

Token Lab

Create a new project named token_lab. Copy TokenPa.java and into your project. You will implement code in empty routines

Make sure you use correct java conventions.

A Multiplayer game called Token Pass has the following rules.

Each player begins with a random number of tokens (at least 1, but no more than 10) that are placed on a linear game board. There is one position on the game board for each player. After the game board has been filled, a player is randomly chosen to begin the game. Each position on the board is numbered, starting with 0.

The following rules apply for a player's turn.

- The tokens are collected and removed from the game board at the player's position.
- The collected tokens are distributed one at a time, to each player, beginning with the next player in order of increasing position.
- If there are still tokens to distribute after the player at the highest position gets a token, the next token will be distributed to the player at position 0.
- The distribution of tokens continues until there are no more tokens to distribute.

The Token Pass game board is represented by an array of integers. The indexes of the array represent the player positions on the game board, and the corresponding values in the array represent the number of tokens that each player has. The following example illustrates one player's turn.

Example

The following represents a game with 4 players. The player at position 2 was chosen to go first.

Player	0	1	2	3
Tokens	3	2	6	10

The tokens at position 2 are collected and distributed as follows.

- 1st token – to position 3 (The highest position is reached, so the next token goes to position 0.)
- 2nd token – to position 0
- 3rd token – to position 1
- 4th token – to position 2
- 5th token – to position 3 (The highest position is reached, so the next token goes to position 0)
- 6th token – to position 0

After player 2's turn, the values in the array will be as follows.

Player	0	1	2	3
Tokens	5	3	1	12

- (a) Write the constructor for the TokenPass class. The parameter playerCount represents the number of players in the game. The constructor should create the board array to contain

playerCount elements and fill the array with random numbers between 1 and 10, inclusive. The constructor should also initialize the instance variable currentPlayer to a random number between 0 and playerCount -1, inclusive.

(b) Write the distributeCurrentPlayersTokens method.

The tokens are collected and removed from the game board at the current player's position. These tokens are distributed, one at a time, to each player, beginning with the next higher position, until there are no more tokens to distribute.