CMPE 261 - Large Scale Programming

Assignment-03

Deadline: 23:00, December 18

In your assignment,explain your codes with *comments*. Without *comments*,your assignment will not be marked.

Problem

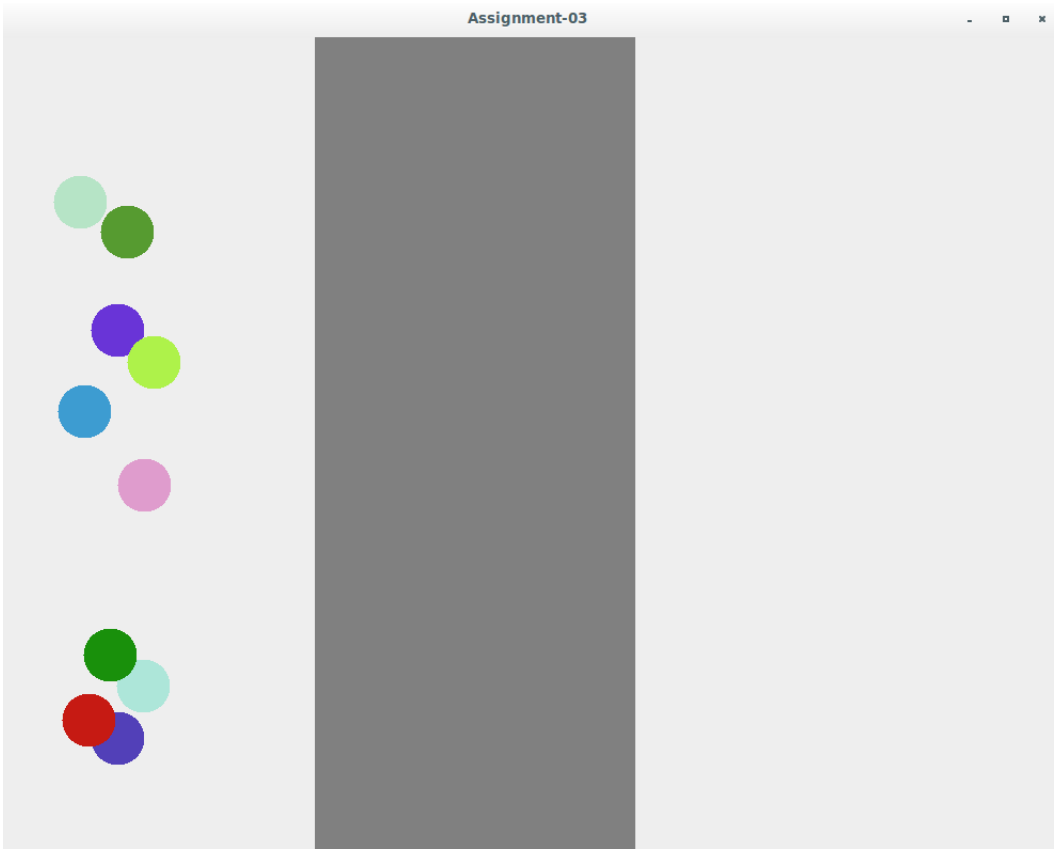
In this assignment you are asked to implement a simple multi-thread program that simulates vehicle controlling of a bridge that it has limited carry capacity.
Vehicles may be represented with random generated circles and each circles must be controlled (moved) its own threads. Do do this:

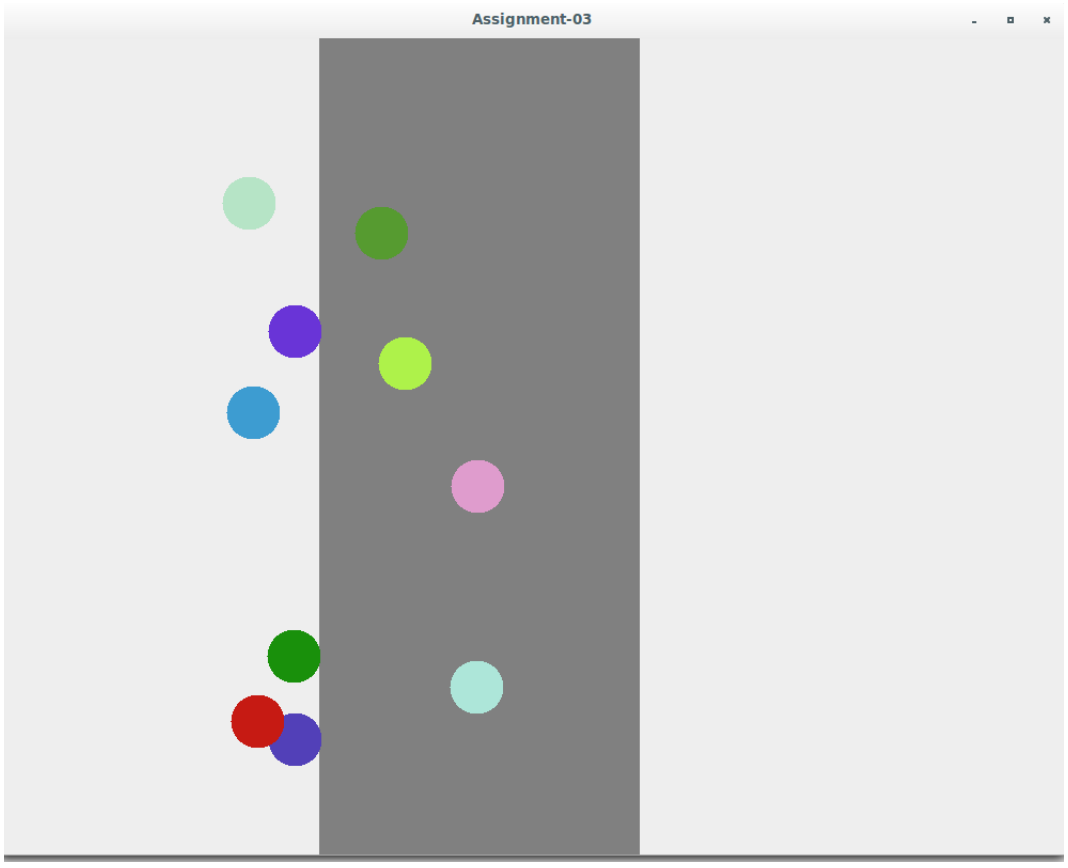
- Each circle should have its own color, coordinate, speed(use this data to move circles) and all of these data must be generated randomly.
- While the vehicles moving, their properties (data that generated in item one) should not be changed
- Once vehicles arrived to the bridge, vehicles allowed pass according to bridge capacity, and other vehicles have to wait till the bridge free space for others. Once a car passed through the bridge, one of the waiting vehicle start to use the bridge (see demo)
- Total vehicle numbers that will pass the bridge and the bridge capacity should be given from the command line
- Because there are multiple threads in this application, you should consider which part of your program have to solve mutual exclusion (if there is a shared data) and be sure your implement is thread-safe.
- To execute this program, run it as below:

```
java Bridge 10 4
// It means there 10 vehicles and the capacity of the bridge is 4.
//See related figures in below, also wathce the dome
```

