CSS-102: Programming Technologies (Java)
Final Project (Part-2 of 2)
Deadline: May 19 (Friday) 18:00
100 points (10% from Total)

Introduction

The goal of this part of the project is for you to practice more such topics as multidimensional array manipulation, dynamic programming, algorithms, and multithreading.

Project Requirements Overview

As mentioned before, you will be continuing the first part of the project. In this assignment, you will be implementing your own agent player ("BotPlayer") that will move and eat food on its own without explicit control. So, you are supposed to write an algorithm that will move the ball automatically based on the position of the food given.

The testing process will go through the following 3 main stages:

1) Given a static food with no time limits at a random position in an empty map (no walls), the bot starts at the position (0, 0), moves like a "snake" (right, down, left, down, right, …) through each cell in the map until it reaches the food where it should stop.

2) Given an empty map, food elements appear one by one as usual with time limits. The bot starts at a random position, and must reach each food using the shortest path. Note that food time shall depend on the possible shortest path as well.

3) Given a customized map with some walls, the bot is supposed to find valid path to food.

4-Bonus) Competition
In this stage you will compete with your friends' bot players. Multiple players, multiple food elements… You will have access to the positions of other players, food positions and time, and will need to eat as much as possible. The best algorithm will give us the Winner!

Notes on Grading

All previous conditions still apply.
Again, make sure that you write your own code, and what is more important, do not share it with anyone.
Some students had problems with this issue in the last assignment.

Turning In

1) Turn in your single java file (BotPlayer class) via **Edmodo** (unless told otherwise by your lab instructor);
2) See your lab instructor to demonstrate your work, answer some questions, and get it graded.
   Your lab instructor may have a special schedule for project submission.

Works that are not turned in will not be accepted. Submitted but not demonstrated works will not be graded.