

Assignment 2

In this assignment you will create a simple Snake game.

The player controls a snake on a game field using four directional buttons. Snake eats dots, which appear in random places of the game field. Each eaten dot makes snake longer. The longer the game runs, the faster snake moves. The game ends if snake hits itself or any other obstacle on the game field.

Implementation Requirements

1. Start with an empty game field, where borders of the game window are walls. So snake dies if it hits them.
2. Remove walls and make game field a torus. So when snake hits top border of the window it should appear from the bottom.
3. Add some static obstacles on the game field.
4. Add snake bots, which move randomly.
5. (Optionally) Implement different algorithms for snake bots. Use colors to distinguish between them.
6. (Optionally) Create obstacles randomly using a maze generation algorithm.
7. (Optionally) Add a leaderboard, which will store player name, time (how long the game run), and points (how many dots eaten).
8. The game should be implemented using multithreading paradigm. So game field drawing, user control, and bots should run in different threads.

Submission Instructions

Submit **zip** archive with your *.java files to Moodle. Each file should include your name using @author annotation.

```
1 /**
2  * @author Vasilii Artemev
3  * Innopolis University
4  * Summer School 2015
5  */
6 public class GravityCalculator {
```