The project is for 2 people but you can create groups of 3, but you have to do more work than minimal requirements to get full grade.

Cheating Policy:

Cheating is strictly prohibited. It must be you own work. Do not use each other's code. In such case all the cheaters, including the original project, will be penalized heavily. Do not include external people for help.

Submission:

Project Announcement date: 20 April 2018

Last Submission date: 13 May 2018 23:59 (Late submission will not accept)

You have to upload your project with executable jar file using itslearning system.

Don't forget to add your Project Group's Members using itslearning system.

Your project file name must be same your group members name. Do not forget to zip your project.

Presentation:

Presentation date: Will be announced later.

All presentation will cover after the 13 May 2018 so plan your holiday for your presentation. If you don't do presentation, you won't get any point from project. Detail information will be announced later.