Gebze Technical University
Department of Computer Engineering
CSE 241/501
Object Oriented Programming / Programming
Fall 2022
Homework # 7
Java Programming
Due date Jan 21st 2023

In this homework, you will write your simplified Tetris game in Java.

An class named Tetromino that will represent the Tetris pieces as described in HW 2.

Your Java class will be named Tetris. It will have at least the following methods

- Constructors to take the rectangular size of the Tetris board.
- Method to add a Tetromino to the board. The new Tetromino will be added at the top row in the middle.
- Draw function to draw the Tetris board. It will optionally start the drawing from the top. See how to move your cursor to the top of your screen on a UNIX terminal at https://en.wikipedia.org/wiki/ANSI_escape_code#CSI_sequences. Note that your code will not be portable because it will work only on certain consoles.
- Animate function to animate the added tetromino droping to the bottom of the board. The animation will be repetition of four steps:
    1. Draw the board with Tetromino at the top
    2. Rotate and move the Tetromino to some random position at the top
    3. Draw the board again
    4. Sleep 50 miliseconds
    5. Lower the Tetromino one level and go to step 3 until it hits the bottom.

You will submit two driver source files, each will include a main method. Your first driver code will test each member methods of both classes (Tetris and Tetromino) and print (or show) the result on the screen.
Your second driver code will do the following

1. Ask the user the size of the Tetris board
2. Ask the Tetromino type (I, O, T, J, L, S, Z). User may enter R for random Tetromino, Q for quit.
3. Add the asked Tetromino to the board and animate
4. Go to 2

Notes:

- You will submit 2 Java files for two classes. You should also submit 2 driver Java files named driver1.java and driver2.java
- Your program should have proper JavaDoc comments. Do not forget to indent your code and provide meaningful comments.

- Check the validity of the user input.
- **Test your programs very carefully at least with 5 different runs. For some runs use trivial cases such as 3 O tetriminos.**
- You should submit your work to the Teams page using the instructions from the TAs.