- Watch the project demo in detail before start your project!.

See the demo for this assignment.

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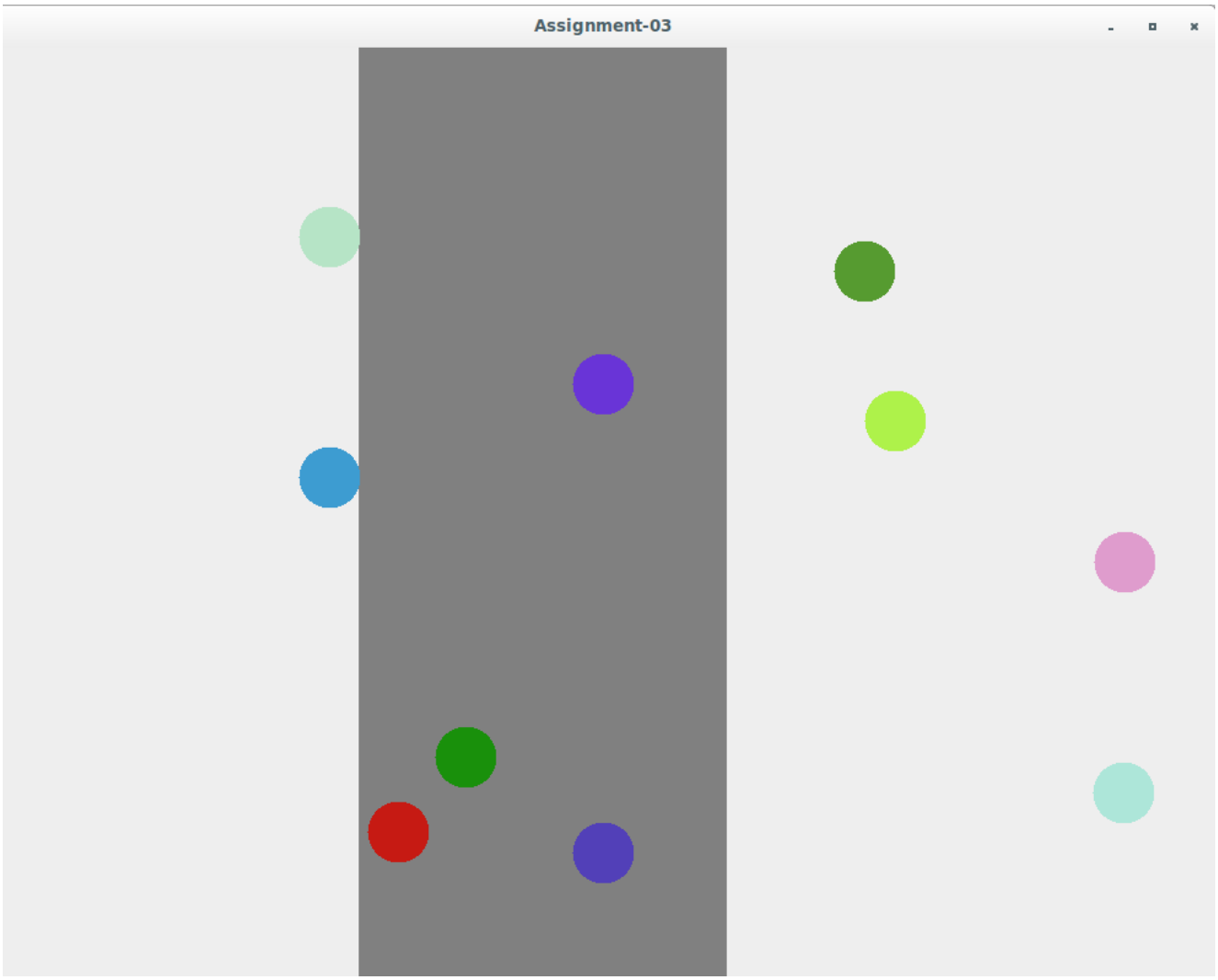
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